

STATE OF WYOMING.

Geologist's Office.

Chevyenne, Wyoming, Oct. 22nd, 1890.

Sir:

My report dated January, 1890, submitted to you at the meeting of the last Territorial legislature, was not issued from the press until the latter part of June last, now scarcely four months ago. In that report I described, so far as I was able, the mineral deposits of vital importance to the state that I had not previously mentioned in my report of 1888, and I brought the description up to a very recent date.

Believing last Spring that Wyoming would be admitted to statehood during the summer, and knowing that in any event my next report would have to be made before November 1st, 1890, I did not consider that the time would admit my preparing a carefully written dissertation, containing sufficient new matter to render it worthy of your recommendation to the legislature for publication, as a regular and formal annual report. Accordingly, while I have spent several months in the field, have visited various portions of Carbon, Fremont, Weston and Crook counties, and have collected much general information and data, sufficient for at least two special bulletins, all of which will go into the records of my office as a basis for future work, I only tender you here a short report dealing exclusively with the condition of my office, and with certain questions of interest and recommendations which I regard as pertinent.

CONTINGENT EXPENSES & SALARY.

The practical value of a geologist to a commonwealth lies not only in the information and advice he may give by letter or word of

month to the miner, or investor, but very largely in the economic reports which he furnishes for publication. Such reports should not be technical expositions of interest merely to the scientific world but practical and concise descriptions of developed mineral deposits and as complete descriptions of newly discovered and undeveloped localities that are capable of being made producers as the collectable data will admit. They should be of such a nature that the prospector may use them as a guide in making discoveries, the capitalist as a guide in selecting special fields for the careful inspection necessary to sound investments in mineral lands.

[The last legislature adjourned without making any general appropriation for the salaries and contingent expenses of the various Territorial officers, and without providing for the publication of any of the biennial reports. As a consequence, at the beginning of the present fiscal year, I found myself, together with the various other officials, not only without a salary appropriated, but with the result of two years' work locked up from the use of those who are largely interested in the development of our mineral resources. I could not regard this or any other action of the legislature in any way as an official expression of their desire to discontinue the office of geologist as a salaried position, and as I had formally applied to you for appointment and had received the honor of your favorable consideration and nomination, and its sanction by the Council, I considered it my duty to perform the functions of my office and meet all the necessary expenses connected therewith, to publish my report, and to await the meeting of the next legislature for repayment of the money outlaid, and payment of my back salary. In laboring under these conditions, I deemed it necessary to make

only that outlay of money that circumstances at once demanded and to incur no expense that I could avoid, and yet allow the administration of my office to remain uncrippled. This will cause the necessary outlay of the first State Geologist to be more than normal at the start, as it will be imperative for him to purchase some new office furniture, to fit up the chemical laboratory in the basement, and to purchase chemical apparatus and supplies in addition to that now in possession of the office. But by doing this, I have largely decreased the otherwise large sum that I would have had to advance and to limit my total outlay for all contingent expenses, including the cost of printing my last report, to little more than the six hundred and twenty-five dollars, (\$625.00) which would have been due September 31st, last, had the appropriation for the contingent expenses of the office for the years 1889-90 been renewed last Spring. Including the printing of my report, and all other money that I have advanced for the use of my office, my expenditures have amounted to little less than seven hundred dollars, (\$700.00). An itemized account of these expenses, with vouchers, will be prepared and presented to the State Auditor.

There was due to me as salary upon the 31st of September last, the sum of Nine hundred dollars, (\$900.00), and there will be due to me in addition to this an amount determined by upon a basis of one hundred and fifty dollars per month for the length of time elapsing between the 31st of September, 1890, and the expiration of my term of office.

R E C O M M E N D A T I O N S.

COAL MINE INSPECTOR & GEOLOGIST.

The State Constitution, Article IX, contains the following sections:-

Section 1. There shall be established and maintained the office of inspector of mines, the duties and salary of which shall be prescribed by law. When said office shall be established, the governor shall, with the advice and consent of the senate, appoint there to a person proven in the manner provided by law to be competent and practical, whose term of office shall be two years.

Sec. 6. There shall be a state geologist, who shall be appointed by the governor of the state, with the advice and consent of the senate. He shall hold his office for the term of six (3) years, or until his successor shall have been appointed and shall have qualified. His duties and compensation shall be prescribed by law. No person shall be appointed to this position unless he has such theoretical knowledge and such practical experience and skill as shall fit him for the position; the state geologist shall ex-officio perform the duties of inspector of mines until otherwise provided by law.

Coal mining has become a great industry in the state. There is a demand for coal now which the railways are not capable of supplying. The very large, populous and rapidly growing region that forms the natural market for this product also guarantees a constantly increasing demand for years to come. Under the recent stimulus the industry has received, the number of producing mines has doubled during the past two years, and there is every probability that new mines will be opened annually for years to come. Further, the mines are no longer along altogether one line of railway, but upon three different lines, and in widely separated localities. With the growth of the industry, the duties of the Inspector of Coal Mines have become more horridous, and he will find it difficult to

make his quarterly visits and examinations of every mine in the State, as the present law requires.

The development of this and other mineral resources in the State likewise yearly increases the duties of the geologist, and surely demand the work of one man in the field and office together. For this reason alone, and I think I could adduce other reasons, it would be in my opinion impossible for one man by himself to attend to the duties of both offices. Were the geologist made ex-officio inspector of Mines, it would be incumbent that he should be furnished with a deputy, who would largely, if not altogether attend to the field duties of the Coal Mine Inspector. The two offices have little in sympathy except in the common ground of coal mining statistics, and I would strongly recommend that the two offices should remain separate and independent as heretofore.

#### CHEMICAL ASSISTANT.

I feel that I have no right to recommend to the legislature, the creation of the office of chemical assistant in the geologist's Department. An efficient man could not be obtained for less than \$1800.00 per annum. Yet there can be little doubt in my mind that such an assistant would greatly increase the value of the office to the state. With a man in the field, and a man in the chemical laboratory and office, the amount of work that the geologist could do would be quadrupled, and the reports furnished by him would be much more valuable than they are now. Besides the work the chemist would do for the state, he could build up a practise among the citizens of Wyoming as an assayer. In my opinion, he could, in two years time, by charging moderately and doing good work, earn more than his salary would amount to. Under the Constitution, the term of State

Geologist holds for six years. I firmly believe that if the incumbent were to hire a chemist at his own expense at the outset of his term at a salary of \$1800 per year, it would prove a paying investment. But it would undoubtedly require an outlay of several thousand dollars during the first two years, until the venture were put upon a paying basis, and probably two years more before the net earnings would pay it back. I would therefore respectfully recommend to the legislature, that they should empower the geologist with the right, should he so see fit, to hire an assistant at his own expense, and to receive all fees resulting therefrom, during his term of office for so doing. I make this recommendation because, while I believe the venture would prove a profitable one, I do not know it as a fact. Should the legislature agree with me in the premises, I would recommend them make an appropriation for such an assistant themselves, and have the receipts turned into the State treasury.

#### THE WORLD'S COLUMBIAN EXPOSITION.

The importance of a creditable exhibit by the State at the World's Fair at Chicago, in 1893, can scarcely be over-estimated. However, like an anti-climax it may seem, I believe it true that the discovery and application of advertising as a means of developing things of worth ranks with the wonderful discoveries in the fields of power transit and transmission which the present age has seen. Wyoming is no exception to the newer portions of the West. All the western states have undeveloped resources of merit, which await utilization through the power of capital. This is true to such a extent that I believe the resources to be in excess of the demand for mineral products, and large capitalists that will unquestionable look to the

World's Fair for information bearing upon investments will have a larger field to choose from, and the various states will have to enter in to friendly competition among themselves in order to gain it. On these grounds, I believe it incumbent upon the state to provide the most creditable and varied display possible of all of her resources. In former reports from this office, and from the office of the Territorial Engineer and Inspector of Mines, the resources of the State are quite fully treated. Inspection of these reports will show what you already are fully cognizant of, that our products are varied and wide spread in their occurrence. They are to be found not only along the railways, but in many localities removed from developed lines of traffic, and separated from them by rough lands and mountain ranges. Not only will it cost money to collect a creditable display but it will take much time and care. A little more than two years will elapse between the adjournment of the present legislature, and the opening of the World's Fair, and I regard it as absolutely necessary to the success of the undertaking that this full period be given to the collection of the display. It will not only require time but money also, and it stands to reason that until, a certain limit is reached the larger the amount of money set aside for this purpose, the better the display will be. It would be impossible to sketch the exact form and nature the exhibit should possess. That will have to be determined by the careful labors of those in charge of its collection through the entire time devoted to it, and by the amount of money they may have at their disposal. It can only be said here that it should embrace every possible form of product of economic value the State can fur-

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nish, whether from agricultural, mineral or manufacturing departments. It should be relieved by a varied display of invertebrate fossils and the curiosities to be found in abundance and by works of art and industry which may be considered of merit. As you have already stated, the last named features would perhaps have no great direct value as an advertisement, but would give beauty and relief to the display and attract a popular interest that would bring many to investigate our economic resources. The collection of such a display should be put in charge of a committee. I believe they will regard their work as a labor of love and public trust, and will strive in as far as the means furnished them will permit to make it the greatest possible credit to the State. I have already given this subject much thought and have found a number of general ideas which I had intended to formulate as recommendations in this report. However, I saw in the Cheyenne Daily Sun of Oct. 13th, 1890, an interview with Mr. Henry G. Hay, upon the subject of an exhibit at the World's Columbian Exposition. Mr. Hay, through his familiarity with the resources of the State, as a member of the United States Commission, and through his broad public spiritedness, was able to sketch out a most valuable plan of action. In reading his interview I found that he had not only arrived at most of my prominent ideas independently, but at others of equal or greater importance. I accordingly requested him to address me a letter embracing the prominent ideas he there advanced, and whatever else he might see fit to add. He kindly acceded to my request, and I affix his letter as an appendix to my report. I would respectfully call your attention, and through you, the attention of the legislature, to this letter. I strongly endorse all the ideas Mr. Hay advances, and

recommend that they be used as a basis in the adoption of a measure  
to provide for a creditable display.

I am, Sir, very respectfully,

*Louis D. Rickerts.*

TERRITORIAL GEOLOGIST.

To His Excellency,

Francis E. Warren,

Governor of Wyoming.