

NEW MEXICO.

FEBRUARY 16, 1889.—Committed to the Committee of the Whole House and ordered to be printed.

Mr. SPRINGER, from the Committee on the Territories, submitted the following

REPORT:

[To accompany bill H. R. 12592.]

The Committee on the Territories, to whom was referred the bill (H. R. 12592) to enable the people of New Mexico to form a constitution and State government and to be admitted into the Union on an equal footing with the original States, having had the same under consideration, have instructed me to report the bill back without amendment, and recommend that the same be passed.

This bill provides an enabling act for the people of the Territory of New Mexico, by the terms of which a constitutional convention will be held in the Territory, and the constitution framed submitted to the people for their ratification or rejection. All persons who have resided within the limits of the proposed State for sixty days, and are otherwise qualified by the laws of the Territory to vote for the representatives to the legislative assembly thereof, are authorized to vote for delegates to form the convention.

The governor, the chief justice, and the United States attorney for the Territory are authorized to make the apportionment for the districts in which the delegates should be elected; and the governor is authorized to order an election in said Territory on the Tuesday after the second Monday in May, 1889. The number of delegates in the Territory is to be seventy-five.

The constitutional convention will assemble at the capital of said Territory on the 4th day of July, 1889, and when assembled it shall adopt the Constitution of the United States and proceed to the formation of a State constitution. It is provided that such constitution shall be republican in form and make no distinction in civil or political rights as to race and color, except as to Indians not taxed, and not to be repugnant to the Constitution of the United States and the principles of the Declaration of Independence. The convention shall further provide by ordinance that perfect toleration of religious sentiment shall be secured and that no inhabitant of said State shall ever be molested in person or property on account of his or her mode of religious worship.

The convention shall also provide that the proposed State shall forever disclaim all right and title to the unappropriated public lands lying within the boundaries thereof, and to all lands lying within the limits of this State owned or held by any Indian, or any Indian tribe, and that until the Indian titles thereto shall have been extinguished by the United States, such reservations shall be and remain subject to the disposition of the United States, and said Indian lands shall remain under

the absolute jurisdiction and control of the Congress of the United States.

Other provisions usual in enabling acts are preserved, especially that the debts of said Territory shall be assumed and paid by the State, and that provision shall be made for the establishment and maintenance of a system of public schools, which shall be open to all the children of said State and free from sectarian control.

The constitution to be formed shall be submitted to the people of the Territory for their ratification or rejection at an election to be held in said Territory on the Tuesday after the first Monday in November, 1889. If a majority of the votes cast shall be for the constitution, the governor of the Territory shall certify the result to the President of the United States.

Said proposed State is to be entitled to one Representative in Congress until the next general census, and the Representative to the Fifty-first Congress shall be elected at the November election in 1889, and to be elected regularly thereafter as now provided by law.

The sections of the bill from 7 to 16, inclusive, enumerate the grants of land which said proposed State shall receive from the General Government. The grants are so adjusted as to make, as far as possible, the proposed State equal in this respect to the other States heretofore admitted into the Union. First, there is the grant of the sixteenth and thirty-sixth sections of all the lands in said Territory for the support of common schools. Fifty sections are donated to this State for the erection of public buildings at the capital of said State for legislative, executive, and judicial purposes. The usual grants are made for penitentiaries, agricultural colleges, and universities. Also, there is granted to this State 5 per centum of the proceeds of the sales of public lands lying within said State, to be used as a permanent fund, the interest of which only shall be expended for the support of common schools in said State.

It is further provided that in lieu of the grants of land for purposes of internal improvement made to new States by previous acts of Congress, and also grants made for swamp and overflowed lands to certain States heretofore, and in lieu of any grant of saline lands to States heretofore, special grants are given to the proposed State, as follows:

Permanent water reservoirs	\$250,000
Insane asylum	50,000
State normal schools	50,000
School of mines	50,000
Deaf and dumb asylum	50,000
State reform school	50,000
Total	500,000

The whole amount of lands donated to New Mexico by this bill is as follows:

Sixteenth and thirty-sixth sections	4,300,000
Capitol buildings (50 sections)	32,000
Agricultural college (90,000 acres)	90,000
University (72 sections)	46,000
Permanent water reservoirs	250,000
Other educational and charitable purposes	250,000
Total number of acres	4,968,000

It is due, however, to New Mexico, that it should be stated that it is not receiving a greater number of acres in proportion to its area than has been granted to other States heretofore admitted into the Union.

But, owing to the great area of this proposed State, the sixteenth and thirty-sixth sections, which are granted for common-school purposes, aggregate a much larger area than was granted for that purpose to most of the other States, but not as large in quantity as was granted to the State of California. The manner of selecting these grants and the disposition made of each is pointed out specifically in the provisions of the bill.

It is further provided in the bill that the constitutional convention to assemble in this Territory may, by ordinance, provide for the election of a full State government, including members of the legislature and a Representative in the Fifty-first Congress at the time of the election for the ratification or rejection of the constitution. In case the constitution of said State shall be ratified by the people, but not otherwise, the legislature thereof may assemble, organize, and elect two Senators of the United States; and the governor and secretary of state of the proposed State shall certify the election to Congress; and when said State is admitted into the Union as provided in this act, the Senators and representative shall be entitled to be admitted to seats in Congress, and to all the rights and privileges of Senators and Representatives of other States in the Congress of the United States; and the State government formed in pursuance of said constitution, as provided by the constitutional convention, shall proceed to exercise all the functions of State officers; and all laws in force made by said Territory at the time of its admission into the Union shall be in force in said State, except as modified or changed by this act or by the constitution of the State.

It is further provided that the constitutional convention to assemble in the Territory of New Mexico shall submit to the people, as a separate proposition, to be voted upon at the same time that the vote upon the constitution is taken, the question of changing the name of the State from that of the State of New Mexico to that name for the proposed State which said convention may select and indicate, and if a majority of voters shall be in the affirmative the name of the State shall, upon its admission, be changed accordingly; and all the powers, rights, privileges, grants, and obligations pertaining under this act to the State of New Mexico shall attach to, be vested in, and imposed upon the State by the name thus selected and adopted.

New Mexico was organized as a Territory by act of Congress approved March 9, 1850. It comprises an area of 120,210 square miles, or 77,568,640 acres. The Indian reservations in the Territory and the number of acres in each are as follows: Mescalero Apache, 474,240; Navajo, 8,205,440; Zuni, 205,040; Pueblos, 691,840, making a total of 9,586,225 acres in Indian reservations.

The population of New Mexico by the census of 1860 was 87,034. By the census of 1870 it was 91,874, and by the census of 1880, 119,000, showing a gain of 27,791 in ten years. There was an official census of the Territory in 1885, which showed a population of 134,141, or a gain of 14,576 in five years. The governor of the Territory, in his report for the year 1887, states that it is safe to say that nearly that number in addition has been added during the past two years, and that at the present rate of increase the census of 1890 will show a population of not less than 200,000.

The aggregate assessment of taxable property in 1886 was \$56,000,000. This assessment is found after deducting \$300 exemption from every tax-payer.

The growth of the Territory has been retarded very much, owing to

the unsettled condition of land titles. Efforts are being made to secure such Congressional legislation as will determine definitely the validity of all private land claims in the Territory, and thus open up large areas now withheld from settlement. The governor states that marked progress has been made in agricultural industries during the last year. Many thousands of acres have been brought into cultivation, and industry has been systematized by the introduction of improved methods of agriculture and irrigation. The governor's message sets forth in detail the agricultural and mining resources of the Territory. In reference to the agricultural resources of the Territory the governor, in his message of 1887, says:

Contrary to the popular impression in the East, a very large proportion of the lands of New Mexico are good agricultural lands, which will average well with those of any of the States East or West. A fair computation would put the mountainous portions at some 30,000,000 acres, the river valleys at 8,000,000, and the mesas at 40,000,000. On the mesas there are, of course, considerable areas that are impossible of cultivation, possibly 10,000,000 acres, while on the other hand there are in the mountainous districts many valleys and hill slopes at altitudes of 4,000 to 8,000 feet above sea-level, comprising some millions of acres, which are susceptible of successful cultivation, especially of all the small grains, all the common classes of vegetables, and of the hardier fruits. These valleys abound in the vicinity of the mining camps, which must always constitute for them a profitable market, while those valleys in turn by their vegetable products will materially contribute to the successful prosecution of mining by cheapening the cost of living and thus the cost of mining. So that at least one-half the area of New Mexico is susceptible of a high state of cultivation and successful farming. The river valleys especially are rarely equaled anywhere in productive energy.

When viewed in the light of the fact that in large portions of the Territory these lands are interspersed with forests of timber, vast deposits of coal, and quarries of excellent building stone, mines of all the precious and valuable metals, and a climate unequalled in salubrity and healthfulness, it will be apparent that New Mexico possesses rare attractions for the ambitious, energetic, industrious farmer and home-seeker.

The stock-raising industry is important. The number of cattle returned on the assessment rolls for 1886 was 916,940. The wool clip for that year is estimated at 14,000,000 pounds, and the number of sheep in the Territory at 1,702,000. Cattle and sheep constitute mainly the stock industry of the Territory. The mining resources of the Territory are important. The output of gold and silver in the Territory for the year 1886 was \$6,468,000, and since 1846 the output of gold and silver in the Territory has amounted to \$36,893,000. This statement does not include the shipments of ore sent to other States for reduction. Nor does it make any allowance for copper ingot, ore, and matte produced in the Territory, which must have amounted during that time to several millions of dollars. The production of these metals has not reached its maximum, but is increasing rapidly. The governor of the Territory, in his report for 1887, in speaking of the gold resources of the Territory, says: "These enormous deposits of gold, with equal extensive deposits of minerals of all kinds and grades, constitute a remarkable range and extent of undeveloped resources;" and he predicts the establishment and upbuilding of great manufacturing industries therein.

The people of New Mexico have made numerous efforts to be admitted into the Union as a State. Before the organization of the Territory, in June, 1850, a constitutional convention was held, a constitution was framed, submitted to a vote of the people, and adopted. At the same time a legislature and Member of Congress and State officers were elected. The State officers qualified and the legislature met on the 1st day of July, 1850, and elected two United States Senators. The Senators and Representative in Congress proceeded to Washington, pre-

sented to Congress the constitution which had been adopted, and asked the admission of the Territory into the Union as a State, and their admission to seats in the Senate and House of Representatives. Pending their application for admission, Congress passed the organic act of the Territory and admitted the member-elect to Congress to a seat in the House of Representatives as a Delegate from the Territory of New Mexico. Since the organization of New Mexico as a Territory twenty-seven legislative assemblies have convened at the capital of the Territory, and more than half of these have memorialized Congress for the passage of an act to enable the people of the Territory to form and adopt a State constitution and to be admitted into the Union.

In 1871 the legislative assembly of the Territory passed a law authorizing the assembling of a convention to frame a constitution. This convention convened at Sante Fé, framed a State constitution, and submitted it to a vote of the people, but it was rejected. The principal reason assigned for rejecting this constitution was that Congress had repeatedly refused to pass an act to enable the people of the Territory to frame a constitution and to be admitted into the Union. The impression seemed to prevail that Congress would not admit the Territory into the Union as a State unless an enabling act were passed by Congress for that purpose. At that election, while about 40,000 votes were cast for Delegate in Congress, less than 4,000 votes were cast for or against the constitution so submitted to the people. Since that time no organized effort on the part of the people of New Mexico for admission has been made, the impression seeming to prevail that they must await the action of Congress on that subject.

During the Forty-third Congress a bill to provide an enabling act for the admission of New Mexico into the Union passed both houses of Congress. It passed the House of Representatives at the first session, May 21, 1874, by a vote of yeas 160, nays 54—a majority of nearly three-fourths. At the second session of that Congress, on the 24th day of February, the same bill passed the Senate by a vote of 32 yeas and 11 nays—a majority of nearly three-fourths. Some slight amendments were adopted to the bill in the Senate, upon which there seems to have been no vote in the House, and the bill failed. It was again introduced in the Forty-fourth Congress, and passed the Senate at the first session, on the 10th day of March, 1876, by a large majority. It was not acted on by the House during that Congress. Nor has either house passed a bill to enable New Mexico to form a constitution since that time. In the debate on the New Mexico enabling act in the Senate, in 1876, the following views on the subject were expressed by the Senators indicated:

Senator Hitchcock said:

Mr. President, a bill similar in its main provisions to the one now under consideration received a large majority of the votes of both houses of Congress toward the close of the last session, and after full discussion. I presume, therefore, that this bill will not provoke any extended debate. The committee, therefore, believe that, independent of any treaty obligations to which the honorable Senator has alluded, and which were twenty-five years ago sufficiently important to induce some of the most prominent statesmen of this country to favor the admission of New Mexico then, New Mexico, from the number of her people and the extent and character of her territory, is justly entitled to become a member of this American nation.

Senator Maxey said:

In view of all these facts of the great resources of New Mexico, present and prospective; of the peaceful, law-abiding character of its citizens; of its possession of a population ample in number to conduct a State government; and of its probation under a Territorial government, I, as a member of the Committee on Territories, came

to the conclusion, after investigation, that New Mexico had good reason for her prayer to be admitted as a State of the Union; and I believe the time has come when the United States can well be freed of the burden and heavy expense of a Territorial government over that people, and will be fully justified in admitting New Mexico as a State when it presents a constitution republican in form and consistent with the Constitution of the United States.

Senator Sargent said :

Now, it is cruel to a Territory with from 90,000 to 150,000 inhabitants to keep them in this state of tutelage that we call a Territorial government. I doubt if the ingenuity of mankind ever has devised a worse system of government than what we call our system, unless it is some form of tyranny. It is a careless and wasteful system. I have a list here of a dozen States which have been admitted, which are among the most powerful and wealthy States now in the Union, which were all admitted with one-half the population which New Mexico has at the present time. It is impossible for a new State to have the population and wealth of an old one. The question is, does it furnish a fair guaranty for the future? That was the only fair question that could have been asked of Ohio when it came forward with 41,000 people; the only fair one of Illinois, when it came forward with 45,000 people [34,620].

DOES NEW MEXICO DESIRE ADMISSION?

In the year 1874 the legislative assembly of New Mexico adopted a memorial to Congress, praying for the passage of a law making provision for the immediate admission of the Territory as a State in the Union. That memorial is as follows :

Your memorialists, the council and house of representatives of the legislative assembly of the Territory of New Mexico, would most respectfully represent that the Territory of New Mexico at this time, we believe, has a population of 135,000, aside from the Pueblos or Village Indians, who, from time immemorial, have been agriculturists and among the best citizens of our Territory, and who now number a little short of 10,000, making a total population of 140,000, mostly a quiet, pastoral people, and as truly loyal to the Government under which they live as any people under the sun; that at the time of taking the last census there were in this Territory at least 10,000 people living in the many various mining districts, remote from the mass of settlements, and residing on the extreme borders of this Territory, who could not be reached by the census officers without great danger and risk, and were for that reason not included in the census; and that since said census was taken a very large immigration has come into this Territory from the States and European countries, amounting to at least 20,000, who have settled permanently in our Territory, bringing with them capital and means; that this new population is dispersed very generally throughout the Territory, but will be found mostly in the mining regions, which are fast becoming developed. We believe that, outside of the native Mexican population of the Territory, there are at least 40,000 people of American and European descent among us who are permanent residents.

Believing that they are fully equal to the requirements of such an organization, and finding also that more than one-half of all the States which have been admitted into the Union since the Government was organized have been so admitted upon a basis of population each of less than one-half of the population of New Mexico at the present time; that our increase in population in this Territory has been greater than in many of the old States, where circumstances have been favorable to increase, and our legislature of two years ago, with a proper appreciation of all these facts, having adopted the constitution with a view to a State organization, now, this legislature, being able to know and understand the wishes and views of the people on this subject, which has been so long and so fully discussed among them, speak for and in their behalf, and most respectfully urge that Congress make provision by law for the immediate admission of this Territory as a State into the United States, in such a manner as shall secure the result desired at as early a day as may be practicable, and your memorialists will ever pray.

This memorial was presented to Congress at the first session of the Forty-third Congress. The Committee on Territories of the House of Representatives of that Congress unanimously reported a bill (H. R. 2418) to enable the people of New Mexico to form a constitution and State government and for admission of the said State into the Union on an equal footing with the original States. (See House Report No.

561, first session Forty-third Congress.) That bill passed both houses during that Congress, as above stated.

Since the failure of New Mexico to secure admission during the Forty-third and Forty-fourth Congresses, there has been no authoritative expression of the people of that Territory on that subject. Since the introduction, during this session, of a bill to provide for the admission of New Mexico, there has been considerable discussion of the question of admission in the newspapers of the Territory. The Daily New Mexican, published at Santa Fé, has given special prominence to the subject, having addressed circular letters to prominent citizens and the press of the Territory on the subject, soliciting opinions. A recent editorial published in that paper is as follows:

To the New Mexican's circular, calling on prominent citizens of New Mexico to give their views regarding statehood and the advisability of the Territory's admission into the sisterhood of States, 122 replies were received. Every county in the Territory is represented therein. There were 91 in favor and 31 against the admission of the Territory. Of the 91 in favor there were 41 Republicans, 33 Democrats, and 17 of no particular party affiliations, or whose politics were not known. Of the 31 opposed there were 11 Democrats, 10 Republicans, 6 of no particular politics, and 4 who professed to be independent.

The 91 in favor contained 26 lawyers, 16 merchants, 15 stockmen, 3 bankers, 6 mine owners, 4 real-estate agents, 2 clergymen, 7 farmers, 2 surveyors, 2 Federal officials, 1 school-teacher, and 7 newspaper men, who wrote individual opinions. Amongst the 31 opposed there were 12 merchants, 11 stockmen, 2 bankers, 1 lawyer, 1 dentist, 1 Federal official, and 3 farmers.

Of the newspapers in the Territory the following are in favor of statehood: The Citizen (daily), at Albuquerque, Republican; the Chieftain (daily), Republican, at Socorro; the Sentinel (daily), at Silver City, Democratic; Headlight (weekly), Republican, at Deming; Leader, Republican (weekly), at White Oaks; the Stockman, Republican (weekly), at Springer; the N. W. New Mexican, at Chama, Republican (weekly); Rio Grande Republican, Republican (weekly), at Las Cruces. Opposed to statehood there are the Enterprise, Republican (weekly), at Silver City; the Democrat, Democratic (daily), at Albuquerque; Independent (weekly), at Lincoln, Democratic. The other papers published in the Territory, and there are a good many of them, have hardly expressed sufficient of an opinion to be classed either for or against statehood; furthermore, the opinions of one or two of these are not worth repeating or considering.

From the above and from communications and interviews with prominent Republicans and Democrats other than those published (because permission to publish could not be had), and from its knowledge of the affairs of the Territory and the people of New Mexico, the New Mexican is of the opinion that a large majority of the people of New Mexico desire statehood, and that the proposition would be carried by a large majority if submitted to the people.

The newspaper accounts sent out by certain interested parties that only politicians desired the admission of New Mexico as a State are untrue in every particular. The classification above shows this to be quite the reverse. Some of the very best citizens and largest tax-payers in the Territory desire statehood. The New Mexican believes the Territory is in every respect fitted for statehood, and that its citizens are as good to-day as those of any other State or Territory.

Wisconsin, at the time of her admission into the Union, contained a population of 180,000. No other Territory at the time of admission into the Union contained so large a population as did Wisconsin at the time of her admission, and all of such Territories, with the exception of Wisconsin, contained less population than New Mexico. The following table shows the ratio of representation and the population at date of admission of all the States admitted into the Union:

State.	Date of admission.	Representative ratio on previous census.	Population by previous census.			Population when admitted.			Population by following census.	Rate per cent. of increase during decade of admission.
			Free.	Slave.	Total.	Free.	Slave.	Total.		
Vermont.....	1791	33,000	85,425	.....	85,425	85,425	.....	85,425	154,446	80
Kentucky.....	1792	33,000	61,247	12,430	73,677	61,247	12,430	73,677	220,955	200
Tennessee.....	1796	33,000	32,274	3,417	35,691	*60,000	*7,000	*67,000	105,602	195
Ohio.....	1802	33,000	45,365	.....	45,365	45,365	.....	45,365	230,760	408
Louisiana.....	1812	35,000	41,896	34,660	76,550	41,896	34,660	76,556	152,923	100
Indiana.....	1816	35,000	24,520	.....	24,520	63,897	.....	63,897	147,178	500
Mississippi.....	1817	35,000	.....	.....	.....	.....	.....	.....	.....	.....
Alabama.....	1819	35,000	23,264	17,088	40,352	45,441	30,061	75,512	75,448	403
Illinois.....	1818	35,000	12,282	.....	12,282	34,620	.....	34,620	55,162	350
Maine.....	1820	35,000	228,705	.....	228,705	298,269	.....	298,269	399,445	33
Missouri.....	1821	40,000	56,335	10,222	66,557	56,335	10,222	66,557	140,445	111
Arkansas.....	1836	47,700	25,812	4,576	30,388	*33,000	*9,240	*52,240	97,574	221
Michigan.....	1837	47,700	31,639	.....	31,639	*65,000	.....	*65,000	212,267	570
Florida.....	1845	70,680	28,760	25,717	54,477	*34,000	*30,000	*64,000	87,445	60
Texas.....	1845	70,680	.....	.....	.....	*105,000	*38,000	*143,000	212,592	.....
Iowa.....	1846	70,680	43,112	.....	43,112	78,819	.....	78,819	192,214	345
Wisconsin.....	1848	70,680	30,945	.....	30,945	*180,000	.....	*180,000	305,391	886
California.....	1850	93,423	92,597	.....	92,597	92,597	.....	92,597	379,994	310
Minnesota.....	1858	93,423	6,077	.....	6,077	*120,000	.....	*120,000	172,023	2,730
Oregon.....	1859	93,423	13,294	.....	13,294	*50,000	.....	*50,000	52,465	294
Kansas.....	1861	127,381	107,206	.....	107,206	107,206	.....	107,206	364,399	240
West Virginia.....	1863	127,381	.....	.....	.....	.....	.....	*350,000	442,914	.....
Nevada.....	1864	127,381	6,857	.....	6,857	*40,000	.....	*40,000	42,491	520
Nebraska.....	1867	127,381	28,841	.....	28,841	*100,000	.....	*100,000	122,993	322
Colorado.....	1876	131,425	39,864	.....	39,864	*100,000	.....	*100,000	194,640	388

* Estimated.

It will be seen from the foregoing table that the populations of Maine and West Virginia were much larger than that of Wisconsin at the time of their admission, but these States were not Territories before admission, but were carved out of existing States. It will also be seen that the State of Illinois was admitted with 34,000 population, the State of Nevada with 40,000, and the States of Nebraska and Colorado with 100,000 each, and Kansas with 107,000.

Since the above report was submitted on bill H. R. 8466, the report for 1888 of Governor Koss, to the Secretary of the Interior, contains the following additional facts:

WATER STORAGE AND IRRIGATION.

Next to the settlement of our land-grant titles, the question of greatest importance to New Mexico is that of water storage and distribution for irrigation. While in some portions of the Territory, notably in the timbered mountains of the north and the southeast, successful agriculture without irrigation is not uncommon, it is not possible in very large areas, especially in the central and southern portions, though even in these there are occasional seasons when fair crops are realized in localities by the natural rain-fall.

Yet, in view of the fact that a failure of crop is not possible with a reasonably complete system of water storage and distribution, whereby the farmer can compute his crop practically to the pound, in advance, year by year, with a given extent and thoroughness of cultivation, it follows that that system of cultivation will pay all,

or more, the additional cost of irrigation, as the liability of failure of crop is thereby reduced to the minimum.

New Mexico differs materially from all the Western Territories in that, lying in the southern foot-hills of the Rocky Mountains, it has few of the continuous, rugged ranges that characterize much of the north. The country here is broken into alternate valleys, mesas, mountain peaks, and short ranges. Excellent facilities are thus afforded for the gathering and storage of water, and at elevations that permit its distribution, by the force of gravitation, to practically every tillable acre of land in the Territory.

The area of New Mexico is 79,000,000 acres. Of this it is estimated that not less than 60,000,000 acres may be classed as tillable with sufficient appliances for placing water thereon. This can be done only by a general system of storage in the higher altitudes, so disposed as to gather and hold the surplus that comes down from the mountains and runs the streams bank full at certain periods of every year, and thus reserve it for distribution during the dry periods of the later spring and earlier summer months.

The general flow of most of the water-courses of the Territory is southward—generally rising in the mountains of the north, gathering volume from lateral tributaries as they flow, usually at a descent of from 10 to 20 feet per mile. This fall, in connection with the general prevalence of natural basins and arroyas in proximity to the streams suitable for storage, affords excellent facilities for the establishment of reservoirs and the conveyance of water by high line canals therefrom, which, by necessary deflection to maintain water level and elevation, would afford irrigation for very large areas of land on the dry mesas lying below, otherwise impossible of cultivation.

It is estimated, and the estimate is deemed reasonable, that during the high-water periods of every year enough water runs down the Rio Grande alone to afford an entire summer's irrigation to every tillable quarter section of land lying in the watershed of that stream and its tributaries. Instead of that water being utilized by storage, the devastating sweep of the flood destroys every year property values sufficient to pay the cost of a system of storage for the entire water-shed, embracing probably 20,000,000 acres.

With storage basins at sufficient altitudes, the supply canals can be carried along the foot of the mountains and across the upper portions of the mesas, many miles from and above the valley proper of the streams, and thus afford irrigation to very large areas of country that are not now and never can be otherwise cultivated—lands, too, which are known to possess all the constituents of highly productive soil.

It is not necessary that the people of the country at large should be taxed for the establishment and maintenance of this project. We have within ourselves ample means for its successful institution, and do not ask an appropriation from the public treasury therefor. A general act of Congress provides that upon the admission of a Territory into the Union as a State, 500,000 acres of the public lands in that Territory at once accrues as the property of the State, to be devoted to the purposes of internal improvement. The bill now pending in Congress for the admission of New Mexico provides that 250,000 acres of that donation to New Mexico shall be devoted to the establishment of reservoirs for irrigation purposes. While it is hoped that New Mexico may be admitted to statehood during the coming year, when this donation will at once accrue, yet the uncertainty of that consummation, and the urgent need of the early establishment of an effective system of irrigation, may be deemed sufficient warrant for asking that the donation of this resource to that end be not delayed awaiting statehood; that the lands may be selected at once and set aside as the property of the Territory for this beneficent purpose; that their custody and disposition be so effectually guarded by the act of cession that their diversion to other purposes be rendered impossible, chief among which conditions that their sale or disposal, in any manner whatever, be absolutely prohibited for at least ten years.

With this basis of credit the Territory will be able to go into the market and borrow a sufficient sum of money to enable it, upon the economical plan herein outlined, to establish a comprehensive and effective system of water storage, while the increased value of the land so donated, resulting from that system, would be ample for the payment of the loan at maturity, and thus a reasonably comprehensive and effective system of storage and irrigation would be established without cost to either the General Government or the Territory.

Even a few years of delay awaiting admission can not result but in serious detriment to the Territory, not only in the postponement, to a large degree, of the measure of settlement, investment, and development which the early institution of the incentives to these conditions, in the direction indicated, would create, but in the increasing friction and danger of turmoil which the present insufficiency of our water-supply, even when most needed, is already creating and certain to intensify.

I have thus discussed this matter of water storage and irrigation at a length unusual in a report of this character, as it is one of all-absorbing import, not only to

New Mexico but to the entire Rocky Mountain region. This Territory contains practically inexhaustible stores of all the precious and useful metals, from gold to iron, and especially extensive deposits of coal. These, with a productive soil fully up to the average of the States, with great forests of pine, and every where the finest qualities of building stones, in inexhaustible quantity, with extensive fields of salt, in marsh and in dry block, extensive beds of gypsum, and deposits of the finest qualities of fire-clay, with an enormous product of cattle and of wool, and, over all, incomparable climate, New Mexico may be made the richest mining, agricultural, and manufacturing country of the same extent in the world.

The only thing needed to develop and establish that condition is the utilization of our water supply. For that we ask no subsidy from Congress or other source. We ask simply the appropriation now, under sufficient guards for its proper administration, of that which under an act of Congress belongs to us and is to fall to us upon admission to the Union—our stipulated quota of the public lands.

POPULATION.

From information I have been able to obtain upon careful inquiry in different quarters of the Territory, especially in the public-land sections, I am certain that the increase during the past year has been from 10,000 to 12,000. The bureau of immigration has, during the past year, received many thousands of letters of inquiry from States eastward, mainly from the Mississippi Valley States, desiring information of New Mexico as to business chances, agricultural conditions, climate, opportunities for profitable investment, etc., which would indicate a growing interest in the Territory on the part of home-seekers, and the probability of a very considerable immigration in the near future. I deem it a safe estimate that the population of New Mexico is now about 175,000, exceeding by several thousand the number of people entitling it to admission to statehood.

TAXABLE PROPERTY.

The rate of taxation prescribed by the law for Territorial revenue is one-half of 1 per cent. for ordinary county revenue, one-fourth of 1 per cent. for county revenue, and for school purposes three mills on the dollar.

The assessments for 1888 show an aggregate valuation of taxable property of \$43,151,920. Of this amount \$15,370,960 is on live-stock, \$7,466,869 on lands, and \$6,558,350 on houses and improvements.

These amounts, as is also all taxation, are exclusive of \$300 exemption to each property owner, of poll-taxes, and of a specified extent of tree culture.

SETTLEMENT OF LANDS.

The records of the land offices show that 384,000 acres have been entered during the year. A small portion of this was for mining purposes, but nearly all for actual settlement and cultivation. That amount was about equally divided between the two land offices of the Territory—Santa Fé and Las Cruces—and represents the lands entered for settlement and cultivation in the north and the south, respectively. These figures do not, however, represent the area of lands purchased of private owners in the vicinity of the towns and previously settled localities, which would probably aggregate as much more. While this is a trifling increase compared to the vast extent of country open to settlement, it is yet considerable in view of the complicated condition of titles to some of the most inviting lands in the Territory, and serves to illustrate what the progress of settlement and development will be upon the establishment by Congress of a tribunal for the settlement of those titles.

COMMERCE AND THE PROGRESS OF RAILROAD ENTERPRISES.

The only railway construction during the past year is the Denver and Fort Worth, about 80 miles across the northeast corner of the Territory. The construction of this line has been the means of establishing three thriving towns in eastern Colfax County—Folsom, Clayton, and Texline—and the location of quite a number of settlers; these towns now being made points of shipment and centers of considerable trade.

Several other lines have been projected into the Territory from the north and east, northeast, and southeast, some of them now under contract for construction, and others reasonably certain of being placed under contract within the coming year. The aggregate mileage of these several lines within the Territory will be not less than 2,000 miles.

The addition of the 80 miles of the Fort Worth and Denver Railroad makes the aggregate mileage of railway in operation in the Territory 1,130, 182 of which is narrow gauge.

The business of these roads, both of traffic and travel, for the past fiscal year has been much improved over that of 1887, especially that of the Atchison, Topeka and Santa Fé.

AGRICULTURAL DEVELOPMENT.

There has been in all parts of the Territory marked progress in the development of our agricultural industries, illustrated by the late local and Territorial fairs, in grains, vegetables, fruits, and garden products, and by the corresponding cheapness and abundance in which they are found on sale in the markets. Large areas of land have been brought under cultivation for the first time this year, and the yield has been good. These productions include all varieties peculiar to the temperate zone, and some, such as figs, almonds, pomegranates, English walnuts, etc., that are classed as semi-tropical. The great range of latitude of New Mexico, from the thirty-second to the thirty-seventh parallel, affords a range of climate unknown in any Eastern State and a corresponding variety of product, while the range of altitude of tillable land, from 3,000 to 8,000 feet above sea-level, adapts the country alike to the products of the extreme North and the more northerly States of the South.

The development in agriculture has more than kept pace with the increase in population, and New Mexico is this year well started on the road towards self-supply in all the staples of consumption. In fruits, especially, the advance has been very marked. Orchards and vineyards that were planted a few years ago by the earlier colonists have this year come to bearing, and the volume of product has been something remarkable and exceeded only by the quality.

The Doña Ana County fruit fair, held in September at Las Cruces, in the quality of the fruits displayed of all kinds was a surprising exhibit and a revelation of the wonderful capacity of the country, and of the Rio Grande Valley especially, for the production of every description of fruits, more especially of grapes. The Black Hamburg, the Muscat, the Muscatelle, the Flaming Tokay, and many other equally valuable varieties, including excellent wine and raisin grapes, are there produced in astonishing size and profusion and of rare excellence. It is apparent from that exhibit that the manufacture of wines and raisins and the preparation of canned fruits are destined to become staple and profitable industries of that section.

The Santa Fé fruit exhibit, during the same month, was a gratifying display of the capacities of that region for the production of fruits of all kinds adapted to the latitude and the altitude—between 35° and 36° north and 7,000 feet.

At Las Vegas, last fall, was displayed an exhibit of grains, fruits, and vegetables especially adapted to the northern portion of the Territory, which indicated a marvelous productive capacity in a region that had been accounted almost a desert. The grains comprised wheat, oats, barley, and corn gathered promiscuously from the fields, many specimens of the small grains standing 6 to 8 feet high and the heads surpassing the average of the west, even in the weight of grain, much of it grown without irrigation.

The Territorial fair at Albuquerque was an equal surprise to those unacquainted with the capacities of the country. In grains, vegetables, fruits, and textiles the display was of surpassing interest in its demonstration of the capacity of the Territory for the development of, practically, every product of the soil that contributes to the satisfaction of human needs and human comforts. Here were exhibited deliciously-flavored apples that weighed from 20 to 23 ounces; and peaches, pears, quinces, apricots, plums—in fact, every variety of fruit of corresponding size and quality, gathered from every quarter of the Territory; wheat weighing 70 pounds to the bushel, and yielding 40 bushels to the acre; and oats, barley, corn, all the usual grains, fully up and even superior to the yields of the Middle States, as also in variety and quality; potatoes weighing 2 to 4 pounds, cabbages 40 to 50 pounds, and every variety of vegetable product of corresponding yield and weight.

During the past few years especial effort has been made to the introduction of improved agricultural machinery and modern methods of agriculture, and the result of that effort has been perceptible in these displays. Deep plowing and the introduction of intelligent, systematic pursuit of the science of agriculture have developed the fact that the soils of New Mexico, though at first sight forbidding and apparently a desert, possess in a remarkable degree all the elements of fertility, and that the great bulk of its lands, with intelligent cultivation, is susceptible of a high degree of development.

Until very recently the impression has prevailed that the successful production of American corn was impossible on account of the altitude, but the past year's experience has effectually dispelled that unpleasant delusion. As large and perfect American corn, the product of New Mexican corn-fields, was displayed at the late fairs as can be produced in any of the Mississippi States, and of quite equal yield, evidenc-

ing that that cereal is destined to hold its rank here as one of the great Western staples.

A gratifying indication of the increasing interest in, and growth of, our agricultural industries is the incorporation of irrigating companies. Nineteen of these associations have been chartered during the past year, and construction commenced on several of the number. Conspicuous among the latter is the Pecos Irrigation and Improvement Company, in Lincoln County, which has projected two canals, one 25 and the other 40 miles in length, and sufficient to irrigate 150,000 acres of land, now under contract. Other similar enterprises are also under way there, aggregating, in all, 140 miles of ditches, and intended to water 250,000 acres of land. Lincoln County is more especially an agricultural county, and is rapidly filling up with farmers. The facilities for irrigation are generally good, and what was not many years ago known only as the Llano Estacado, or stalked plains—waterless and treeless—comprising the eastern half of the county, will, before the lapse of many years, become one of the most populous and prosperous agricultural sections of the southwest.

An extensive ditching enterprise is also on foot in the northwestern counties, another very promising agricultural section.

In Grant County an experiment at storage and distribution has proven an abundant success, so much so that a project for a considerable extension of the system has become a certainty.

In western Bernalillo County an enterprise is now under way for the establishment of a reservoir to be supplied from the water-shed of the surrounding country and independent of running streams. This experiment will be watched with much interest, as, if successful, it will solve a troublesome problem and demonstrate the possibility of water storage and irrigation under conditions that have heretofore been considered impossible.

STOCK RAISING.

The cattle industry has not been as prosperous during the past year as the reports of previous years would naturally need to expect. Though in better general condition than in the more northerly of the Western Territories, the losses not having been so great from the inclemencies of the seasons, it has been of necessity affected by the declension in prices that has been general in the West. To that degree has New Mexico cattle stock been affected by that condition that the appraisement for taxation was reduced, at the request of cattle owners, from \$12 to \$10 per head for this year's taxation. So that, though the assessment rolls for 1888 show an increase of 135,000 head over the rolls of 1887, the assessments show a diminution of \$1,200,000.

The assessment rolls of the sheep stock of the Territory show 1,750,000 for 1887, and 1,500,000 for 1888, a declension of 250,000, with a corresponding reduction on the tax rolls, they being uniformly assessed for taxation at \$1 a head for each year.

Cattle and sheep comprise particularly the live-stock interest of the Territory, 2,700,000 in round numbers, the balance consisting of 50,000 horses and about 70,000 other animals.

Though in some portions of the Territory the grass and water supply has been scant the country generally has been fairly supplied with rains, and the grazing correspondingly fair. While in general cattle will go into winter in condition to go through without serious loss, in some localities the condition of the cattle is such that the losses threaten to be severe.

The quality of cattle as well, generally, of all live stock, has been materially improved. The cattle owners of the Territory intelligently and fully appreciate the necessity and the value of improving the grades of their stock. A large number of thorough-bred breeding animals are brought into the Territory every year, and the result is that New Mexico cattle stock now stands practically in the lead of all the Territories in the quality of that class of live stock.

No disease has existed among the live stock of the Territory during the year. So far as prevalent stock diseases are concerned, the live stock of New Mexico is in an exceptionally healthy condition.

The rigid quarantine regulations established by the legislature two years ago, though working perhaps unnecessary hardship in individual cases, and somewhat to the detriment of immigration, is in a measure vindicated by entire freedom from all criminal diseases.

It is gratifying to note that a number of the leading cattle owners of the Territory have resorted to the cultivation of grasses, generally alfalfa, for winter feed, and as a resource against dry seasons. When this practice shall come to general prevalence, as it will, the cattle industry will have been thoroughly revolutionized and placed upon a safe business basis. Those who have tried it are positive in their assurances that financially the experiment has been a success, both in the avoidance of losses and in the additional weight of beef secured, while to the beef-consuming public the gain will be quite as great in the quality and added healthfulness of their meat food.

In another respect the gain will also be very great to the people of the Territory. The superior quality of alfalfa-fed beef is so apparent that instead of continuing the present absurd practice of shipping cattle on foot to the East, to be slaughtered and sent back to us in tin cans, New Mexico beef will be sold fresh on the butcher's block, and we will know that we are eating sound, wholesome, home-grown beef, which the mysteries of the canning establishments forbid that we should know now.

MINING.

During the past twelve months the mining industries of the Territory have received positively more well-directed attention than during any similar period in the history of New Mexico. It can not be said that the output is larger than at certain previous times, but the ores and bullion that have been shipped have, as a general thing, been obtained in the course of systematic mining and not by the aid of any phenomenal discoveries of rich surface pockets. No single instance is recalled of a bonanza such as were the Comstock, Lady Franklin, and Lake Valley ore bodies at some time in their history. While such unusual and enormous pockets are very acceptable and are always sought, it is a matter for special congratulation that in their absence mining interests do not perish nor even suffer, but on the contrary ore production, as a result of good judgment and the most approved methods in mining, has been continuous, and on the whole more satisfactory than in 1886 or 1887.

The gold product has been greater during 1888 than during any previous year, and White Oaks, Pinos Altos, Carlisle, Gold Hill, and Hillsborough have especially increased their output. Pinos Altos has far surpassed the most sanguine expectations of a year ago, several hundred thousand dollars of capital having been invested there within the year. Hillsborough has developed several excellent gold producers, and ore is being constantly shipped from one of them, while a mill on the property treats the low grades. The Carlisle is held in high esteem by its London owners. The Lake Valley mines have again taken their rank among the dividend payers.

In silver production Kingston reports ore at 400 feet in depth from surface. A splendid showing of ore has been made in the Hermosa district. Cook's Peak district has attracted a great deal of attention, and the graphic vein has been explored to a depth of 200 feet, showing a large amount of high-grade galena silver ore. Important discoveries have also been made on the Tierra Blanca.

Consequent upon the advance in the price of copper, work has been resumed upon a number of mines (including the Santa Rita), which were idle for a long time. The San Pedro copper mine has also been continuously worked.

Many properties not here mentioned have continued their accustomed output.

Milling and smelting plants have been enlarged or newly built in the following places: Carlisle, Gold Hill, Cooney, Silver City, Georgetown, Pinos Altos, Lake Valley, Hillsborough, Chloride, Socorro, Golden, and White Oaks, and a vast amount of mining machinery has been put in operation.

It is also of special note that during the year no manifest swindle upon the public has been currently reported.

What is known as the Cerrillos mining district, a region equal to about 50 miles square, and covering southern Santa Fé and eastern Bernalillo Counties, is probably the most remarkable mineral district in the world in the range as well as the volume of its mineral deposits. The principal feature of this district is what is known as the Big Copper Mine, which has been successfully worked for a great many years till it was closed down by litigation some five years ago. That litigation, it is understood, has been practically settled, and the mine and smelters are again in operation, and arrangements in progress for enlargement corresponding with the capacity of the mine.

Throughout the district are also lead, silver, and gold leads and gold placers, many of each class being worked with profitable output. There are also here large iron deposits, but in the absence of a market it is used only for fluxing.

Backing and re-enforcing this really wonderful metallic deposit is a still more important area of coal measures, described in another chapter of this report.

An indication that the great mineral wealth of this district was known to the early Spanish colonists is the discovery, within the last few years, of fully developed silver mines, containing many hundreds of feet of drifts, tunnels, and shafts, but the openings of which had been filled up and all surface trace of them obliterated at the time of the Pueblo Indian insurrection, two hundred years ago, when the Spanish residents were all slaughtered or driven out of the country and permitted to return several years later only on condition that the mines should never again be worked. Several of these have been rediscovered, and some of them are being redeveloped with profit, while the development of others is obstructed by the great expense of clearing them of water, as also of perfecting title, being on disputed Spanish grants.

An important gold deposit is also being operated at Elizabethtown, in the mount-

ains of Colfax County, with a fair output; another valuable lead in central Santa Fé County is developing into a producing mine, while in the Jicarilla Mountains in Lincoln County, in the Organ Mountains in Doña Ana County, and other portions of the Territory, gold finds have been somewhat numerous and promise to become valuable.

Iron ore has lately been discovered in large quantities in the Guadalupe and Sacramento Mountains, in Lincoln County. It is found in considerable quantities in different portions of the Territory, but this later discovery is known to be very extensive. It is said to be hematite and singularly free from silica and other impurities and includes a mountain of very rich ore, similar to the Iron Mountain of Missouri. The region in which this discovery is made has never till lately been explored, but the influx of settlers during the past year has developed the existence there of an exceptionally desirable country, not alone in agricultural capacities, but also in its stores of timber and mineral.

Altogether there has never, in the history of the Territory, been so gratifying an outlook for the mining industry. Capitalizing prospect holes and calling them mines has practically ceased, and mining has assumed the legitimate basis of a staple industry, and is being prosecuted as a strictly industrial and not a speculative vocation.

FORESTS AND THE PRODUCTION OF LUMBER.

Though there are extensive forests in this Territory, there has, with the exception of one or two localities, been but little systematic or large production of lumber in any.

On the Tierra Amarilla grant, in Rio Arriba County, there has been a large product. The forests on that grant are very extensive.

There are also very considerable forests in the Nacimiento Mountains, in northern Bernalillo County, in the mountains of western Valencia and Socorro, in the Jicarilla, Sacramento, and Guadalupe mountains of Lincoln County, in the Black Range of central Socorro and Grant, in central and northern Santa Fé, and in the main range of the Rocky Mountains of northern central New Mexico.

These localities are all well timbered, and with large trees. They will comprise fully 2,000 square miles of good, average timber—all fine. These districts are generally distant from railroads and settlements, and their lumber capacity is therefore but little developed. With the extension of railroad facilities to them, which will come with the increasing demand of settlement for lumber, they will be found a valuable resource in the building and development of the country.

EDUCATION.

The educational interest of the Territory has not been neglected. Substantial progress has been made. A compulsory school law was passed at the last session of the legislature, which was a step in the right direction, and whatever effect it has had has been good.

On the whole, the school attendance has been increased—larger amounts of money have been expended in the maintenance of public schools—the number of these schools has increased, as has also the number of denominational and parochial schools and the attendance thereon. The schools of the Territory generally are in perceptibly better condition, and an increased and increasing public interest in the education of the youth is very manifest.

The third annual report for Santa Fé County is as follows:

OFFICE OF SUPERINTENDENT OF
PUBLIC INSTRUCTION FOR SANTA FÉ COUNTY,
Santa Fé, N. Mex., January 1, 1889.

To the honorable auditor of the Territory of New Mexico :

SIR: In compliance with the requirements of law, I have the honor herewith to transmit to you my third and last annual report of this county. The tabulated statements herewith transmitted will furnish in detail the usual information required by law in regard to the operations of the public school year ending December 31, 1888.

The footings will show the following general facts:

[Location, Santa Fé.]

Name.	Under auspices of—	Department.	Teachers.			Value of property.	Enrolled pupils.			
			Months.	Male.	Female.		Total.	Male.	Female.	Total.
St. Michael's College.	Christian Brothers	Higher commercial primary.	10	12	....	12	\$60,000	160	....	160
University of New Mexico.	Board of Trustees.	Academic grammar.	10	4	3	7	20,000	42	39	81
Academy of our Lady of Light.	Sisters of Loretto.	Higher intermediate primary.	10	....	10	10	35,000	....	65	65
Santa Fé Presbyterian Academy.	Home Mission Board.	Intermediate primary.	9	....	2	2	5,000	22	31	53
St. Vincent's Asylum.	Sisters of Charity.	....do	10	....	6	6	60,000	....	48	48
Deaf and Dumb School.	Territory of New Mexico.	....do	10	1	1	2	.....	6	3	9
St. Catharine's Indian School.	Government of United States.	....do	10	4	5	9	25,000	52	44	96
Kindergarten School.	Home Mission Board.	Practical arithmetic and drawing.	9	....	1	1	.....	6	8	14
Total .....	.....	.....	78	21	28	49	150,000	276	241	517

In my second annual report I said that but few of the schools were supplied with maps, blackboards, and books enough to meet the requirements of students—almost wholly without apparatus. Now I am proud to say that my term of superintendent expired but with the satisfaction that my schools are all well supplied with all the apparatus needed for the advancement of the pupils.

Attendance.—The number of children in actual attendance on the schools of this county shows an increase, I suppose, much better than two years ago in comparison with the number enrolled, being 1,458. This shows that our compulsory act of education will not figure among the dead-letter laws.

The legislators should know the necessity of the hour—educate the masses of the people.

Languages.—I will pen a few lines in regard to this subject, which I consider of great importance, and one which for some time has been the topic of the day. In my first annual report I advised all teachers in my county to teach both languages, English and Spanish, and now I would insist on the same, because when a child has learned the grammar of his own language it is then easier for him to learn any other language; but I admit that English is of the utmost necessity in this country, because it is the business language of the country; but it is a fact also that when a Mexican boy knows his Spanish grammar it becomes more easy for him to learn English or any other language. Notwithstanding, I would require all teachers in the Territory to make a special study of the English language for the children of their schools.

Private institutions.—It is but right and just to devote a few lines to the private institutions of my county, because they rank at the head of all the institutions in this Territory. It is a grand and sublime thing to go into one of these institutions, of such colossal form and then to find in the interior all the apparatus required for a complete education. The people of our Territory must patronize all home institutions, but especially the institutions of education, which in our Territory are so brilliant and deserving of our help. Let us join hand in hand, arm in arm, and present ourselves to the doors of our schools and render there our tribute for the benefit of that grand and noble work. If we pause only for a moment and think over the necessity of our country and the "need of the hour," we shall find that education is what we need more, but there will be no education if there are no good citizens, and vice versa.

First of all take St. Michael's College, directed by the Christian Brothers, the oldest institution in this Territory, an institution which has given so good a proof to all through our Territory that if you cast a glance on the broad Territory you will see young men that are always ready and eager to prove with their deeds that this institution has not neglected in the least the complying of its noble work. The Christian Brothers, as a good many know, devote all their life-time in teaching, and nothing else. It is a society or community of members who make a special study of teaching mankind. Rev. Brother Botulph has been for a long time (about twenty-three years) the wise and worthy director of this institution, and all improvements in that college have been made under his administration.

OKLAHOMA LIBRARY

13353

In order to do him justice I dare to say that every increase and improvement is due to this noble man. Next to this comes the University of New Mexico, an institution which in its organization is very young, but in its merits it must be considered as good as any. Professor Hood, the acting president of the university, does not omit any pains to make this institution a worthy one for New Mexico. He is a man of such intellectual ability, that in the course of a few years I should not wonder to see the university ranging at the head of all the institutions and second to none in the Territory. Our institutions are turning out good sons, who will be good parents, good members of society, and better and more patriotic citizens. Let us avail the opportunity of educating our children at once.

Private institutions of Santa Fé County.

Location, etc.		Months taught.	Teachers.			Enrolled scholars.			Average daily attendance.			School population.			Common schools.			School property.		
District.	Precinct.		Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	School-houses.	Value.	
1	1	....	1	..	1	19	16	35	16	11	27	24	21	45	1	....	1	....	....
2	2	4	1	1	2	63	49	112	55	41	96	66	53	119	1	1	2	....	....
3	3	10	4	2	6	168	116	284	149	110	259	568	320	888	3	2	5	1	\$8,000	
4	4	10	2	3	5	166	131	297	146	122	268	415	246	661	3	2	5	1	10,000	
5	5	5	2	....	2	43	29	72	38	23	61	86	63	149	1	1	2	....	....
6	6	5	1	....	1	25	13	38	24	10	34	86	55	141	1	1	2	1	200
7	7	6	....	1	1	38	27	65	33	22	55	64	35	99	1	....	1	1	2,000
8	8	4	2	....	2	69	33	102	65	30	95	88	55	143	1	1	2	....	....
9	9	7	2	....	2	71	39	110	64	37	101	99	76	175	1	....	1	....	....
11	11	3	1	....	1	28	24	52	23	21	44	33	25	58	1	1	2	1	300
12	12	4	1	1	2	36	24	60	20	23	52	46	39	85	1	1	2	....	....
14	8	3	1	....	1	18	13	31	15	10	25	18	15	33	1	....	1	....	....
15	1	6	....	1	1	69	53	122	69	48	117	83	45	128	1	1	2	....	....
16	1	3	1	....	1	26	17	43	23	15	38	31	23	54	1	....	1	....	....
17	11	3	....	1	1	21	14	35	19	13	32	25	21	46	1	....	1	1	200
			73	19	10	29	860	598	1,458	768	536	1,304	1,732	1,092	2,824	19	11	30	6	20,700

H. L. ORTIZ,
Superintendent of Public Instruction.

The governor's report for 1888 contains the following additional information:

SCHOOL LANDS.

As the school lands set apart by act of Congress for the benefit of the Territory do not accrue until admission into the Union, the people of New Mexico now receive no benefit therefrom.

Located as these lands are in every township in the Territory, they are constantly appreciating in value by the increase of surrounding settlements, and many especially eligible locations of these lands have now reached very considerable values. If they could be utilized now they could be made to contribute materially to the progress of popular education. Especially in view of the very great need in this Territory of all the appliances that can be directed to the promotion of public education, there would be manifest propriety and usefulness in placing these lands at the disposal of the Territorial government, to be devoted, under such regulations as Congress might deem prudent and necessary, to the uses for which they are designed.

LABOR SUPPLY.

In a community so largely constituted of people of limited means the labor supply is naturally ample. Yet every description of skilled labor commands the highest wages, and even unskilled labor is generally quite as well paid as elsewhere; better than in many portions of the East and South.

The increase in mining and business enterprises and commercial ventures, and the consequent demand for labor, fairly keeps pace with the supply through immigration. The direction of so large a proportion of the immigration to agricultural pur-

suits constitutes a balancing element in the regulation of the labor supply, so that, as a rule, all applications find a reasonably ready demand.

CONDITION OF THE INDIANS IN THE TERRITORY.

The condition of the Indian population has not materially changed since my last report. There have been no outbreaks, no turmoil among them, and nothing that could be construed into race collisions between them and the white residents. There has been, on one or two occasions, some friction between individual members of the Navajo tribes and whites, but nothing of a serious public character.

The persistent efforts to the education of the Navajo and other Indian children are beginning to show good results. All the Indian schools are well attended, and the children are being satisfactorily inducted into the ways of civilized life and in the establishment of habits and education that can not but have a beneficial effect upon their surroundings as they return to their homes, young men and women to dominate, by numbers and educated habits of life, their several localities. The establishment of these schools in accessible relation to the relatives of the pupils was a wise and thoughtful measure.

PUBLIC BUILDINGS.

There is but little to report under this head in addition to the report of last year.

The Territory has but two public buildings—the capitol, or state-house, and a penitentiary, authorized by the legislative assembly of 1884; the first at a cost of \$200,000 and the second at \$150,000. The capitol building is a commodious, well-planned, well-appointed, and elegant structure, creditable alike to the Territory and to the designer and erected at a cost within the appropriation.

Five of the counties have commodious and tasteful court-houses and jails—those of Bernalillo County, erected at a cost of \$97,000; San Miguel, \$126,000; Socorro, \$43,000; Santa Fé, \$50,000; Grant, \$36,000; Doña Ana, \$40,000, and Taos, \$30,000.

The Federal building for the accommodation of United States courts, surveyor-general's offices, land offices, etc., for which an appropriation was made by Congress two years ago, is now very near completion. It is a beautiful, substantial structure, and its appearance in every respect indicates that the money for its erection has been carefully and honestly expended.

UNDEVELOPED RESOURCES.

New Mexico possesses a very wide range of resources that are as yet not at all or only partially developed. Principal among these are our coals. The character of these coals is anthracite, lignite, and bituminous. The anthracite is so far found in but one locality—the southern portion of Santa Fé County—but the deposit is large, and is found in juxtaposition with both lignite and bituminous coals. The coal veins of that district are from 3 to 6 feet in thickness, and have been sufficiently exploited to establish an extent of at least 500,000 and probably 1,000,000 acres. A large proportion of these coals being on disputed Spanish grants, there has been comparatively little organized or systematic development, though, as near as can be estimated, the output for the year has been in the neighborhood of 100,000 tons, a large proportion of it converted into coke for smelting and reduction purposes in the district.

The Gallup mines, in the western part of Bernalillo County, on the line of the Atlantic and Pacific Railroad, are the most extensive in the Territory. These mines are supposed, from fairly well-established data, to be located on the southern point of a coal deposit about 10 miles wide from east to west, and widening northward into Colorado, a distance of some 200 miles. The present working mines at Gallup are four—the Gallup Coal Company, the Aztec, the Black Diamond, and the Crown Point. The output for the year was 300,000 tons. There are here five well-defined veins, which aggregate 28 feet of solid coal, lignite, of a very fine quality for all ordinary uses. Extent of development (tunneling), 8,000 feet; number of men employed, 400; value of output at mine, \$600,000.

The Monero and Amargo mines, in Rio Arriba County, on the Colorado border and near the Denver and Rio Grande Railroad, also produce an excellent quality of coals, being in general character, as to quality and thickness of veins, very similar to the other soft coals of the Territory. Extent so far unknown, but probably belong to the coal-measures running northward from Gallup.

Very excellent bituminous coal is also found in Lincoln County, in the vicinity of White Oaks. The extent of the deposit is known to be considerable, though development has been small, as the demand is limited to local consumption, there being no

transportation to other or distant markets. The thickness of the vein now being worked averages 4 feet; extent of development, 300 feet of tunnel; output for the year, 3,000 tons.

The output of the Blossburg mines, near the Colorado border, and operated by the Raton Coal and Coke Company, was 156,000 tons, and the output of the San Pedro Coal and Coke Company, operating at Carthage, Socorro County, 59,000 tons of coal, the latter rendered into 14,000 tons of coke.

Coal has been found in other portions of the Territory, but being isolated from railroad transportation, and no local demand on account of sparse population, little or no development has been made.

From this established data it will be seen that the coal measures of the Territory are of very great extent, aggregating fully 4,000 square miles of at least 10-foot veins of coal. This vast store of latent steam-power, in connection with a corresponding deposit of all the precious and useful metals, usually found in immediate or convenient proximity to this coal, indicates of itself the establishment there, sooner or later, of very important manufacturing industries, and when the development of these resources shall be supplemented by a corresponding agricultural product resulting from the establishment of an effective system of irrigation, whereby these now barren mesas will have been converted into fruitful farms, gardens, vineyards, and stock ranches, the measure of the productive power and possible prosperity of this region will be something startling to contemplate, and beyond computation.

In other respects than in coal and metals the native products of the soil here are something remarkable. Natural deposits of salt are found in several parts of the Territory. Good glass sand is found in southern Santa Fé County. Cañaique, or tanning plant, which produces superior tannic acid, grows spontaneously and in great profusion in all parts of the Territory, especially in the south, and several varieties of cacti, which grow spontaneously everywhere, produce excellent fiber for making cordage and the finest varieties of paper, while all our mountains abound in every variety of the finest building stones and good timber. Immense deposits of fine clay, of quality suitable to the manufacture of the finest pottery and queensware, are found in several places, especially in the Gallup coal mines in contact with coal.

Added to this extraordinary range and quality of undeveloped natural resources, New Mexico presents to the home-seeker a climate unsurpassed and rarely equaled in genial equability. Located on the southern rim of the temperate zone, and facing the south, the great altitude tempers the heats of the southern latitude, and renders the climate at once dry, exhilarating, buoyant, and healthful. The days are nowhere too warm for the comfortable pursuit of all out-door vocations, and the nights are always and everywhere, in the warmest season, cool and invigorating, affording the system complete recuperation from the fatigue and turmoil of the day.

RECLAMATION OF ARID LANDS BY IRRIGATION.

The Committee on Territories requested Major Powell, of the U. S. Geological Survey, to furnish the committee his views on the subject of reclaiming the arid lands of New Mexico and other Territories. His statement is as follows:

STATEMENT OF MAJ. J. W. POWELL.

Maj. J. W. Powell, director of the U. S. Geological Survey, addressed the committee. He said:

Mr. Chairman and gentlemen of the committee, I have spread before you two maps. The first is a map of the United States, on which I have outlined the area where agriculture is dependent upon artificial irrigation. You will see here [pointing] a red line drawn across the map, in a general way, about longitude 100, and you will see on the western side of the map certain other lines. All the district west of these last has sufficient water for agricultural purposes from the rains which fall in that country; and between them and the red line we have the arid country where irrigation is necessary. That comprises about two-fifths of the area of the United States—about 1,300,000 square miles.

Mr. SYMES. With the exception of Alaska.

Major POWELL. With the exception of Alaska.

The CHAIRMAN. About how wide is that coast district on the left? It varies here [pointing] from 200 or 300 miles, at the north, to about 50 miles in the vicinity of San Francisco.

Major POWELL. Now, it must be understood that within this region no agriculture is possible without artificial irrigation. There are a few meadows and valleys in the mountains where they can get a little grass, and sometimes a few potatoes, and

so on; but all of the real substantial agriculture throughout that region is dependent upon irrigation. There is another thing to be understood in connection with that country which is of very great importance in considering the measures that Congress must consider for the disposal and utilization of the public lands; that is, within this same arid region all the timber lies on the mountains, beginning at an altitude of from 7,000 to 10,000 feet above the level of the sea, and extending up to the "timber line" at from 10,000 to 12,000 feet; that is, in the north all the valuable timber lies from 6,500 to 10,000 feet above the level of the sea, and in the south it lies at an altitude of from 7,500 to about 12,500 feet.

Mr. SYMES. Is timber found as high as 12,500 feet?

Major POWELL. It is on some of the mountains in Arizona; that is, in the extreme south. The timber land is not agricultural land. Men can not settle to farm where timber grows, because on the mountains the soil is unfavorable to a large extent; but the chief reason lies in the fact that the climate is unsuitable for agriculture; that is, where timber grows there is frost every month in the year. Therefore, any policy which looks to the disposal of these lands to private owners must take into consideration that the Government must dispose of them to people who desire them for timber purposes and not for agricultural purposes. Men can not make homes on the land where timber grows in that region of country; so it is not possible for farmers to homestead the timber lands.

The agricultural lands lie below. The conditions under which they can be utilized are that the water must be brought to them for irrigation purposes. In considering the matter it is well to note the peculiar climatic conditions under which rain is precipitated in that country. The water mainly falls upon the mountains and high plateaus. In all of this region of country [pointing to the map] there is not more than 3 inches of rain-fall while in many other regions [pointing] it rises to 10 and 15 inches, and in the low grounds, where agriculture is to be carried on, it comes up in a few places to 16, 17, or even 18 inches, but not more than that. On an average, we may say that the rain-fall on the agricultural lands is from 10 to 15 inches. If all of that rain were to fall during the season of growing crops, and were evenly distributed through that season, it would be sufficient for agriculture; but in the main the water is distributed through all seasons, and more falls in the winter than during the summer months, and during the season of growing crops there will often be an extensive region where no rain falls.

With these preliminary statements—but let me go a little further. There is a good deal of rain in the country, but it falls chiefly on the high mountains. Where high mountains exist you can have from 35 to 75 inches of rain-fall annually. If all the rain in that country was distributed evenly all over the whole country it would make it a good agricultural country; but the fact is the rain is scattered over the non-agricultural lands in the mountains and in the high plateaus, so the water necessary for the redemption of the lowlands falls on the highlands. The rain which falls on the mountains gathers into streams and rushes out into the plains and low valleys, so that all the streams are born in the mountains. There are no perennial streams born or heading in the low ground. This must be clearly understood. Here [pointing to map] is a series of mountain streams heading above the plains and in the mountains and foot-hills, which run together into larger streams, and run across the plains and arid valleys. Now, the streams which arise in the arid valley lands are only storm-streams; that is, they flow only during and immediately after storms. None of these low-land streams are perennial, and the only perennial streams in the low lands are those derived from water from the high lands which runs across them.

Again, it must be understood that along the immediate valleys of the lowlands the storm-waters and the winds are forever drifting the dust and sand into the rivers themselves and into their immediate valleys, so it causes a very peculiar condition of things. The mountain streams, having great declivity and running through a region of country of great humidity, are narrow, deep, rapidly-flowing streams of pure, clear, cool water, but they are transformed by this condition of the plains into streams of great width instead of great depth, so that the streams of the valley and of the plains are streams of great width. You may find a stream 500 yards wide and having a depth of 2 or 3 or of 10 or 15 inches only. That is, the water, as soon as it strikes the plain, is spread out in a broad, shallow stream and flows down through the sand; and by the storm-water which is coming in and by the winds it is continually being filled with sand and dust, and the pure streams of the mountains, as soon as they strike the plains below, are transformed from the pure waters above to the muddy waters below. So we have below a stream carrying a very large percentage of sediment—a river of mud—flowing in broad sheets and sinking away in the sands. It thus happens that the water that comes from the mountain, as soon as it reaches the sand below, is spread into a thin sheet among the sands and evaporates. More than two-thirds of the streams of that region never reach the sea; they flow out into the arid lands and sink there in the sands and are lost; and even in those streams that run to the sea much of the water is evaporated, so that every sheet becomes smaller and smaller

after leaving the mountains. The utilization, then, of these waters for irrigation depends upon taking possession of the water when it leaves the mountain. If the river is permitted to flow 20, 30, 50, 100, or 200 miles, according to its size, before it is taken out to be put upon the land, it is largely lost.

The difference between high-water and low-water stages is another thing to be taken into consideration. It is often the case that the river carries one thousand times its low-water volume during its high-water stage; that is, the high-water volume is often one thousand times greater than the low-water volume.

At the last session of Congress a statute was enacted directing the Geological Survey to study the question of irrigation and the redemption of the country by irrigation. The act was signed on the 2d day of October. Parties were immediately put in the field in Montana at the headwaters of the Columbia and of the Missouri, on the Carson, the Walker, and the Truckee Rivers of California and Nevada, and on the North Platte, the Arkansas, and the Rio Grande. Of a branch of the Rio Grande—a stream called the Jemez—I chose the Jemez River because I had previously made a geologic study of the river and made a map—I made a study during the fall and winter, in order that I might exhibit to the committees of Congress what this work would be when accomplished. On that river, while the surveys are not completed—

Mr. SYMES. I believe you personally superintended the survey made in connection with that map.

Major POWELL. Yes, sir. There is the Jemez River [pointing], which is a tributary to the Rio Grande del Norte. Here is Bernalillo. Here is Albuquerque. This map is on the scale of 1 mile to 1 inch. I have made the skeleton map large in order to present it to the committee. The map when completed and published will give elevations, grade, curves, etc.

The CHAIRMAN. This is about 100 miles west of Santa Fé.

Major POWELL. It is about 100 miles west and south of Santa Fé. Here is Albuquerque and here is the Jemez River [pointing]; it is a little creek below and a fine stream above. About that line [illustrating on map] we have a little system of mountains; all over there we have a great section of mountains. On the west, up here, are the Tewan Mountains, as they are called in this region of country, the whole following one great system and forming one great group of volcanic mountains. The region a little above that line, except a little portion next to the river—all of that region there [pointing] is too high for agriculture. There is great rain-fall on those mountains. Here we have great, towering volcanic mountains, and the water gathers there and forms the Jemez River, and on reaching Jemez Pueblo it enters the lowlands and becomes broad and sandy. The stream, which above is a clear, narrow torrent, is spread out into a broad sheet and runs through the sands. Further than that, along the lower valley, 4 or 5 miles wide, the winds drift the sands and carry them constantly in sand dunes, so there is always sand filling the channel of the river. Whenever the water gets down here it is absorbed very shortly. At high-water time it rolls into the Rio Grande del Norte, and at low water it sometimes does not reach to this point, and sometimes not even San Ysidro. This is an old country, and, so far as I can learn, irrigation has been practiced there since 1710. I believe that is correct [to Mr. Joseph]?

Mr. JOSEPH. Yes, sir.

Major POWELL. It commenced there in 1710; the first settlement was in 1710 on the Jemez River, and about 2,700 acres of land have been irrigated there. We surveyed the river, and found that the water can be stored at these points [indicating on map]. This comes out at Jemez Pueblo, above the point there [indicating], where a dam can be constructed at little cost, that can divert the water into a canal and carry it there. This is a hilly bit of country through which the canal is to be taken, but by carrying the water out here with a canal 25 miles long, we can come on the plateau above Albuquerque and irrigate all this arid land. We find that there is water enough, if it is stored and carried out in that way, and not allowed to be lost in the sands below, to irrigate about 155,000 (I think it is) acres of land. So that now where they irrigate 2,700 acres of land, it is possible, by storing the water and constructing the works which I shall describe, to irrigate 150,000 acres of land.

It is proposed, then, to construct a reservoir here [indicating]. There is a little settlement; four or five men have gone in there and raised potatoes, and some seasons they raised oats and barley and wheat; and some seasons they can not raise anything, because it is too cold; but there is a little tract of land up here which they cultivate—a few acres. The reservoir which is proposed to be constructed here (Valle Grande) will have a dam 500 feet long and 50 feet high, just here, below a mountain valley, so the whole reservoir will contain 69,000 acre-feet of water. Before going further I will explain what that means. I found on taking up this subject that the people estimated and measured water in cubic feet usually; it is customary for engineers to do that. But that measure is so small that when we get into hundreds and thousands of millions of cubic feet, the capacity of a great reservoir, the numbers are not readily interpreted; we do not understand exactly what they mean.

So I have decided to use another unit for the measurement, and I speak of an acre of water one foot deep as an *acre-foot* of water. So I shall give the capacity of these reservoirs in acre-feet. Ten thousand acre-feet means either 1,000 acres of water 10 feet deep, or 10,000 acres of water 1 foot deep; it is the same thing.

The CHAIRMAN. Would 1 foot of water be sufficient to irrigate an acre of land, or not?

Major POWELL. I was going to reach that point. In some regions it will take an acre-foot and a half of water to irrigate an acre of land; in other regions it will take an acre-foot to irrigate an acre of land; and in others it will take half an acre-foot to irrigate an acre of land. It will vary in different districts. But it is about a fair thing to say an acre-foot of water will irrigate an acre of land; 12 inches of water properly and economically distributed will irrigate an acre of land, although it will irrigate much more in some regions and less in others; but a fair estimate for the United States will be an acre-foot of water for an acre of land. Now, by building a dam 500 feet across the top and 50 feet high here we can make a reservoir with an average depth of 30 feet and an area of 2,300 acres, storing 69,000 acre-feet of water. You will see, Mr. Chairman, how this is to be done. The next reservoir (Valle San Antonio) is a reservoir 60 feet in length across the top—you will see from the sections just what these dams are—and it stores 22,950 acre-feet of water. The next one, at that point there [indicating], stores 23,800 acre-feet of water. This one (on Rio Cebolla) will hold 16,000 acre-feet of water. The next stores 9,000 acre-feet of water; that is this one; and the next one stores 9,375 acre-feet of water.

Now, with these six reservoirs we can store nearly all the water. I am speaking of these reservoirs now that will irrigate these 155,000 acres and redeem it. Now, the water stored in these reservoirs has to be discharged during the irrigating season into the natural channels. It is only held back up in the mountain meadows, which are converted into lakes, and when the season for irrigation comes the gates of these reservoirs are to be opened and it is to be discharged into the natural channels; and to an extent that will be found true all over the United States, flowing waters must be stored high in the mountains and discharged during the irrigating season into the natural channels. The water so discharged is diverted by a dam here [indicating] and carried by this canal.

Now, as to the estimated cost of the work of constructing these reservoir dams above and the diverting dam below, and the construction of this canal which will bring it on the highland. The cost will be about \$450,000. So that to redeem 155,000 acres of land—I may be mistaken in the amount; have you that here [addressing Mr. Croffut]?

Mr. CROFFUT. I think that is correct.

Major POWELL. So that to irrigate and redeem 155,000 acres of land in addition to the 2,700 already irrigated, \$450,000 are to be expended for head works.

Mr. JOSEPH. That is about \$3 an acre.

Major POWELL. Yes, sir.

Mr. STRUBLE. Do you include the cost of the canal in your estimate?

Major POWELL. Yes, sir.

Mr. SYMES. That is to construct all the reservoirs and build that irrigating canal?

Major POWELL. Yes, sir; and to build that irrigating canal. If you do not build an irrigating canal you can not get it out. If you take part of that water and take it through a canal which is carried through the sand you see the water will be lost, and you can not reach land which it is necessary to reach, so you have to build it high up here.

Mr. SYMES. One important question which members of Congress want to know before we proceed to construct these reservoirs is, is it still Government land?

Major POWELL. Yes, sir; it is at present. There are some portions of this upon which an old claim has been filed, or is to be filed, but it has not been confirmed.

Mr. SYMES. From your experience in the West, as a practical fact, would it not be that after it was supposed the Government was going to locate these reservoirs here, and it would be valuable for reservoir purposes, that one way or another all the title to these reservoirs would be probably located, or attempted to be, by speculative citizens in the West before a great while?

Major POWELL. No doubt that they will take up those lands just as soon as they can.

A MEMBER. I suppose a resolution to suspend the sale of the lands would prevent this.

Mr. SYMES. I want to confirm that by Major Powell's report.

The CHAIRMAN. I want to call your attention to the mesa west of Albuquerque, which you propose to irrigate. What would be the probable value of the lands at this time without irrigation?

Major POWELL. Nothing.

The CHAIRMAN. Are they absolutely worthless?

Major POWELL. Yes, sir; nothing grows on them at all.

The CHAIRMAN. What would they be worth when you brought the water upon them?

Major POWELL. That near to Albuquerque would be worth at a minimum, say, \$30; at a maximum, \$200 an acre. Many of the irrigated lands of the West are as valuable as \$200 an acre, and there are scarcely any worth less than \$30 an acre.

Mr. STRUBLE. Explain that more fully. That is something that would hardly be understood in my country where \$30 an acre is a large price for land.

The CHAIRMAN. What kind of crops would be raised upon this mesa?

Major POWELL. Well, it is a warm climate. Most of that land will be from 4,500 to 4,700 feet above the level of the sea. It is in a low latitude, and is a warm climate, so they can raise all the cereals and have very fine vineyards, orchards, meadows, wheat, corn, oats, etc.

Mr. SYMES. What kind of land is that to be irrigated?

Major POWELL. It is a very fair piece of land. Of course there are some washes.

Mr. WARNER. All this land you seek to irrigate is a dead level?

Major POWELL. No, sir; you will see dotted lines running through this; those are washes, dry arroyos, in the land; so it is broken a good deal. Above it is a pretty level sandy beach, upon which is very good land in the main; that is right here. Down here at the river is the low land which has been formed by the deposit of material from the Rio Grande. There is a good deal of this low land not yet cultivated, and these washes head here in the mountains; so land has to be selected from these townships, but that selection has not been made and will not until next spring.

Mr. SYMES. The present law, under which you have been acting, and the explanation you made at the outset of your remarks was that you were directed in your surveys to classify and segregate the irrigable portion of the lands and where this water system of storage can be had.

Major POWELL. Precisely; that is what we are to do. The law already provides we are to select the lands to which this water can be taken, and it withdraws them from settlement, temporarily, and as soon as it is done they are to be restored to the market under the homestead law. That is the way the law stands now.

Mr. SYMES. By proclamation of the President in special cases.

Major POWELL. Yes, sir.

The CHAIRMAN. Will you state to the committee what has been the extent up to this time of your investigations with reference to the whole of the arid regions?

Major POWELL. Yes, sir; I commenced the study of the redemption of the arid lands in 1867, and practically have continued it from that day to the present. Personally and through my assistants I have gathered data for it and studied methods of irrigation, and the methods of constructing reservoirs throughout the world. It must be understood that irrigation is an old industry, that has been carried on for four thousand years or more in some portions of the world, and that the oldest agriculture and civilization of which the world knows was carried on by irrigation, and not at one single point. The oldest agriculture of which we have knowledge was carried on by irrigation in the valley of the Nile, again in China, again through Europe and Africa and Asia. It is only in modern times that men have come to think that they can carry on agriculture without irrigation. For many thousands of years people even in the humid regions supposed they could not carry on agriculture without artificial irrigation. It was supposed in the early days that where there was sufficient water to cover the land with growing vegetation the power of man could not force the reclamation of the country by agriculture; so early agriculture was carried on in arid lands where no timber grew, and the waters were brought from the streams and spring, by buckets and by all sorts of ways, and they were irrigated. That was true not only in the Orient, but through Mexico and Peru and in this country.

The CHAIRMAN. Have you made any estimate of the number of acres that can be reclaimed in the manner you have pointed out on the Jemez, in New Mexico?

Major POWELL. I would not like to make a statement, yet I have made a general estimate. I can give it very nearly, but I did not provide myself with the figures. In the first place, about 90,000,000—between 90,000,000 and 100,000,000—acres of land can be redeemed by irrigation in all the arid regions—that is, about 15 per cent. of the whole country—when all the water is used, when all the streams are utilized. Not more than 15 per cent. of the whole country can be irrigated. In New Mexico about 7½ per cent. can be irrigated.

Mr. SYMES. I beg your pardon, but I did not hear your statement.

Major POWELL. I said that about 15 per cent. of the whole arid region can be irrigated. That means taking out every stream and brook and spring, and storing it up and using it.

Mr. SYMES. That is, utilizing and storing even the rain-water in the arid regions?

Major POWELL. Yes, sir; the whole thing.

Mr. MANSUR. Mr. Struble and myself live in the lower Missouri Valley. Suppose you cut off all the water above us, what effect will that have on the Missouri River in our lower valley?

Major POWELL. The effect is going to be this, that you are more interested in it than they are. What you want is to get rid of water; what they want is to use water. You have your valleys along every river, along every creek and brook, flooded every two, ten, or fifteen years, causing the destruction of tens of thousands and hundreds of thousands and millions of dollars' worth of property, and you are injured by the floods.

Mr. MANSUR. I have lived there ever since I learned to talk, and there has been but one year this occurred from any mountain waters; it is local.

Major POWELL. That is true. No brook there heads above, but the Missouri and Mississippi Rivers have vast areas which are injured in this manner. On the other hand, to increase the irrigable area in the West, you must understand the drift of the clouds is eastward in the United States; everywhere the drift of the clouds is eastward. To increase the evaporation here, and prevent the water flowing to the east and being lost is to slightly increase the precipitation of rain-fall in the East. Whatever irrigation is going on in the West slightly increases the rain-fall in the East.

The CHAIRMAN. You did not state what your estimate was in each of the Territories.

Major POWELL. Say it is $7\frac{1}{2}$ in New Mexico.

The CHAIRMAN. Arizona?

Major POWELL. It is $2\frac{1}{2}$ per cent.

The CHAIRMAN. Idaho?

Major POWELL. It is about 8 per cent.

The CHAIRMAN. In Montana?

Major POWELL. I am speaking from memory as I have made these computations. In Montana it is about 20 per cent.

The CHAIRMAN. In Wyoming?

Major POWELL. Well, the waters of Wyoming are about 18 or 20 per cent.; but it will not all be used in Wyoming. A part will be used in Nebraska. There is so much high land in Wyoming, a part of the water will ultimately, if properly managed, be taken to Nebraska.

The CHAIRMAN. One more question, major, before I leave you. You have stated it is practicable to reclaim an amount of land in each of these Territories by irrigation, by the means you have explained here which you would adopt with the Jemez River. Will you tell us if the adoption of that system will bring these lands into market with desirable locations?

Major POWELL. Yes, sir; and on that point, when an acre of land is once irrigated it becomes of great value, because irrigation is a perennial source of fertilization. Already in the older settled portions of Europe they have abandoned the idea largely of fertilizers, and are beginning everywhere in England, Italy, France, Germany, etc., to irrigate their lands; so that in all of those countries they are irrigating. They are irrigating them, although the rain-fall is sufficient for ordinary purposes; but they are irrigating for the purpose of fertilization.

Mr. SYMES. Right there; in your extensive examination of this subject regarding the fertilization resulting from irrigation, is there any dispute, either of theory or practice, that irrigation is not a great source of fertilization?

Major POWELL. Not at all; the thing is so simple—

Mr. SYMES. I call your attention to it because a member of the Appropriation Committee the other morning—the morning after you addressed it—said he understood that irrigation impoverished the land. I told him that it was not so, and that it was demonstrated out there, both by theory and practice; but he said that he understood it the other way.

Major POWELL. I will tell you in regard to that. It probably arises from this: In a great basin like this great basin of Utah and a portion of Arizona—and in some portions of California they have like conditions—there are vast areas, waters of which are not carried to the sea. Among these are many small basins, into which the stream brings water annually and stores it up in a lake during the time of flood. When it evaporates to the heavens it precipitates upon the land the salts which it contains; it becomes more and more alkali; and an attempt to irrigate that land, instead of improving it injures it, and it becomes what we call a "playa" or alkali flat, which can not be irrigated. There have been a number of cases of that kind in California and Nevada, where they have attempted to irrigate lands in basins, which would form lakes if there was sufficient rain-fall, and they would get a crop for a year or two, but very soon that would cease.

Mr. SYMES. Very soon the soil all turns into an alkali.

Major POWELL. Yes, sir. Probably the gentleman referred to that.

Mr. MANSUR. That comes from the fact that the water takes up in solution matter which is detrimental to vegetation; whereas, in all these other parts you speak of, it takes up matter which is nutritious?

Major POWELL. Yes, sir.

The CHAIRMAN. One more question: Do you propose that the Government shall build these reservoirs, or that they shall be built by private enterprise?

Major POWELL. I think that is a question that needs a good deal of consideration. The statute as it now stands provides solely for a survey. If you ask me my judgment as a politician, I will tell you what I think.

The CHAIRMAN. I would like to have it.

Major POWELL. I do not believe the Government will ever do it. I think it will provide conditions ultimately for the disposal of this land which will permit people to do it for themselves. That is my judgment. I speak of that not as a surveyor, but as a matter of my own private opinion.

Mr. STRUBLE. What is your proposition as broad statesmanship in regard to this? Is it not one that merits consideration and action of Congress in the way of appropriations for all this to secure this great water from waste?

Major POWELL. I do not think you ought to insist on my answering a political question; but I will tell you what I think can be done and ought to be done. I think that that whole country should be divided into districts like the Jemez; such a region of country all parts of which are interdependent; that is, that the irrigation of that tract is dependent upon the storage of that tract. Now, all streams which unite and form one of these arid land rivers and the valley from which water could be taken for irrigation should be constituted a political unit, like a county, for example. The people who settle in this county then should have control of all that water, and the people of the county who live in that basin—not the people of the State, but the people of the county, as I have described—the people of that district should own that water. The people who come in there and settle should have a right to that water. Then the county, as a body-politic, should provide for the construction of reservoirs and the construction of canals. Further, let me say, they should own all the land and all the water. After all the irrigable land is taken up there will still be left a large area which is of some value as scant pasturage; that should never be taken up as private property; that should be a common, upon which the people could pasture their cattle, the people who cultivate the agricultural lands. I do not think that should be disposed of to individuals for pasturage purposes; but in each county the pasture lands should be common lands, as it is in some parts of Spain.

Mr. MANSUR. I would like to have your idea as to what you think of artesian wells.

Mr. SYMES. If my colleague will pardon me for a moment, I would state that when this matter was debated in the House it was said that the people in the valley along the Platte River thought that if you took the water out and stored it above it would cause these streams to dry up, partly. Now, Major Powell, I know you take the other side of this question, and I want you to explain to the committee that the taking up and storage of the water and distributing it over the surface of the land by irrigation will cause a more steady flow, by laws which you understand, and the streams below will not dry up, where twenty-five or thirty years ago they were ridden across by people going to California.

Major POWELL. The storing of the water above, as I have mentioned, will have this effect, that it will greatly diminish the volume of water in the streams below during the non-irrigating season, and instead of great floods of water running down through the non-irrigating season, they will be caught up and stored above, and the streams will be very small, but during the season of irrigation the water will be poured out and spread upon the lands, and a portion will be re-evaporated and a portion will find its way to the streams; and so during the irrigating season the streams below will be larger by using them above in this manner; but the total amount of flood will be very much less.

The CHAIRMAN. You have presented a number of maps here illustrating the proposed irrigation system of the Jemez River region. Will you please state to the committee whether these maps were prepared here from the maps previously formed, after you made a survey in the field?

Major POWELL. Yes, sir; from surveys in the field.

The CHAIRMAN. Since the bill passed in October?

Major POWELL. Yes, sir.

The CHAIRMAN. That bill only authorized you to make a preliminary survey?

Major POWELL. That authorized a survey and provided for the withdrawal of sites for reservoirs from public sale and disposal and provided for the segregation of the irrigable lands.

The CHAIRMAN. That you are doing now under that resolution?

Major POWELL. Yes, sir.

Mr. SYMES. I wanted to ask you in that connection, major, regarding the topographical survey that has been going on for ten years, for which about \$10,000,000 has been already expended and which requires you in that topographical map to classify the irrigable land; this is only in addition to the work you have been already doing?

Major POWELL. This is in addition to the work we have already been doing under

the law. It was a map prepared for the Committee on Public Lands, and it came from the Committee on Public Lands to the Appropriations Committee. The original law in regard to the Geological Survey provided for the survey which we are now making; but we were not at that time authorized and directed to segregate the irrigable lands and we were not ordered to report upon and withdraw from settlement the storage basins. That was added to it by the statute of last year. They only added to it the amount which I estimate will make in the long run an addition of about a million and a half of cost. We were going on with this work before, but we were going on in a way which was necessarily slow, and people became anxious to have it done.

Mr. SYMES. In that connection you used a great deal of topographical work already done?

Major POWELL. Yes, sir; this shows the work.

Mr. SYMES. Do the colors on that map show the present work?

Major POWELL. We have a topographical survey wherever this map is colored. We have got to finish a topographical survey of the rest of the arid region, and we use that as a basis with our work.

Mr. WARNER. Just one more question. I understand you redeem by this 155,000 acres?

Major POWELL. Yes, sir.

Mr. WARNER. And the cost of the storage reservoirs you estimate in round numbers would be \$450,000, and that would redeem 155,000 acres of irrigated district?

Major POWELL. Yes, of irrigated district.

Mr. WARNER. And you say they should own this water?

Major POWELL. The people should own the water.

Mr. WARNER. And part of the burden of constructing the storage reservoir?

Major POWELL. Yes, sir.

Mr. WARNER. Would it be possible for homesteaders going out to settle to build that dam?

Major POWELL. You can not do it under the present law.

Mr. SYMES. That would be \$3 an acre instead of \$1.25.

Major POWELL. Yes, sir; but I tell you how it could be managed, and was until the last two or three years. This has been practically prevented by administrative process. This is the way it is done: The people go out to settle a tract of land. A loan company say to them, "We will loan you money and we will take a mortgage on your land." Another company is organized, an irrigation company. Perhaps there are three companies—a land company, a loan company, and an irrigation company. Part of the men who settle on lands are thrifty men and will gradually pay what they mortgage; others will not, and the loan company will take the lands and sell them to the land company. Such a process as that is going on.

Mr. WARNER. This is a very difficult question. Then, in order to have lands to mortgage to a loan company or irrigation company, there must be settlers upon the land having title to it?

Major POWELL. Yes, sir.

Mr. WARNER. Therefore, you will have to have these 155,000 acres settled and owned by the individuals. What, in the meantime, are they to live on?

Major POWELL. They can not live there until some company lends them money enough to live on.

Mr. STRUBLE. The result of all this, when we come to the details, is that either the Government or somebody with capital has to go forward first and complete this work.

Major POWELL. Companies must be organized to do it, and the people must organize them themselves. There are a great many of these irrigated districts that have been carried on by individual property holders who have gone in there as a community of one hundred or two hundred persons, who have got a site in a valley and say, "We will form a corporation and tax ourselves so much and pay it," but individual agriculturists can not do it.

Mr. MANSUR. When you get this canal ready for conducting the water, what rate per acre will it be?

Major POWELL. After the construction of the work necessary there is a cost, of course, for putting the water upon the land per year, which is from \$1 to \$2 per acre. Every year there is an actual cost of putting the water on the land of from \$1 to \$2 per acre.

Mr. WARNER. But to prepare to put it on the first year, what is probably the cost per acre?

Major POWELL. I think that would be about \$3.

Mr. MANSUR. No, you misunderstand me. I mean the first year.

Major POWELL. That will be probably about the same thing. I expect \$1 to \$2 an acre the first year would be about correct.

The CHAIRMAN. You have indicated the arid lands on the center of the map about the one hundredth meridian west of Greenwich as the eastern boundary of the arid

region. There is a vast area west of the one hundredth meridian that produces crops without irrigation at this time.

Major POWELL. I do not know that.

The CHAIRMAN. Judge Symes would know that. There is a vast region west of the one hundredth meridian which produces crops without irrigation.

Major POWELL. There is west of this line, between these two lines, a country that produces some crops without practical irrigation.

The CHAIRMAN. Is that not the western boundary of Kansas ?

Major POWELL. No; it takes in a portion of Kansas.

The CHAIRMAN. I have passed through there during the latter part of summer, and have seen corn that would raise 40 bushels to the acre 100 miles west of that line—I will say 50 miles.

Major POWELL. I do not think this last year there was one acre of corn or any other crop raised without irrigation west of that line.

The CHAIRMAN. I have letters from numerous individuals who are now settled upon what is known as "No Man's Land," who said they raised large crops this year.

Mr. STRUBLE. I think the major just stated awhile ago that occasionally there was a season when they could raise crops.

Major POWELL. It happens this year that no crops have been raised; all the crops failed.

Mr. MANSUR. My son travels in western Kansas selling agricultural implements, and he told me that, when he was home, between the seasons more than half the people had gone out of the western section of Kansas ninety days before the election.

Mr. SYMES. This was a dry season.

Major POWELL. The crops failed except when they had been irrigated.

Mr. SYMES. But crops have been raised in the last few years to a limited extent where they have plowed the fields in the fall and utilized the snows of winter for fully 50 miles west of that line. During wet seasons they will raise some crops west of that line; but, as the major has said, agriculture there is very precarious.

Major POWELL. To attempt agriculture anywhere west of that line is to invite disaster.

Mr. SYMES. I rode over a portion of that country horseback year before last. In the first place, they raise corn that will not and can not ripen without it is an exceptional season. They will raise some crops like corn, and have to feed it to the cattle, and they also raise oats that will not ripen.

Mr. MANSUR. What about artesian wells in Arizona?

Major POWELL. Artesian wells in the present state of development of irrigation are practicable only in limited localities. There are many valleys between the mountains in this country where artesian wells are feasible; but the cost of artesian wells is too great, compared with the amount that can be irrigated. It is a very fine well that can irrigate 15 acres; a fine well that will irrigate 10 acres; and it is a pretty good well that will irrigate 1 acre; and when you consider the fact that a well which would cost \$100, \$1,000, or \$10,000 would only irrigate 15 acres of land, it is too expensive. There is the difficulty. Artesian wells are practical for watering stock and for towns and for gardens and various purposes of that sort.

Mr. WARNER. I would like to ask you one question and get a practical idea of this. Would your estimate of these lands when reclaimed by irrigation probably be \$50 an acre? Would that be a fair average?

Major POWELL. Yes, sir.

Mr. WARNER. I understand you to say the cost per year for the maintenance of the storage reservoirs and canals would be from \$1 to \$2 per acre.

Major POWELL. Yes, sir.

Mr. WARNER. One dollar and fifty cents per acre you think would be a fair average.

Major POWELL. I should think that probably would be a fair average.

Mr. WARNER. This, on the estimate of \$50 per acre, would be 3 per cent. of tax for irrigation?

Major POWELL. Yes, sir.

Mr. BARNES. I would like to ask the major a question, as I have not troubled him with any questions heretofore, and there is a question which suggests itself to my mind. I understood you to say the natural drift of the clouds of this continent was from the west to the east.

Major POWELL. That is the drift of the storm.

Mr. BARNES. And in consequence of this the precipitation of rain would be increased toward the east?

Major POWELL. I put in the qualification that it will be slight, but I should judge that it would be a slight increase.

Mr. BARNES. That is just what I wanted to know—whether or not the consequence would be an increase of the rain-fall towards the States on the Atlantic Ocean.

Major POWELL. It is pretty hard to say whether it will be carried as far as that, I

bardly think it will be carried as far as the States on the Atlantic Ocean. But it certainly will be carried into this region here, which is all more or less dry. Allow me to call attention to one other practical point. Why the people are so anxious to have it done is this, and this is the most important reason: they want some selection of the lands to be made. For example, without going to the map: Here is a stream going down the mountain and running across the plain. Where shall that water be used? There is from two to ten times as much land as there is water to serve it. Where shall that be used? If we use it too high up we get into a cold climate. If we use it too low down we get too little water; the water is lost before it reaches there. If we use it on this piece of land, it is without drainage, and like the playa lands, it will destroy the soil; if we use it on that piece of land, with a hard subsoil, an acre-foot of water will redeem 2 or 3 acres of land; if we use it on a more sandy soil, with a porous subsoil, it will redeem a half acre of land. So the practical information which the people want is to know where they can best use this water. Practical experience has resulted in this thing in Utah, for example. Places where water was to be used were selected over and over again. The Mormon people have settled in a little valley, for example; and first they settled too high, and they moved; and then they settled too low, and the water would not reach them; they found they had taken playa lands, which would be destroyed, and sandy lands on which the water would be lost. So the settlements in Utah have been moved four times on an average. They have paid just four times as much for irrigation as they would have paid for it if they had had the practical knowledge. That is where it is useful, as the people do not know what lands to take, where to settle, in order to use the water to the greatest advantage.

Mr. MANSUR. It takes an expensive system of leveling.

Major POWELL. Yes, sir; and a study of the soils and a great deal of other work to know where the water can be carried. When we attempt to carry water across a sandy place the water is lost. Sometimes we find hard ground and sometimes we find ground where agriculture can be carried on successfully, and sometimes where the soil will be destroyed. I should have liked to talk to the committee about the conditions of these lands and the soil, but it would take a longer time than I have at my disposal.

The CHAIRMAN. What is the comparative value per acre of irrigated lands with an acre of land that produces without irrigation?

Major POWELL. I think that every acre of land in any portion of the United States can by irrigation be trebled in value. In any portion of the United States land can be trebled in value by irrigation.

Mr. BAKER. You mean to say even if the land does not require irrigation?

Major POWELL. Yes, sir; the fertilization from it will treble its value.

The CHAIRMAN. Is not this demonstrated already in Utah and southern California?

Major POWELL. It is better exhibited in the experience of Europe where they irrigate humid soil.

Gentlemen, as there are but twenty minutes more left of the hour, and as there is no possibility of my appearing before the Agricultural Committee, if you wish to ask any questions I will devote the other twenty minutes to your service.

The CHAIRMAN. I think that we have probably covered all the ground that we desire, unless there is something more you wish to say.

Major POWELL. I would like to speak about the selection of these reservoir sites. If they are selected on the low lands there are 60 to 80 inches of evaporation. In that reservoir from which 80 inches of water is evaporated annually there is too much evaporation. If the same water is stored high in the mountains, where there is only 10 to 20 inches of evaporation, it is saved, and that is a point to be noticed. Next is this, that the reservoirs themselves will fill with sediment. The water stored in the mountains will cause the reservoirs themselves to fill slowly. If the reservoirs are constructed in the high lands, where the water is clear—in the mountain region—they will fill very slowly and can be easily cleaned out by hydraulic methods, but if the reservoirs are constructed below and the water is taken out at a point where it becomes muddy, as it does in the streams in the arid lands, in the manner I have already described, these reservoirs will fill very rapidly.

Mr. MANSUR. Does clear water possess anything like the quantity of fertilizing matter that the muddy waters do?

Major POWELL. Yes, sir; the waters that fall in a region covered by growing vegetation are the waters which contain the fertilizing elements. The fertilizing elements are not in the sand which they carry, but the wash of the leaves and grass and vegetation generally. On the mountain where these waters fall, there is an enormous growth of vegetation, and the water falling upon that vegetation carries with it the fertilizing element.

Mr. SYMES. Though clear, it has the fertilizing elements in it?

Major POWELL. The clearest water may have the most fertilizing elements and the best, because it carries with it in solution the elements which fertilize the soil,

A MEMBER. What is the comparative cost of building reservoirs on high hills and building them on the level?

Major POWELL. That varies; every reservoir has different regimen and rules of its own. The highland reservoirs can not be built without favorable natural configuration. Usually the streams of mountain regions have great declivity, and dams constructed in their channels will store but a small amount of water; but there are regions where mountain valleys can be made to hold large bodies of water at a small expense for dams, and such reservoirs are among the most economical and advantageous. Where the waters can not be stored above, they must necessarily be stored below. On the South Platte a part can be stored above and a part below, but on the Arkansas and North Platte it can all be stored above.

Mr. Chairman and gentlemen of the committee, I thank you for your courtesy in listening to me.

MEMORIAL OF NEW MEXICO.

A memorial of the legislative assembly of New Mexico has been adopted unanimously, as will appear from the following telegram:

SANTA FÉ., N. MEX., *January 19.*

A lengthy memorial to the President and Congress has passed the New Mexico legislature by a unanimous vote, praying the admission of this Territory to the Union of States. A committee will be appointed to convey the memorial to Washington. Among other things it says:

The population of the Territory of New Mexico, at the present time, exceeds 175,000 persons, exclusive of Indians, who never vote, claim, nor have the right to vote under our laws. New Mexico is not behind other Territories of the United States in point of progress, as some people of the States seem to believe, but in fact it is ahead of some of its sister Territories in many respects. The assessed value of property in the Territory has been constantly increasing for the last few years, until the valuation reached about \$60,000,000, exclusive of railroad property, mines, and other property, temporarily not cited, amounting to at least \$60,000,000 more. With this increased valuation there has been an increase during the past two years, as shown by the last election returns of the Territory, of over 5,000 votes, showing an increase in the population of the Territory within that time of about 30,000.

A large and intelligent class from all portions of the States is constantly coming into the Territory, and is rapidly developing its resources and increasing its wealth and prosperity.

New Mexico possesses the resources, the intelligence, the enterprise, and the population to authorize and demand its admission into the Union as a State at once. With its admission it would be but a few years when it would be equal in every respect to the present States of the Union. It is estimated that there are probably 60,000,000 acres of tillable land in the Territory. The gold and silver fields are second to none in the United States. No State or Territory in the Union can equal it in respect to the placer gold fields, and its output of gold and silver bullion is only surpassed by about four States and Territories of the Union. It has a permanent system of public schools, free from sectarian or religious influences, with liberal appropriations to meet the expenses thereof.

It provides for the calling of a constitutional convention at the capital of the Territory, to formulate a constitution, republican in form; establishing an absolute religious toleration, and providing for a permanent system of free public schools for the State.

MEMORIAL OF COLORADO.

The legislature of Colorado, sympathizing with the people of New Mexico in their efforts for statehood, is about to adopt a memorial praying Congress to admit New Mexico as a State in the Union. This memorial has already passed the senate of that State unanimously, and will undoubtedly pass the house of representatives. It is as follows:

To the President and Congress of the United States:

Your memorialists, the senate and house of representatives of the State of Colorado, would respectfully suggest that the citizens of the State of Colorado have a great patriotic and material interest in the welfare of the Territory of New Mexico.

That Territory was added to the United States by the treaty of Guadalupe-Hidalgo in the year 1848. It was organized as a Territory under the laws of the United States in the year 1850. By the terms of the treaty by which it was ceded to this Government the people of that Territory who should not pursue the character of citizens of the Mexican Republic were guaranteed that it should be incorporated into the union

of States and be admitted to the Union, at the proper time, to the enjoyment of all the rights of citizens of the United States, according to the principles of the Federal Constitution.

It is public history that the people of that Territory have frequently demanded and asked compliance on the part of the General Government of these promises, so solemnly made, believing that their interests would be best subserved and their welfare promoted by the admission of the Territory into the Union as a State. Their petitions have been before Congress on several occasions, and in 1874 the House of Representatives of the United States passed a bill to admit the Territory as a State, which bill was subsequently passed by the Senate, with an amendment, and which amendment was not concurred in by the House for want of a two-thirds vote (six votes only being needed) to suspend the rules and take up the amendment. It was by the same Congress that the enabling act for the admission of Colorado into the Union as a State was passed. The bills for the admission of New Mexico and Colorado were prepared and introduced at the same time; they passed the House of Representatives by practically the same vote; they went to the Senate, and both passed the Senate, each of the bills having amendments attached thereto, and Colorado was only more fortunate than her then sister Territory of New Mexico in that she succeeded in getting the necessary two-thirds vote to suspend the rules of the House of Representatives to take up the amendments, while New Mexico failed by a few votes to accomplish the same result.

Lying, as Colorado does, immediately to the north of New Mexico, and the people of both constantly intermingling and being closely allied in interests and commerce, from knowledge we can assert that the citizens of New Mexico, ever since the Territory's annexation to the United States have been unwaveringly devoted to the General Government and loyal to its principles and institutions, not excepting in the days of the civil war, during the whole of which they stood firmly for the Union, and at which time several thousand of the Territory's militia were sent to the front and engaged in the service of the United States; and all this was done without fee or compensation from the General Government, the people of the Territory submitting to taxation to raise money necessary to defray the expense of such service.

The population of the Territory of New Mexico at the present time is more than 150,000 persons, exclusive of Indians, who neither vote, claim, nor have the right to vote under its laws.

The Territory is not behind other Territories of the United States in point of progress, but in fact is far ahead of some of its sister Territories in many respects. It is traversed by railroads and telegraph lines in various directions, giving to every part of it speedy and easy communication with every part of the United States. There are now more than 1,400 miles of railroad within its borders, and with their construction have come from the different States a large, wealthy, and enterprising immigration. The number of this class of its citizens added to its population since the commencement of its construction of its railroad system equals that of the population that was in the Territory prior to the advent of the roads.

The gold and silver mines of New Mexico are vast and of immense value, and with the capital and enterprise which its independence as a State would induce they would soon be developed so that they would be second to none in the Union.

Its public-school system is created upon broad, unsectarian principles, with liberal appropriations to meet all the expenses thereof. The total enrollment of pupils in the public schools for the year 1887 was more than 13,000, and the average daily attendance upon its schools during the same period was more than 11,000, and during the year 1888 there has been a large increase over this showing for the preceding year.

The people of the Territory, in recent convention assembled at Santa Fé, have expressed themselves emphatically as being in favor of the admission of their Territory as a State at the earliest practicable moment. The convention was composed of the leading and prominent men of the Territory of all parties.

Sympathizing as we do in the earnest and patriotic endeavors of the citizens of New Mexico to have their Territory admitted into the Union as a State, we, in presenting this memorial, give expression to our own earnest and brotherly feelings in favor of the same event. We therefore appeal to the President and Congress for favorable consideration of the appeal of New Mexico's people, as well as for early action in the premises. And thus we will ever pray.

In view of the undisputed fact that New Mexico has the necessary population and resources to entitle her to admission into the Union, your committee report the bill back, without amendment, with a recommendation that it pass.

All of which is respectfully submitted.