

since 1867 to the provincial work, one state, New York, exceeds the whole in quantity of matter. Pray notice that I am not discussing in any manner the respective value of the work itself. I am very anxious to impress the legislatures of the Canadian provinces as to their shortcomings, and in order to do so I shall, at the risk of wearying you, press the point still further. If one were to look over a collection of reports on geology and paleontology of the various states he could at once count between 75 and 100 quarto volumes illustrated with fine maps and literally many hundreds of plates describing many thousands of fossils and other things of course besides fossils. And then turning to octavo volumes, similar to our own, I should be afraid to say how many hundred volumes he could count, but the total result would satisfy you that I am warranted in saying that we stand disgraced until we bestir ourselves and show that we possess ordinary intelligence regarding such matters. I shall not further hurt our pride as Canadians by comparing our position with that of many South American republics whose limited civilization we are wont to deplore.

We now come to the work done by the Geological and Natural History Survey of the Dominion. Although the series of publications from 1843 to date is unbroken I have separated them in order to consider the work done by the Dominion Government apart from that of the old Province of Canada. The change which was caused by Confederation was of very great importance, although it does not seem to have impressed itself on the Canadian people. Just before Confederation we had in operation a survey of what now constitutes portions of Ontario and Quebec, which would have year by year become more minute in its character until we reached such results as those obtained in many of the States where each county is reported upon so fully that the nature of its water courses, the character of its soil, the area of its forests, the value of its minerals, building stones, clays for brick-making, etc., etc., are published in such shape as to be available to anyone interested in such matters. But instead of this very desirable consummation of the early labours of Sir William Logan his work was largely arrested by Confederation, and there was thrust upon the Survey a problem similar in character to that undertaken by him in 1843, but incomparably greater in extent, namely, the survey of an area larger than that of the United States, if we exclude Alaska. I refer to the problem as similar in kind to that undertaken in 1843, because it was destined for many years to be mainly topographical and only subordinately geological. As late as 1880 the present director of the Survey, in demonstrating the inaccuracy of our maps of the northern and western parts of the Dominion wrote as follows:* "It is very commonly supposed, even in Canada, but to a greater extent elsewhere, that all parts of the Dominion are now so well known that exploration, in the true sense of the term, may be considered as a thing of the past. This depends largely upon the fact that the maps of the country generally examined are upon a very small scale, and that upon such maps no vast areas yet remain upon which rivers, lakes, mountains, or other features are not depicted. If, however, we take the trouble to enquire more closely into this, and consult, perhaps, one of the geographers whose name may appear on the face of the map which we have examined, asking such awkward questions as may occur to us on the sources of information for this region or that, we may probably by him be referred to another and older map, and so on till we find in the end that the whole topographical fabric of large parts of all these maps rests upon information of the vaguest kind.

"Of most of the large areas marked upon the map here shown, this is absolutely true, and the interests of knowledge, with respect to these, would be better subserved if such areas were left entirely blank, or, at least, if all the geographical features drawn upon them appeared in broken lines in such a way as to show that none of them are certain. In other regions, the main geographical outlines, such as the courses of the larger rivers, are indicated approximately, with such accuracy as may be possible from accounts or itineraries derived from travellers or from officers of the Hudson Bay Company; or from the descriptions or rough sketches of Indians or other persons by whom the region has been traversed, but who have been unprovided with instruments of any kind, and whose knowledge of the country has been incidentally obtained."

* "On Some of the Larger Unexplored Regions of Canada." G. M. Dawson, Ottawa Naturalist, Vol. IV, 1890.