

sources, it is California, which has so long invited capital from abroad, and begins to wonder why the population is so small when her natural resources are so great." And then he goes on to say: "There have been so many mistakes regarding the character of our mining districts, and so many misstatements to those who have been asked to invest their capital in California, that there is need of an official source of information relating to the varied resources of the State. This can be best accomplished by granting to the institution a liberal support. While this institution is called a Mining Bureau, its usefulness has been general, and the merchant, manufacturer and agriculturist are, and should be, deeply interested in its success." It is unnecessary to say that these remarks are quite applicable to Canada. This report contains a special memoir on the borax deposits of California, the greatest producing borax region in the world. Other memoirs and papers have already been published by this Bureau, on hydraulic mining of salt, diamonds, &c., since the establishment of the Bureau. Take the example, again, of the Geological Survey of the State of New Jersey, which has not only lately published special memoirs on its iron ores, but a volume upon its clays used for pottery and other purposes, the mining of which is a great source of wealth to the State.

Q. Can you suggest any changes in our present system which would, in your opinion, improve its efficiency? If so, what changes would you recommend, and how much increased expense, if any, would such changes entail?—That is a very large question, and one would have to weigh many considerations before coming to a conclusion. My great point would be, as I said, to imitate in some respects the Mining Bureau just described, and to have men charged with the business of looking after the mining regions, either taking it up in regions, or in special subjects; for instance, one might take up the mining industries, a second the salt, and a third the copper, the report showing the exact state of these industries at the present time, their past history so far as we know, and suggestions for their future development which may be considered necessary. Great ignorance exists among the people as to what constitutes a mine, and what are the conditions that warrant the expenditure of money in opening them. Many a time money has been spent in the following up of little leads, which are of no economic value at all, and at other times valuable deposits are passed by because the persons having them are really ignorant of the true way to work them. There should be a Bureau in which instructions might be given with regard to the best modes of opening mines and utilizing their material, whether smelting should be undertaken, and whether iron manufacture should be undertaken, and what methods are best adapted for the region, and for the ore. Large sums of money have been spent uselessly in this direction, in the last few years, and it is not only the waste of capital which should be considered, but it also produced discouragement and want of confidence in the metallurgical industries throughout the country. Therefore, I think we want skilled and trained mining engineers and metallurgists to give information upon almost every point throughout the country. There should also be a library, not merely of scientific and theoretical books, but a library where any person could go and consult the works which would give them the information which they required, and where they might see models of mines, machinery, furnaces, &c., which would give them an idea of how underground work is done. The history of the apatite mining in Canada shows what mischief is done when such mines are left in the hands of persons ignorant of mining. Therefore we want practical instruction available to every one in the best methods of mining and of abstracting the materials. Then I think the subjects of the soil and their relation to agriculture ought to be put in the hands of persons specially competent to deal with it. I am not prepared to say, as I know so little of the work that has been done in the great North-West in the past few years, how far the Geological Survey has undertaken work which might be left to another department, because I am not aware of the amount of work of that kind which has been done, though I have reason to believe that large sums of money have been expended in that direction. I think the construction of the detailed geological maps of these regions is subordinate to the great economic question, and should grow up slowly with the