

investment as our expenditure on canals and railroads. I approve of state aid to railroads and canals in a new country, because transportation is one of our greatest problems, but the first duty, the very first duty of an intelligent country, is to know what it has or may have to transport.

In conclusion I should like to say a few words as to what we might reasonably expect in the way of Dominion and Provincial surveys. We should have the Dominion and Provincial surveys working out the topography in a far more minute manner and on a greatly larger scale than at present. We should never again send out a topographic party, a boundary party or a land surveyor laying out a base line, without being accompanied by trained geologists and naturalists. The history of our own Northern Ontario is an example of what we have failed to accomplish in this respect. We should not only publish annually such broad truths of geology and natural history as are gathered during these rapid topographic surveys, but we should be engaged in our provincial surveys on reports dealing with the features of each county separately, and in our Dominion Survey in working out special problems of geologic or other scientific interest. For instance, in the United States there are many complete monographs dealing with the iron ores of different localities, or the coal, or natural gas, or the forestry conditions, or other problems of great commercial importance. Have we no curiosity about our great areas of iron ore, our really wonderful coal fields, and our other minerals? Should we not appreciate intelligent monographs on the treatment of refractory ores, on modern mining machinery, on brick-making, salt-wells, gas-wells, and the many other things so intelligently presented to the people by the State in more favoured countries? Of course we should. Let our Governments but try.

And as to Public Museums. The Dominion Government at Ottawa and each province, at its city of chief importance, should have a museum belonging to and supported by the people. These museums should contain exhibits of the metallic and non-metallic minerals of the country, both those of economic and of merely scientific value, the forest trees, with the bark preserved, in say six feet sections, cut also and partly polished, and each specimen accompanied by a small map showing its habitat; the fresh water and sea fishes, mounted after the modern methods; the fur-bearing animals, the game birds, and the birds of our forests, fields and sea-coast, many of them mounted so as to tell a child their habits at a glance; the reptiles, crustaceans, insects, plants, indeed as complete a record of the fauna and flora of the country as possible; the rocks of stratigraphic importance and all the varieties of fossils which can be gathered in this country; the archaeological and ethnological evidences of the races we have supplanted in Canada, and much more that does not occur to me at the moment. I should not like to suggest a limit of expenditure on such museums. The necessity of a new building at Ottawa is admitted. The crime of leaving exposed to fire, in a wretched building never intended to protect anything of value, the precious results of over fifty years of collecting, has been pointed out in a recent official report. But the Government seem deaf to such claims. I can only repeat that we are rich enough to bear the cost with ease, but we are not intelligent enough to see our own interest in spending the money.

I have been careful to indicate that so far as this is an account of what has been done in geology and natural history in Canada, it is mainly a record of work done officially, that is for the governing bodies and not by individuals unassisted by public money. But it must not be supposed that I am unmindful of the fund of information which has reached the public through the journals of the scientific societies of Canada, some of which have been labouring for over half a century in this field of higher education. Nor must I fail to acknowledge that such societies are, as a rule, aided by public grants of money. It would have been a great pleasure to have mentioned many of the writers and investigators who have contributed gratuitously in the past to this fund of knowledge, but I can do no more than to record here our gratitude to some of the living geologists—to Sir J. William Dawson, Dr. G. F. Matthew, Prof. L. W. Bailey, Dr. J. W. Spencer, Dr. F. D. Adams, Prof. A. P. Coleman, Mgr. J. C. K. Laflamme, and all others who still labour in the good cause, although not members of our Survey. I am aware that I should add the names of many botanists, ornithologists, entomologists and other