

memoir of about twenty pages, written by specialists on the ground, and giving a history of the mine and the industry connected with the phosphates, and the whole of the statistics relating thereto. They are not purely statistics, but are combined with mineralogical and geological information. I have just received a volume from the State of Alabama, containing a report of the work of the Geological Survey in connection with the Census Commission of 1880, which includes a most valuable report on the relations of geology to that region. This report is published as the work of the State Geological Survey, and contains the complete exposition of the relations between the rocks and the soil drainage, and adaptability to various crops, as well as accounts of the rainfall in summer and winter, the temperatures and forest distribution, all of which are considered with reference to the physical geography and geology. I will read you a paragraph from a report written by Prof. Eugene Shith, which is as follows: "Whence have the material of these soils come; by what agencies have they been prepared and distributed; how have the products of rock disintegration come to assume the peculiar mechanical condition which characterizes soils; how have soils acquired these chemical qualities which distinguish them from the solid parts of the earth's crust; upon what constituents do their remarkable property of absorption depend; and by what means are they affected? These are questions which must interest every one who cares to look beyond the mere surface of things, and to answer them in some measure has been my aim in the first part of the report." The basis of intelligent and scientific agriculture has been prominently placed in his report.

Q. Do you know the appropriation for the State of Alabama?—I do not think it is more than \$5,000 or \$6,000 a year; I know it is very small, for he gives, as one of the reasons why he was not able to report fuller, and with more maps and illustrations, is that it would have required the whole appropriation allowed by the State for many years. The report discusses the variety of soils in the State, their composition, and their origin and fertility, and then takes up the question of the different crops, and shows the temperature, the rainfall and the distribution of the forests, and their relations to the cotton culture. In fact, I do not hesitate to say that the facts published in such a volume would be of more immediate practical value to Canada than the volumes of the Geological Survey for the last ten years, which have cost so much money. I might also call your attention briefly to the work that has been done lately in California; they had a Geological Survey in California, and to tell the history of it would be almost to repeat the history of the Geological Survey of Canada, except that it was put an end to by the Legislature three years ago, and since then, in a humble way, a State Mining Bureau has been established. The Bill appointing it was passed in 1880, and the State Mineralogist, in a short report, presented on the 30th of June, says: "The California State Mining Bureau was created by an Act of the twenty-third Legislature, approved April 16th, 1880. The first section of the Act provides for a principal office in the City of San Francisco, 'in which there shall be collected and preserved for study and reference, all the geological and mineralogical substances—including mineral waters found in the State.' The same section further provides for a collection of mineral rocks and fossils of other States, Territories and countries, to be at all reasonable hours open for inspection and examination and study. A Section provides for a library of works on mineralogy, geology, and mining, and a collection of models and drawings, of mining and modelling machinery used in the reduction of ores, and directs the opening of correspondence to obtain information respecting improvements in mining machinery of practical value to the people in the State. The State mineralogist is instructed to visit the several mining districts to ascertain and record their history, and to describe their geology and the ores they produce. At the close of the year he is directed to report in detail to the Governor. By section four, the State mineralogist is allowed to appoint assistants when the condition of the funds will permit. All other provisions are secondary and subservient to the Museum, which is made the principal feature of the institution." When speaking of the importance of Museums, he says: "What applies to other countries applies equally to California, for if there is any State that needs to show her natural re-