ADMISSION OF ARIZUNA, IDAHO, AND WYOMING INTO THE UNION.

FEBRUARY 13, 1889.—Committed to the Committee of the Whole House on the state of the Union and ordered to be printed.

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

REPORT:

[To accompany bill H. R. 12411.]

The Committee on Territories, to whom were referred the bill (H. R. 12411) to enable the people of Arizona, Idaho, and Wyoming to form constitutions and State governments, 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 it back without amendment,

and to recommend its passage.

This bill provides an enabling act applicable to the Territories named, by the terms of which an election is to be held in each Territory on the Tuesday after the first Monday in November, 1889, for the election of delegates to a constitutional convention. The conventions will assemble at the capitals of the respective Territories in January, 1890, and the constitutions formed are to be submitted to a vote of the people of each Territory, for ratification or rejection, at the November election thereafter. The bill in other respects contains substantially the same provisions as were contained in the bill which passed the House at this session in reference to Dakota, Montana, Washington, and New Mexico.

Pending the consideration of this bill in the committee Maj. J. W. Powell, Director of the U.S. Geological Survey, was invited to appear before the committee for the purpose of explaining the work of the survey under a recent act of Congress in reference to irrigation and the

reclamation of arid lands.

It is well known that the Territories of Arizona, Idaho, and Wyoming are in arid regions and crops can not be produced there without irrigation. Hence it is important to know how far irrigation can be practically used for developing the resources of these Territories. Major Powell's statement before the committee is valuable and shows the immense possibilities of our arid lands. The Delegates from the Territories of Arizona, Idaho, and Wyoming, Messrs. Smith, Dubois, and Carey, also appeared before the committee and made very full and satisfactory statements in reference to the Territories which they repre-A careful perusal of these statements will more than satisfy the House that the Territories of Arizona, Idaho, and Wyoming have the requisite population and resources to entitle them to statehood. It is true that none of them, at this time, have a population equal to the ratio now required for a member of the House of Representatives, but it is estimated upon reliable data that by the time fixed in the bill, if it should pass at this session of Congress, each of the Territories named will have

the requisite population.

The future possibilities of these Territories are very great. No fear need be entertained that they will have a small population, or be wanting in anything which should pertain to a State in this Union. It is believed by your committee that statehood will greatly stimulate the growth and prosperity of these Territories. The Territorial condition tends to retard enterprises and the development of the resources of the Territories.

Your committee invite a careful consideration of the subject, and especially of the exhaustive statements made by the gentlemen named, which are hereunto attached and made a part of this report.

ARIZONA.

The statistics in reference to the Territory of Arizona have been set forth in extenso in the remarks submitted to the committee by the delegate from that Territory (Mr. Smith), which remarks are printed herewith, and to which careful consideration is respectfully requested. It will be found, when all the facts are known, that Arizona is now fitted for statehood, and in the future gives promise of rapid development and a large and stable population.

WYOMING.

In addition to the information contained in the remarks of the Delegate from Wyoming (Mr. Carey), to which reference is made, your committee call attention to other facts showing the desire of the people of that Territory for statehood and its great resources and prospective growth.

The tenth and last legislative assembly of Wyoming Territory, elected in November, 1886, which assembled in January, 1888, memorialized Congress to pass an act to enable Wyoming to form a State government,

from which we make the following extracts:

The organic act of the Territory was approved on the 25th day of July, 1868; the organization was completed on the 19th day of May, 1869; as organized the Territory

has existed for nearly nineteen years.

Its coal fields are numerous and extensive, have been much worked, and are seemingly exhaustless; its iron, soda, and oil fields are extensive and rich and are seemingly exhaustless; its native grasses are various, abundant, and highly nutritious. Contrary to former impression, its capacity for vegetable culture is very remarkable, aided by irrigation.

An extensive system of skilled irrigation has been established, is rapidly increas-

ing, and admits of large and indefinite expansion.

In his report to the Secretary of the Interior for 1885 the then governor (Warren) stated the number of live stock in the Territory, consisting of horned cattle, sheep, horses, and mules, at 3,100,000 head, and their valuation at \$75,000,000; and in his report to the Secretary for 1886 the number as increased, and the value as exceeding \$75,000,000; the two years were periods of exceptional market depression in live-stock values—the last much more than the first.

The long, extensive, and accurate experience of that governor with the subject; and his sound and practical judgment, entitle his statements to especial respect.

The report to the Secretary for 1887 by the present governor (Moonlight) does not state the number or valuation for that year; but it shows improved methods in the raising of horned cattle are in promising progress, and that horse and sheep cultures have become extensive, are rapidly increasing, are conducted with superior intelligence, and represent large investments and fine breeds. The unmistakable ability and intelligence evinced by the report render it worthy of full confidence.

It is plain to ordinary observation that nature intends Wyoming for a great railway area of the west division of the continent and a great railroad highway for transcontinental traffic. The Union Pacific Railway traverses the southern belt of

the Territory, another trunk Pacific railway has been completed partially across the Territory, and the construction of a third has nearly reached its eastern boundary.

These lines finished, lateralization will follow according to the inevitable law of trunk-line development. Other and important railroads are also operating, and ordinary observation can easily foresee that within the next fourth of a century the Territory will be grid-ironed over by a complete railway system.

A free public and compulsory system of education is well advanced here.

The above data are moderately stated, and prepare the mind to accept the estimate of the present population of the Territory, which is stated in the governor's report for 1887 at 85,000.

This assembly confidently accepts the report as correct on the subject.

It is manifest that the prosperity and welfare of the people of this Territory will advance, under State institutions, far beyond what can be realized in a Territorial condition

This legislature respectfully requests of Congress such legislation as will enable the people of the Territory to form a constitution and State government, and for the admission of such State into the union of the United States of America on an equal footing with the original States thereof; and that such legislation may embrace ample and gratuitous grants to such State government by the Federal Government of the lands of the latter lying within the Territory, for the support of common schools, for the erection at the capital of the State of public buildings for judicial and legislative purposes, or to promote the construction of such buildings; also for the erection of a penitentiary or State prison; the donated lands and the proceeds thereof to be employed as the legislature of such State government may direct in respect to the support and conduct of schools and the erection or construction of such judicial, legislative, and penitentiary buildings, and that such legislation may further provide that a proper per centum of the proceeds of the sales of all public lands lying within said State which shall be sold by the United States subsequent to the admission of said State into the Union, after deducting all expenses incident to the same, shall be donated and paid to the said State for the purpose of making and improving public roads, constructing ditches or canals, to effect a general system of irrigation of the agricultural land in the State as its legislature shall direct.

Governor Warren, of Wyoming, in his report to the Secretary of the Interior in 1886, thus refers to the geographical position, agricultural and mining resources, and possibilities of the Territory:

The Territory of Wyoming is bounded by Montana on the north, by Dakota and Nebraska on the east, by Colorado and Utah on the south, and by Montana, Idaho, and Utah on the west, and is embraced between the forty-first and forty-fifth parallels of latitude and between the twenty-seventh and the thirty-fourth meridians of longitude west from Washington; contains an area of about 100,000 square miles, being 365 miles in length from east to west and 275 miles in width from north to south, or nearly that, and comprises a total of some 64,000,000 acres, as shown by the records of the surveyor-general's office of the Territory. Thus the area of Wyoming, in square miles, is nearly as large as all of the six New England States and the State of Indiana combined, and nearly 3,000 square miles larger than the two great States of Iowa and Ohio.

Wyoming's geographical position on the continent, in relation to all those natural advantages and industrial resources, climate, rock, timber, minerals, grazing, agriculture, and transportation by the great central line of railroad connecting the two occases, with other east and west trunk lines in progress and in prospect, is equal, if not superior, to any other Territory or Commonwealth within our national borders. From the Atlantic Ocean to the east line of Wyoming, along the forty-first parallel of latitude, which bounds the southern border of the Territory, is a distance of about 2,000 miles, and from the west line of Wyoming along the same parallel of latitude to the Pacific Ocean is a distance of some 800 miles. Thus it will be observed that the geographical position of Wyoming is unexceptional. It has a rich agricultural State, Nebraska, joining it on the east, and the mining, farming, and grazing State of Colorado on the south, while the northern line of the Territory is within about 50 miles of the Northern Pacific Railroad, at its nearest point, in Montana, on the north.

Salt Lake City, the great midway town between Omaha and San Francisco, is only 100 miles west of Wyoming's western limit.

IRRIGATION IN THE TERRITORY.

The Rawlings Journal thus refers to the progress made in reclaiming arid lands in the Territory of Wyoming by means of irrigation:

A twenty-five years' residence in and acquaintance with Wyoming convinces us that the valleys of the Platte, Snake, Laramie, Powder, Big Horn, Medicine Bow, and

other large streams are very easily irrigated, while the soil, especially of the beach lands, is very rich, producing more grain to the acre, which weighs heavier in the measured bushel than grain grown on the best lands in any eastern State. The well known firm of Coe & Carter, of Omaha, have all the surveys made and will in the early spring begin work on a ditch taking water out of the Upper Platte, near the mouth of Brush Creek, in this county, that will irrigate and bring under cultivation a scope of country fifteen miles wide by thirty-five miles in length.

Still another company of Eastern capitalists have a preliminary survey of a ditch from the mouth of Big Creek, on the Platte, to this city, the estimated cost of which is \$1,000,000, and the amount of land to be reclaimed is 1,000,000 acres. Ditches have been taken out of Snake River by the Douglas Company, which reclaim several thousand acres of splendid lands. All this in Carbon County, which is considered the barren county of the Territory; the counties of Laramie, Albany, Converse, Crook, Johnson, Fremout, and Sheridan being admitted agricultural counties. That a very large area of Wyoming is susceptible of irrigation and cultivation there can be no possible doubt in the mind of any person acquainted with the Territory. We predict that in five years' time the purely agricultural population of the Territory will be nearly twice as large as the whole population at the present date. Therefore give us a

The Denver Republican in a recent issue publishes an interview with Mr. George L. Aggers, who had just visited the oil fields of Wyoming, from which the following extracts are taken:

I have been interested in the Wyoming oil fields for over five years and never felt more sanguine than I do now over the great future before that country. There never has been any doubt in my mind that oil existed there in large quantities, and the development of the past three years has proved that I was right. The only question has been, "How will we get it to market?" and that question is now satisfactorily answered by the number of railroads building into the country.

The Chicago and Northwestern is already completed and runs a daily train to Casper, on the Platte River, and the Burlington and Missouri has a force of men surveying and laying out their road up the North Platte, being at present at work about 20 miles west of Fort Laramie. I think, from apearances, it is their intention to emulate the recent action of the cable company of this city and steal a march on the Northwestern, thereby securing the right of way up Casper Creek from the town of Casper and right through the oil country. They have already outgeneraled the Northwest-ern on the route to Buffalo, and when I passed through there they had a large force of men and about one thousand teams at work near Fort Robinson. From that point the Burlington and Missouri is building a road in a northwesterly direction through the northeastern corner of the new county of Converse and thence through the rich farming country lying around Buffalo.

"At Casper, the new oil town at the end of the Northwestern, everything is booming. The lots have been sold and many substantial buildings are going up. By spring that town will have a population of over 2,000 souls, and will be the headquarters and supply point for that whole oil country. People are coming in there every day from the East and going from there by team to the oil fields around Ervay's. While I was there a party of Eastern capitalists arrived from Omaha on a special car and went on up to look the oil country over, with a view of buying up a large body of land and putting in drilling machinery, as they realize that petroleum is the fuel of the future, and they expect to ship it into Denver, Omaha, and all the large towns and cities of

the West.

"The Burr well, at the mouth of Poison Spider Creek, has resumed work, as has also the well of the Chicago and Northwestern Company, which is being put down near Ervay's ranch. An immense amount of assessment work has been done the past summer through that whole country, many of the companies and individual owners improving the roads and applying it as assessment on their claims, so that now the finest roads in the Territory are through the Rattlesnake district.

"The coal mines at Glen Rock are worked to their fullest capacity, and are shipping twenty-five cars per day from the mines, but can not get men and cars enough to supply the demand. As the railroad builds farther west all the coal lands along the Casper Creek and south forks of Powder River will be opened, and the coal industry alone

will out no slight figure in Wyoming's prosperity.

"Yes, Wyoming has a great future before it, and the time is not far distant when a railroad will be built from Denver north into the Territory, through the beautiful Platte Valley, tapping the oil and coal fields of the Rattlesnake district, up through the timber and agricultural lands of the Big Horn, and on through to Butte, Mont., thus giving Wyoming an outlet to the coast with Denver as the central shipping point for that whole country."

POSTAL STATISTICS.

One of the surest indications of prosperity in a community is found in the statistics of the postal service.

The receipts of Wyoming's offices during 1888 were as follows:

The total postal receipts in Wyoming during the last year amounted to \$69,378.07. The receipts from the sale of postage-stamps, stamped envelopes, and postal-cards were \$62,378.97; from box-rents, \$7,012.07; and from the sale of waste paper, \$1.25. There was paid to postmasters for compensation \$31,254.71, and for clerks in post-offices, fuel, and rent, \$3,041.61. The letter-carriers received \$1,569.65, and the rail-way postal-clerks, \$477.25.

There are six Presidential post-offices in Wyoming, the aggregate receipts of which are \$36,744.80. The salaries of the postmasters amount to \$9,700.

There are one hundred and seventy-three postmasters in the Territory, an increase

of twenty-five for the year, making 14 per cent. increase for the year.

The total number of miles of mail routes is 2,490. Of this the star service takes

1,815 miles.

The decrease in length of star routes was 94 miles, and the increase of railroad service 133 miles.

SALES OF PUBLIC LANDS.

The land entries in Wyoming during the last fiscal year were as follows:

Year ended June 30, 1888	2, 041, 730
Grand total	2,559,056

NATIONAL BANKS.

Number of banks, 9.

Abstract of reports made to the Comptroller of the Currency, showing the condition of the national banks in Wyoming at the close of business on Wednesday, the 12th day of December, 1888.

Resources.		Liabilities.	
Loans and discounts. Overdrafts. U. S. bonds to secure circulation. Other stocks, bonds, and mortgages. Due from approved reserve agents. Due from State banks and banks. Due from State banks and banks. Current expenses and taxes paid. Premiums paid. Checks and other cash items. Bills of other national banks. Fractional currency. Specie, viz: Gold coin	\$2, 383, 291. 25 27, 641. 05 248. 750. 00 79, 487. 53 297, 119. 57 142, 384. 67 5, 295. 87 106, 088. 34 45, 597. 27 22, 047. 94 35, 807. 90 15, 984. 00 1, 671. 13 214, 157. 95 34, 345. 00 11, 193. 75 1, 000. 00 3, 672, 443. 22	Capital stock paid in Surplus fund Other undivided profits National bank notes issued. \$223,875 Amount on hand 1,080 Amount outstanding Individual deposits Due to other national banks Due to State banks and bankers Notes and bills re-discounted Bills payable. Reserve held, 30.64 per cent.	\$1, 175, 000. 00 212, 500. 00 141, 783. 42 222, 795. 00 1, 832, 963. 81 19, 552. 81 16, 000. 00 22, 500. 00

There are ten private banks in Wyoming. Estimated capital, surplus, and deposits, \$1,500,000.

The report of the Comptroller of the Currency for 1888 contains the

following:

Summary of national banks, the important items of resources and liabilities, and the totals, etc., Wyoming Territory.

Date.	No. of banks.	Loans and dis- counts.	U.S. bonds.	Cash and cash items.	Capital.	Surplus.	Undi- vided profits.	Out- standing circula- tion.	Indi- vidual deposits.	Total.
		Thou- sands.	Thou-	Thou-	Thou-	Thou-sands.	Thou- sands.	Thou- sands.	Thou-	Thou-
871	1	77	30	15	75		3	27	55	161
872	1	99	30	26	75		5	27	81	188
873	2 2	203	60	34	125	*******	23	51	162	363
874	2	199	60	58	125	10	26	54	190	412
875	2 2 2 2	246	60	62	125	16	49	49	297	539
876	2	198	60	96	125	21	29	50	265	498
877	2	303	60	89	125	25	62	52	311	580
878	2	285	60	129	125	25	89	42	369	657
879	2 2	385	60	79	125	50	58	53	444	753
880	2	492	64	109	150	50	39	52	535	841
881	3	730	94	201	225	50	48	83	856	1, 306
882	4	991	194	219	425	78	71	127	1, 185	1, 928
883	4	1,313	219	242	425	103	95	123	1,604	2, 436
884	4	1,604	235	209	525	78	107	138	1,418	2, 509
885	5	1,861	155	309	800	140	152	140	1,744	3, 067
886	6	2, 335	180	401	900	167	193	160	1,768	3, 398
887	. 8	2, 527	224	305	1,075	210	180	201	1, 697	3, 568
888	9	2, 419	249	298	1, 175	213	115	221	1, 731	3, 654

The foregoing statement shows the growth and prosperous condition

of the nine national banks in the Territory.

The totals of the assessment rolls in the several counties of Wyoming in 1887 are as follows. The rolls of 1888 were not accessible in time for this report:

Consolidated abstract of assessment of the Territory of Wyoming, returned by the counties for the year 1887.

Acres of land and improvements, number, 5,254,468.69; value, \$4,432,225,91.

Town lots and improvements, value, \$4,017,668.65.

Swine, number, 1,184; value, \$6,010.

Carriages and wagons, number, 3,742; value, \$210,129.

Clocks, watches, and jewelry, value, \$42,931.

Musical iustruments, value, \$37,642.

Capital employed in merchandise and manufacturing, value, \$493,700.

Moneys and credits after deducting debts, value, \$978,717.

Stock in corporations, value, \$268,727.50.

Private libraries, value, \$14,245.

Farming utensils and mechanics' tools, value, \$130,778.25.

Household furniture, value, \$133,646.50.

Insurance company premiums, value, \$72,201.14.

Property of corporations, value, \$416,804.

Other property not enumerated, value, \$507,747.75.

Mules and asses, number, 2,643; value, \$118,300.

Sheep and goats, number, 421,788; value, \$637,433.50.

Cattle, number, 758,648; value, \$10,186,362.75.

Horses, number, 66,658; value, \$2,310,702.

RAILROADS.

Name of corporation.	Number of miles.	Value per mile.	Total valuation.
Colorado Central Cheyenne and Burlington Cheyenne and Northern. Oregon Short Line Union Pacific Union Pacific Laramie, North Park and Pacific.	8. 64 29. 00 125, 00 92. 34 498. 54 110. 76 13. 38	\$4,500.00 4,500.00 6,295,97 9,640.00 4,500.00 3,000.00	\$36 810.00 130,500.00 562,500.00 581,369.87 4,805,925.60 498,420.00
Total railroad Western Union Telegraph Total corporation	877. 66 1, 226. 42	78.00	6, 655, 665, 4 95, 660, 7 6, 751, 326, 2

Recapitulation by counties.

	Valuation.
Albany	\$4, 892, 956, 24
Carbon	4,097,780,60
Crook	1,811,357,50
Fremont	1,993,000.00
Johnson	3, 348, 421. 29
Laramie	10, 139, 936, 78
Sweetwater	3, 032, 054. 02
Uinta	
Total	*32, 089, 613, 13

TOTAL VOTE AND POPULATION.

At the last election for Delegate to Congress in Wyoming in November, 1888, there were 18,210 votes cast in the Territory, showing an increase of 50 per cent. in four years. This would indicate a population of over 100,000. On this subject Governor Warren, in his official report to the Secretary of the Interior, 1886, said:

Along the line of the Union Pacific Railroad and in the cities and towns a very large number of aliens, who have no vote, are employed in the coal mines and in other industrial pursuits.
 In the stock-growing region (and this comprises the larger portion of Wyoming)

(2) In the stock-growing region (and this comprises the larger portion of Wyoming) the population is scattered over a very broad area, with comparatively but few voting places, and scarcely one in fifty of those employed on the ranches go to the polls to vote.

(3) The proportion of children in Wyoming is becoming very large in comparison with many localities, the natural result of a largely "medium-age" population.

IDAHO.

In addition to the facts presented by the Delegate from Idaho (Mr. Dubois) in his remarks before the committee, your committee call attention to the following statistics and information regarding that Territory, taken from the report of Governor Stevenson, to the Secretary of the Interior for the year 1888:

FINANCIAL CONDITION.

Office of Controller of Idaho, Boisé City, October 1, 1887.

SIR: I have the honor to comply with your request, and submit my special report as controller for the past year.

as controller for the past year.

It is proper to say that the prosperous condition of the financial affairs of our Territory at this time is a subject of congratulation.

^{*}Since the foregoing assessment was made in 1887, three new counties have been provided for by law, two of which have been organized.

The effect of a wise financial policy pursued by the last legislative assembly, to refrain from making extravagant or unnecessary appropriations, is now beginning to be felt, although the Territorial expenditures for the year have increased, with our fast increasing population.

A careful examination of the operations of the treasury will serve to show that the natural tendency to increase expenditures has been counteracted by judicious legisla-

tion and economical management of our financial affairs.

The number of insane persons committed to the care of the Territory grows larger

every year.

Our Territorial prison statistics show each year an increased number of convicts,

which necessarily adds to our annual expenses.

The revised statutes and special laws of Idaho, 2,000 copies have been published during the past year, which entails an expenditure of \$4,000.

Permanent improvements have been added to the insane asylum situated at Black-

foot, which were necessary and amounted to the sum of \$4,000.

The usual expenses attendant upon the convening of the legislative assembly have

Yet, notwithstanding these and other natural additions to the drains upon our

treasury, our financial prospects are exceedingly flattering. From a careful and scrutinizing examination of the reports of the assessors of the roin a careful and scratifizing examination of the reports of the assessors of the various counties, on file in this office, I am pleased to announce that the increase on the valuation of property throughout the Territory exceeds by over \$3,000,000 that of 1886. Notwithstanding the fact that the valuation of all property is required to be made in accordance with the present law, viz, "a full cash value," still the same has been listed by the assessors and does not exceed 40 per cent. of the actual value.

Most of the assessors have assessed their respective counties by relation of value to those of an adjoining county, and the duty of adjusting the relation of assessments between those counties devolved upon the several boards of county commissioners. They have in nearly every instance quietly acquiesced in the acts of the assessor.

Experience should teach them that an undervaluation is unjust to a large portion of our tax-paying constituents, the undervaluation being confined principally to lands, live-stock, and solvent debts. This duty of fixing the valuation according to the values of the lands or other properties assessed needs additional legislation, either to enlarge upon the penalties for non-performance of official duties, or calls for the enactment of a law creating a Territorial board of equalization, which shall equalize and place a value upon each specific kind and species of property to be listed throughout the Territory.

DEBT.

Bonds, act 1877, due December 1, 1891	\$46,715.06 80,000.00 20,000.00
Amount of warrants issued for the fiscal year ending October 1, 1887 \$75, 780.72 By amount redeemed to date \$21, 640.29	. 20,000,00
Warrants outstanding	54, 140. 43
Total	200, 855. 49

The annual ad valorem tax of 34 mills on all property in this Territory, not exempt from taxation, will yield an income of \$70,000, which amount becomes due and payable on the second Monday in December.

The annual revenue which the Territory derives from poll-taxes will amount to The proceeds derived from licenses will amount to From the care of non-indigent insane. From the rents of capitol building. From other sources under special acts	1,500.00 300.00
To amount on hand in Territorial treasury	

The fiscal year closes on the first Monday after the second Monday in January, when settlements are made with the respective county treasurers and payments are transmitted to the Territorial treasurer.

A sinking-fund is created for the purpose of paying the interest on the bonds.

There is now in that fund	

16,568,09

After the expiration of ten years from the issuance of bonds, the surplus moneys of this fund will be used for the redemption of the bonds above mentioned. A surplus of \$5,000 per annum over the interest due on the bonds will accumulate in this find.

RESOURCES.

Property tax	\$70,000,00
Poll-tax	10,000.00
License	7,500.00
Other sources	2, 200.00
On hand in treasury	14,000.00
Balance on hand in the Territorial treasury over the registered indebted-	103,700.00
ness, on January 1, 1888	35, 560, 00
I have the honor to be, your obedient servant,	
JAMES H. WICKERS	SHAM,

Controller.

EDWARD A. STEVENSON. Governor of Idaho Territory.

CHURCHES.

All the leading denominations are well represented.

Episcopal.—Idaho and Wyoming constitute one missionary diocese under the charge of Right Rev. Echelbert Talbot, D. D. There are at present six parishes, located at Boisé City, Hailey, Ketchum, Bellevue, Lewiston, and Emmett. Value of church property, \$21,650.

Presbyterian.—This church has nine churches, located at Boisé City, Lewiston, Kamiah, Lapwai, North Fork, Rathdrum, Bellevue, Malad, and Moscow. Number of

members, 683. Value of church property, \$17,000.

Baptist.—This denomination has thirteen churches, located at Boisé City, Weiser, Caldwell, Eagle Rock, Blackfoot, Moscow, Salubria, Middle Valley, Payette, Riverside, Mann's Creek, and Nez Percé and vicinity. Members, 434. Value of church property, \$16,000.

Roman Catholic.—Under the charge of Right Rev. Alfons Glorieux, D. D. Churches and chapels, 15; priests, 9; convents, 2; members, including Indians, 5,000.

of church property, \$40,000.

Methodist Episcopal.—Number of churches, 9; 4 parsonages, value, \$3,300; church property, \$24,000. Number of members, about 500.

There are supposed to be about 15,000 Mormons, confined principally to the counties of Bear Lake, Bingham, Oneida, and Cassia.

PRECIOUS METALS.

The precious-metal belt of Idaho is from 50 to 150 miles wide and 350 miles long. This is not only the largest continuous or compact gold and silver region in the world, but it is believed also to be the richest. From a comparatively small area of this region, and from imperfectly and mainly only slightly developed mines has thus far been taken the princely sum of \$120,000,000 of gold and silver. Idaho has steadily advanced during the past four years from the ninth to the fifth place in the list of bullion-producing States. Every variety of gold and silver ores known to the science of mining are found in Idaho.

USEFUL MINERALS, ETC.

Besides her precious metals Idaho also has an abundance of iron, coal, lead, copper, salt, sulphur, mica, marble, sandstone, granite, limestone, and some cinnabar and tin. The Territory is therefore well equipped by nature for many industries besides those now engaging her attention. She has fron varied enough in kind and quality, and vast enough in quantity, for the uses of a great nation. Her copper ores are scarcely less abundant, and her coal fields, though but slightly developed, promise to meet all possible requirements in the near future.

UNDEVELOPED RESOURCES.

The great natural resources of Idaho are to-day practically undeveloped. Within her boundaries are large amounts of good agricultural and grazing lands belonging to the Government that are now open to settlement, and particularly in the counties

of Alturas, Ada, Washington, Bingham, Boisé, Idaho, and Cassia, besides more or less in all the other counties.

The great mineral belt of Idaho is hardly prospected, and our mining enterprises are yet in their infancy. Thousands of good and valuable quartz mines of gold, silver, copper, and lead are yet unoccupied and unlocated.

The finest water-powers in the world, capable of running all kinds of machinery,

are open to location and are unused and unappropriated. Splendid locations for grazing and manufacturing butter and cheese on a large scale can be had in almost any county, and the products would find a ready sale in our mining counties; good, fresh butter by reliable makers sells here for from 30 to 40 cents per pound.

No better place in the world could be found for the erection of mills, quartz mills,

factories, tanneries, and woolen mills than our fine water-powers now unappropri-

ated and most admirably adapted for such industries.

Building irrigating ditches to supply farmers with water on the desert lands is one of the most safe and certain investments for capitalists. Immense forests of pine and fir timber are yet held by the Government, but are allowed to be used honestly for domestic purposes.

THE SOIL OF IDAHO.

In such a vast area as is included within Idaho's boundaries, traversed by mountain ranges formed of rocks of all kinds and ages, there is necessarily a great variety of soil. For the sake of convenience, her soils have been divided into four classes,

1. Valley soil, which can not be excelled in any other State or Territory in the Union. It contains, indeed, the aggregated and condensed richness of the vast areas of vegetable growth that have been accumulating for ages on the sides of the mountains skirting the valleys. An analysis of this soil shows it to be pre-eminently rich in all the mineral and vegetable elements necessary to the growth of all the cereals, vegetables, fruits, etc., usually grown within the limits of the Territory. It is of good depth, is invariably found to superpose a gravelly soil, and is so inclined that perfect drainage can be readily and effectively had.

2. Plain and plateau soil, which contains all the elements for the successful growth

of all the cereals, containing a great amount of vegetable mold. Not less than three-fourths of the arable lands of Idaho are included in this class.

3. Mountain soil. This soil is exceedingly rich, especially in the wooded sections,

where it is black, deep, and full of vegetable mold. All narrow valleys and parks in the mountains possess this soil.

4. Alkalisoil. This is of limited extent, producing greasewood and salt grass, which cattle eat readily, particularly the young shoots. The cause of alkaline soils is now generally well understood. The rain which falls during the wet season penetrates deeply into the earth, where it gradually takes up such soluble salts as it encounters there, and as it has accumulated beneath has gradually risen by percolation through the interstices of the unconsolidated materials of the soil, bringing with it whatever soluble salts it may have taken into solution during its sojourn beneath the surface. "There is no difficulty, however," says Capt. C. E. Dutton, of the U. S. Geological Suprem. (in control of the c logical Survey, "in removing any quantity of these readily soluble salts from the soil, providing the leaching process be continued long enough; and it is usually found that lands which were originally highly alkaline, become, when reclaimed from their alkalinity, among the most fertile."

It is a well established fact that irrigation has the effect of enriching any of these classes of soils. During the irrigating season the streams are generally high and turbid, carrying in solution large quantities of vegetable mold, which spread very evenly by the process of irrigation, acts not unlike a top dressing of manure, and this

is repeated annually

General Cartee, of Boisé City, late surveyor-general of Idaho, says: "Open a trench or furrow through a newly-plowed field, and let that muddy water through it; at first it will soak through its banks, and by percolating wet the earth on each side for a distance of perhaps 2 feet; by that time there will be a lining of fine silt to the trench, and no water will go through it. You can not irrigate by percolation with this water, and you need fear no seepage from your ditches or canals. There will be a little in the beginning, but it will not last. We have to irrigate here by letting the water over the surface in a sheet, or better, little drills, such as are formed by a harrow, and the result is that we get a layer of fine silt over all the land, which is the best fertilizer we can have. Our lands grow richer by cropping, instead of poorer."

GOVERNMENT LANDS.

There are within the Territory 13,200 square miles of valley lands situated at an elevation of less than 3,000 feet; 10,000 square miles between 3,000 and 4,000 feet; 22,000 square miles between 4,000 and 5,000 feet, and 19,200 square miles between

5,000 and 6,000 feet. It will, therefore, be observed that of a total of some 15,000,000 acres of arable lands in Idaho, 8,448,000 are valley lands. The balance are uplands, or "plains," Of the total arable area, the Boisé land district, occupying the western portion of the Territory, and traversed by the Oregon Short Line, contains 3,500,000 acres. Of this, 2,500,000 acres are still open to settlement. At Boisé City is the land office for this district.

Hailey land district, in the central portion of the Territory, also traversed by the Oregon Short Line, contains about 1,000,000 acres of arable land, of which about 750,000 acres are still vacant and open to settlement. At Hailey is the land office for

Blackfoot land district, occupying the eastern portion of the Territory and traversed by the Oregon Short Line and Utah and Northern Railway, contains about 4,500,000 acres of land susceptible of cultivation, of which 3,500,000 acres are still

open to settlement. At Blackfoot is the land office of this district.

Cœur d'Alene and Lewiston land districts, occupying the northern part of the Territory, and traversed by the Oregon Short Line and Northern Pacific Railway, contain at least 2,500,000 acres of arable land, of which 1,500,000 acres are open to set-

tlement.

The Blackfoot, Nez Percé, Lemhi and Cour d'Alene Indian Reservation occupies about 1,500,000 acres of the finest agricultural lands in Idaho. It is believed that but few years will elapse before large portions of these lands will be thrown open for settlement, as the Indians are gradually becoming converted to the plan of accepting lands in severalty. If each head of a family were given 320 acres there would be supported by the settlement of these contents are largely left to the plan of acceptance of the settlement. enough of these reservation lands left to make about 7,000 farms of 160 acres each.

Here is a princely area of some 10,000,000 acres of Government lands-more than

60,000 farms of 160 acres each.

FRUIT CULTURE.

Idaho valleys can not be excelled by any region east of California for the produc-

The sage-brush lands, naturally the very emblem of sterility and desolation, are in a few years turned into the finest fruit farms with less trouble than would attend a similar transformation on the wild prairies of Iowa or Nebraska. A prominent fruit grower estimates that 25,000 large fruit trees have been set out annually for the past five years in the valleys surrounding Boisé City. Several of the orehards in this locality produce from 25,000 to 40,000 bushels of fruit each, annually. One firm dries from 30,000 to 40,000 pounds of fruit annually, and this industry bids fair to grow until at least the demand of Idaho and adjacent territory is supplied.

The fourth year's growth of apple trees in Boisé Valley has yielded 200 pounds; of of cherries, 75 pounds; of peaches, 150 pounds; of pears, 130 pounds; of plums, 150 pounds; while small fruits such as strawberries, currants, gooseberries, blackberries, and raspberries are very prolific. The growth of wood made by fruit trees, and the quantity of fruit often found loading the branches is almost incredible.

Idaho is the very Eden for plums and prunes. The trees are perfectly healthy, grow vigorously, and bear much earlier than in the States east of the Rocky Mountains, and for size, beauty, and excellence of flavor the fruit is unsurpassed in any part of the globe. Plums and prunes, especially the latter, are found to be so profitable for drying that many orchards are being planted for that purpose. There seems to be no danger of overdoing the business, as the plum and prune growing districts of the United States are very limited, and immense quantities of dried prunes are imported from Europe. The Idaho German prunes are pronounced superior to the im-

ported fruit.

The "Fruit Belt" covers all the agricultural district in Idaho, although some elevated regions are too cool to admit of the production of peaches, apricots, and nectarines. Currants of a wild variety, when cultivated, grow as large as gooseberries, and gooseberries as large in proportion. In these mountain valleys the growth of these kinds of fruits is something rémarkable. Strawberries and raspberries flourish and produce an excellent quality of fruit. Apples, pears, etc., have been grown sufficiently to insure their successful production. Many trees have been planted during the last three years, and several orchards are bearing slightly. The fruit is fair and free from worms. The trees that have been planted make a healthy and vigorous growth. It is known that cherries and plums will thrive, but the winters are too severe for peaches.

AGRICULTURAL RESOURCES.

Wheat.—Wheat of all varieties is successfully grown at all altitudes and on all soils in the arable portion of Idaho. It yields an average of 30 bushels per acre. Both spring and fall wheat are grown, but the former predominates, as there is so little snow in the lower valleys to shelter the tender sprouts of fall-sown grain. The quality of Idaho wheat can not be excelled in the world, the berry being plump, hard, and

bright, and, on account of the unfailing clear weather, rarely affected by any of the

evils common in rainy regions.

Barley.—The above, relating to wheat, is in a general way applicable to barley, but the yield averages 40 bushels per acre. The quality is such that brewers of Chicago and Milwaukee eagerly purchase it at a rate which insures a good profit.

Oats.—Oats grow anywhere and yield 55 to 75 bushels per acre. They are very heavy, generally weighing 45 pounds to the bushel.

Rye.—Rye of the finest quality is successfully grown in all localities. It is sown both in the spring and the fall, and is much used for pasturage.

Flax.—The first crop of flax was sown in North Idaho, near Lewiston, in 1878, and yielded from twenty to twenty-five bushels to the acre. Near Genesee, at M. Hensen's ranch, thirty-two bushels are raised to the acre. It is worth from \$1.25 to \$1.65 per bushel.

Corn.—Owing to the cool nights Idaho is not generally considered a first-class cornproducing region. But good crops of a superior quality are raised in all the lower

Broom corn and sorghum are successfully produced in various localities, and the raw material is worked up at a handsome profit. Idaho sorghum is especially rich in the best juices entering into the composition of syrups and sugars.

Tobacco and sweet potatoes, of several varieties, flourish in the milder belts of south-

Grasses.—The natural grasses abound, both on mountain side and in valley, hence but little attention has been paid to the cultivated varieties. But blue-grass, orchard grass, red top, timothy, alfalfa, and clover, wherever sown, have grown prolifically, and they are hardy in growth—clover and alfalfa, especially, yielding three and four crops of from one to three tons each per acre in one season. Timothy and clover have been grown together, producing grass knee high, and making splendid food for horses and cattle.

HORTICULTURE.

Vegetables.—Potatoes yield abundantly, averaging over 200 bushels to the acce, equal to the finest grown in Utah, varying in price from \$1 to \$3 per 100 pounds, according to the season. When they are well-watered they are of large size, white, mealy, and delicious. All kinds of garden vegetables, such as beets, peas, squashes, beans, tomatoes, cucumbers, rhubarb, onions, etc., are successfully cultivated. The crop is enormous, the quality good, and a profitable market is readily found for all that is not needed at home. Nearly every farmer has his garden well-stocked with all kinds of vegetables. Cabbages average 12 pounds to the head; and sweet corn, lettuce, melons, radishes, egg-plant, etc., are noticeably thrifty and superior.

CATTLE.

The official returns show a total of 442,363 cattle in Idaho in 1887, but that is much beneath the real number, which is fixed at 600,000 by those in a position to know. About 30,000 head are marketed annually, most of which are shipped over the Union Pacific Railway to Eastern markets, the balance being consumed in Idaho towns and mining camps.

WOOL-GROWING.

Idaho is making giant strides in wool-growing. From 50,000 sheep in 1880, her herds have increased to 300,000 in 1887. The profits of wool-growing are by many placed higher than in cattle-growing. All agree that the wool clip will pay every item of expense, leaving the increase a clear gain. The annual increase of 1,000, ewes, two years old and upwards, will range from 85 to 115 per cent., while the increase of flocks of all ages and sexes is placed at 48 per cent. The loss from all causes is estimated by a wijerity of the propriets have deep with whem we have concanses is estimated by a majority of the prominent breeders with whom we have conversed at 2 to 8 per cent. Few flocks are sheltered in winter, and but few receive any feed other than that gathered by themselves.

Your committee respectfully submit that the facts herein stated, taken from official reports, and the exhaustive statements made before the committee by the Delegates from Arizona, Idaho, and Wyoming (Messrs. Smith, Dubois, and Carey), printed herewith, fully establish the claims of the respective Territories to statehood.

The committee therefore report the bill back without amendment, and

recommend that it pass.

All of which is respectfully submitted.

HEARINGS

BEFORE THE

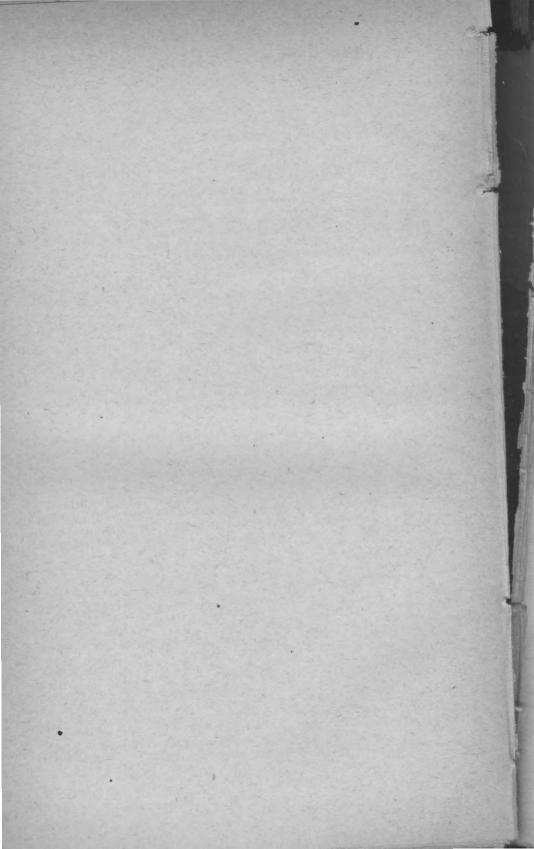
COMMITTEE ON TERRITORIES

IN REGARD TO

RECLAMATION OF ARID LANDS BY IRRIGATION,

AND

Admission of Wyoming, Arizona, and Idaho.



RECLAMATION OF ARID LANDS BY IRRIGATION.

COMMITTEE ON TERRITORIES, Wednesday, January 23, 1889.

The committee having under consideration the subject of the reclamation of the arid lands of the United States by irrigation to-day pro-

ceeded to hear statements in regard to the same.

The CHAIRMAN. Major Powell, the Committee on Territories have under consideration bills relating to the Territories of New Mexico, Arizona, Idaho, Wyoming, and Montana, in all of which there are large quantities of arid lands; and we desire to have your views in regard to the prospective reclamation of such lands and the feasibility and advisability of such reclamation, and the measures which should be taken by the Government in order to bring it about.

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 nonagricultural 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

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 being continually 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 mudflowing 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 evapo-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 headquarters 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 F6. Here is Albuquerque and here is the Jemez River [pointing]; it is a little creek below and a fine stream above. About that line [illustrat-

ing 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 So I have decided to use another unit for the measwhat they mean. urement, and I speak of an acre of water one foot deep as an acrefoot of water. So I shall give the capacity of these reservoirs in acre-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 acro

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 28,800 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 high land. 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 [speaking to some gentleman in the room]?

The GENTLEMAN. 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 irri-

gating 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 beraised 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 Power.L. 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 bench, upon which is very good land in the main; that is right here. Down here at the river is thelow 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 springs 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 Jamez,

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 Povell. 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 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 71 in New Mexico.

The CHAIRMAN. Arizona?

Major Powell. It is 2½ 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 vegitation; 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 pri-

vate 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 twentyfive 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. 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

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. 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 topograph-

ical 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 mean time, 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 ex-

pect \$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 occa-

sionally 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 that more than half the people had gone out 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 irri-

gated.

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 towards 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 rainfall 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 hardly 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 irri-

gation ?

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 Powlll. 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.

ADMISSION OF TERRITORIES.

REMARKS OF HON. J. M. CAREY,

Delegate from the Territory of Wyoming.

Hon. J. M. CAREY addressed the committee as follows:

Mr. Chairman and gentlemen of the committee, I have no prepared remarks with reference to the Territory of Wyoming, but I feel very well qualified to answer questions as to the resources of that great Territory, her qualifications for State government, the desire and wish of her people in this regard, and the capacity of the Territory to support a large population. If I should take the statements that have been made to me by men of both ends of the Capitol as a criterion to determine the feeling of public men as to the admission of the several supplicating Territories I could safely conclude that there is no necessity for making a statement of any kind to influence favorable reports and the passage of bills for their admission. The professions are very strong. So far as public sentiment is concerned, we can safely say that it is in favor of the admission, with one or two exceptions, of all the Territories as States.

There can not be any good reason urged why these Territories should be excluded from the benefits of State government. The condition of things existing in the Territories to-day is very different from that which existed thirty, forty, or fifty years ago. If there were good reasons heretofore for the admission of Territories as States with small populations, the reasons for their admission to-day are ten times stronger. Great corporations are in the Territories and are managing various branches of business. Great enterprises for the development of the arid regions have been undertaken. Railroads are spanning their domains. The people of these Territories require constitutions of their own making. At present their legislative bodies are small. Their officers as a rule have been transported, after a failure in the Eastern States in political life, to commence anew. Is it surprising that among a new people failures are signal and complete? A mature man can not readily adapt himself to the new order of things which he finds in the West; a young man may. There are, of course, exceptions to this rule. A tree should be transplanted when it is young; so should a man, if at all. Frequently we have seen a man of mature life, experienced in affairs, successful in managing men, and in promulgating and forcing through legislative bodies great measures, move to a Territory to fill a Territorial cffice, and though received most cordially by a Western people, prove unadapted to the new life and its duties.

In making this statement I do not wish to reflect, even indirectly, upon New Mexico. Though I would not be in accord with my party in doing so, yet knowing Territorial conditions as I do, I do say that if I had

fifty votes, they all should be cast for the admission of New Mexico. I can also say conscientiously, that under certain conditions, after they had been prescribed, and accepted in good faith, I would vote for the admission of Utah. You may think I am an extremist; but I believe that the General Government has visited wrongs upon all the Territories. and will continue to so inflict them if they remain in a Territorial condition. Their admission will be of untold benefit, and the Territories as States would soon furnish homes for millions of people, and would add to the dignity and greatness of our common country. There is no man who can raise his voice or utter a sentiment, justly, against the people of Wyoming. In the last census when our population was small—and I have no doubt the same rule prevails to day—we showed fewer men and women who could not read and write than any State or any other Territory in the American Union. We commenced our Territorial condition with probably less than 3,000 actual resident population. Warlike Indians were running over most of the country and life and property were nowhere secure in Wyoming. During the twenty years the Territory has been organized, we have gathered together some of the best people of the United States.

Mr. MANSUR. You do not state how many you did gather.

Mr. CAREY. I was coming to that in a moment.

Mr. MANSUR. Pardon me.

Mr. Carey. I presume our population is somewhere between 100,000 and 110,000 people. I judge this from traveling over the country, and being somewhat familiar with every portion of it. A population that is not large enough perhaps for the unit fixed for a member of Congress, but a population that is nearly double that which has been required when most of the Territories heretofore have been admitted as States.

Mr. STRUBLE. When was the last Territorial census taken?

Mr. Carey. None has ever been taken under Territorial authority. Mr. Struble. What is the population by the last census of 1880?

Mr. CAREY. I think 23,000.

There is in the Territory 900 miles of operated railroads. Before this year shall have passed it will probably have increased from 900 to ,200 miles. The Union Pacific operates a line from east to west through the entire length of the Territory. The Chicago, Burlington and Quincy Railroad Company is now building a branch into the northeastern portion of the Territory to the coal-fields, where coking coal is found. Northwestern Railroad system has already reached a point near the center of the Territory, from east to west. The Chicago, Burlington and Quincy Road has built into the southeastern portion of the Territory. This company has also located a line from Cheyenne to the northwestern portion of the Territory; also a line through the central portion of the Territory, and has purchased much of the right of way necessary for the construction of the road. The Cheyenne and Northern Railway Company has constructed its road 125 miles from the southern line of the Territory in a northwestern direction. The Illinois Central Railroad and other great railroad corporations have had corps of engineers in Wyoming locating lines of road to be connected with eastern lines.

These are not paper railroads, as all the companies named, except one, are operating railroads in the Territory. Notwithstanding we have in that Territory railroads that have cost \$50,000,000 to \$60,000,000, yet it has not been found necessary to make an assessment on all this railroad.

property in excess of \$6,000,000.

All property, including railroad property, is assessed at \$33,000,000. The actual wealth of the Territory is not less than from \$115,000,000 to

\$120,000,000, about all of which has been accumulated there since the Territory was organized.

The people of Wyoming are public spirited. They have erected a capitol building, nearly completed, that is a better building than that found in either of fifteen of the States.

Mr. Symes. Did the Government assist you any?

Mr. CAREY. Not the amount of one dollar. We have commenced a penitentiary which, when completed, will cost \$100,000. We have completed a Territorial university, the building and grounds of which are worth \$100,000. We have built a deaf and dumb aslyum; we have built an insane aslyum, which is a beautiful structure, and well adapted for the purposes of the future State probably for the next twenty-five years. When all these buildings are completed, it is not expected that the total indebtedness of the Territory will exceed \$320,000. So high is the credit of the Territory, and so careful have these people been at every step and at every stage in the growth of the Territory, that neither the Territory nor any city, county, or school district has ever defaulted in the payment of any bond or interest thereon at maturity. None of the bonds of the Territory bear over 6 per cent. interest; none have been sold for less than 5 per cent. premium, and some as high as 12 per cent. above par. Laramie City recently sold some water and sewer bonds, I think, at 7 per cent. premium. These items demonstrate that the people of Wyoming know how to preserve and protect their credit.

Of the organized counties all but two new counties have substantial court-houses and jails. Several of these have good hospital buildings. The towns and cities are well built and well governed. There are seven cities in the Territory provided with good systems for the supply of water, which also have the streets, public buildings, and private houses

lighted by electricity.

The Territory has supported a compulsory public-school system since 1869, when the Territory was organized. Every town of any size in the Territory has one or more good school buildings in which are maintained graded schools which will compare favorably with those of this city. There is not a point in the Territory where ten children of the school age are found that a school is not supported for at least eight months each year.

Mr. WARNER. What do you pay the teachers in them?

Mr. Carey. From \$75 to \$150 per month. A university, in which a full collegiate course is taught, open to all the children of the Territory, is supported at the public expense. We expended in that Territory, last year five times as much for educational purposes as the average that Congress each year appropriates for the support of government therein. Congress does not appropriate each year an amount equal to 5 per cent. of that which the people of the Territory each year raise by taxation.

The aggregate indebtedness of the counties, school districts, and cities, including that of the Territory, when the public buildings shall have been completed, will not amount to 15 mills on the actual value of the property of the Territory. The actual value of the public property is far in excess of this amount.

Professor Powell stated a few minutes ago, in his interesting address, that 20 per cent. of our land could be irrigated if the water precipitated on the mountains could be stored and utilized during the dry seasons.

Mr. Symes. I think he stated 18 per cent.

Mr. CAREY. He said owing to the altitude a portion of the water

would be utilized in Colorado and Nebraska. I listened to Professor Powell with a great deal of interest. I agree with him in the most he said. I do not agree with him as to the altitude where crops may be grown; wherever in Wyoming I have seen an attempt to grow crops, and irrigation has been possible, it has proven reasonably successful. I have seen an apple tree of the Ben Davis variety bear apples, and for two successive years, 1877 and 1878, in Wyoming, 6,300 feet above the level of the sea.

Wyoming has an officer known as the Territorial engineer, and I believe the present incumbent, so far as practical knowledge is concerned, has no superior on the subject of irrigation. I speak of Professor Mead. He has made the kind of work in which he is engaged his life study. He has had much experience under and with State Engineer Nettleton, of Colorado. Under a law enacted by our legislature Professor Mead was directed to make a careful examination of county records and to visit the several counties and determine the length and capacity of the various irrigation ditches in the Territory. He found that there are nearly 5,000 miles of irrigation ditches in the Territory. There are nearly 2,000,000 acres of land that have been reclaimed by means of the ditches. He estimates that 4,000,000 acres more can be reclaimed by ordinary means. What I mean by that is where the construction of the irrigation ditches is in the power of one person or a combination of a few persons. He then gives an estimate, if my memory serves me rightly, that 6,000,000 acres additional can be reclaimed by what he calls extraordinary means, that is, by the building of great storage basins, either with the help of Congress or the help of the State. Professor Powell and Professor Mead agree as to the quantity of land. The lands that can

not be irrigated are valuable for pasturage, mining, and timber.

While I am on the subject of irrigation, I think the committee will pardon me if I say that had Mr. Sparks, the late Commissioner of the General Land Office, had a practical knowledge of our condition and followed that broad and liberal policy which has prevailed since the organization of the Land Department, the arid regions would have made much greater progress than has been possible during the past few years. The technical construction of laws not adapted for the new condition of things found in the arid regions has prevented the undertaking and completion of many worthy enterprises that must have resulted in great good to that new country. Much, however, has been done under the

existing laws.

Mr. Symes. You are referring to the desert-land law.

Mr. Carey. Yes, sir; a ditch may be made and irrigation successfully conducted where the settler can find land properly located along a stream, but where high plateaus are to be irrigated it requires a combination of effort. Professor Powell stated that these lands were of small value until irrigated. If the desert-land law had been construed as it was for a period of five years after the law was passed, there would have been no difficulty in men combining to irrigate large bodies of these lands. Many works of great magnitude, costing in some instances a half million of dollars, would have been undertaken by our people. They did not have the money, but they could have induced Eastern capitalists to invest in the projects with a view of distributing the cost of irrigation works over the land reclaimed, so that a party owning a farm would own sufficient water to irrigate it.

Now you may ask to what extent our people have made agriculture successful. The northern half of the Territory contains the best agricultural lands, for the reason that the altitude is not so great and the

water is so plenty, and the streams are so situated that it is easy to

carry the water over the land.

The northern counties of the Territory are being rapidly settled with a very thrifty and good class of farmers. I went over much of this country three months ago and was surprised to see what success the people, especially on the east side of the Big Horn Mountains, were making with agriculture. I rode across a tract of country as big as some of the States. The water had been trained up on the top of the ridges coming down from the Big Horn Mountains. The valleys have been reclaimed. There was ten times as much grain in that country as could be consumed by the people. They need the facilities to get it to a market. The land is productive and it is a country of plenty. I was there during the thrashing season. The farmers told me they had fifteen large thrashing machines running in that section. This portion of Wyoming alone could supply all the agricultural products required by a half of a million of people.

Mr. Symes. What portion of the Territory is that?

Mr. Carey. I am speaking of northern Wyoming, but I was particularly describing the country east of the Big Horn Mountains, south of the Crow Indian Reservation. That country has been made very productive by irrigation. I saw 5 acres of ground off of which had been harvested between 600 and 700 bushels of oats. I saw a 40-acre tract off of which they had thrashed 3,200 bushels of small grain. The agricultural interests will ultimately be very large. These will develop

as rapidly as there is a demand for the products.

Now, let us turn our attention for a moment to other sources of wealth. I have repeatedly stated in that Territory that I would rather have the coal of Wyoming than all the gold and silver mines in the State of my friend from Colorado (Judge Symes), so far as the future prosperity of the country is concerned. It has been estimated by some persons that we have 15,000,000 acres of coal lands in Wyoming. We, in all probability, have one-half of that amount rich in a good quality of coal. The production of coal from the few mines developed is already very large. It will probably reach this year 2,000,000 tons. Some days during the past three months 12,000 tons have been mined and transported. This coal has become an article of commerce as far east as the Missouri River and as far west as the Pacific coast, and on the Pacific coast is competing with the coal imported from Australia. So far as quantity is concerned the coal is inexhaustible. In quality it is of various varieties of soft coal well adapted for generating steam and for domestic purposes. The demand is three times greater than the facilities at hand for its mining and transportation. To illustrate to you how rich that country is in coal, I need but say that a very careful examination recently made of a section of country 6 miles square, near the town of Carbon, by the opening of veins on the outcropings and by boring test wells, it was found that through this entire area there are veins of coal aggregating 18 feet in depth, which can be mined cheaply. Coal has been found in every county in the Territory.

Oil springs have been discovered in various localities in the Territory. The oil lands of Wyoming cover a greater area than the oil lands of the States of Pennsylvania, West Virginia, and Ohio combined. This industry has not been developed. Professor Ricketts, the Territorial geologist, reports that only eighteen wells have been bored, and of these five produce from five to several hundred barrels of oil each

twenty-four hours.

No richer deposits of soda exist elsewhere than are found in Wyo-

ming. Hematite iron ores are abundant, which assay from 60 to 80 per cent. iron, free from sulphur and titanic acid. Gold, silver, copper, mica, and other minerals are found. The mineral interest of the Territory are virtually undeveloped.

The CHAIRMAN. You stated that your present population, in your

estimation, was between 100,000 and 110,000.

Mr. CAREY. Yes, sir.

The CHAIRMAN. What, in your opinion, would be the probable population of that Territory, say two years from this time, if you have your

present increase and the prospects of statehood?

Mr. Carey. Well, we have not been boomers. Our population increases 25 per cent. every two years. Sometimes it will run slightly over; but you can figure it up with comparative accuracy what we will do.

Mr. WARNER. You will have 150,000 if you have 120,000 now.

Mr. Carey. Yes, sir; though I do not want to be understood as saying that we have 120,000 people. Under the proposed bill we would have the required population by the time the provisions could be carried out.

The CHAIRMAN. Will the prospects of statehood to your people hasten

a development of your resources and increase your population?

Mr. Carey. It would double our population. I have no doubt on the subject. If the Territories adopt proper constitutions—and I believe they will if you afford them the opportunity to do so—and are admitted as States, within the next ten years four millions of people will cross the Missouri River and settle in the new States. The East, overcrowded, will be benefited, and the Territories of to day will be an important part of the American Union.

Mr. Symes. Colorado will be included?

Mr. Carey. Colorado will get her share of the growth. Judge Symes will not acknowledge it; but Governor Routt, the last Territorial governor and first State governor of Colorado, said to me recently, "Carey, I have figured it up pretty closely, and I do not think we had at the time of our admission an excess of 60,000 people." Colorado polled at the last election 92,000 votes. Colorado will occupy in the next decade the same position Nebraska has in this; in all probability, she will have population for three Congressmen.

Mr. WARNER. Was Colorado at that time as good a Territory as

Wyoming?

Mr. BARNES. I hope you will answer this question of General Warner's as to whether, at that time, Colorado was as good a Territory as

Wyoming.

Mr. Carey. Colorado is a grand State. Go and see what her good people have done. Her resources are no better than those of Wyoming. Colorado is an older sister. Both are the children of the Rocky Mountains. I hold an official report in my hand, made by a Colorado man. We imported him and gave him an office because of the good that is in him. I am speaking of Professor Mead, before referred to. He says:

The irrigation laws of this Territory, taken as a whole, are probably in advance of any other State or Territory in the Union.

They are based upon those of Colorado and California. Mr. Symes knows the truth of this. His people are within the fold of States. We strive to enter the gate also. I read again from Professor Mead's report:

The soil wherever examined is fertile, and wherever irrigated becomes exceptionally productive. Grasses and the hardier grains and vegetables do well in all parts of the Territory. The eastern and northern portions of the Territory are able to

produce nearly all kinds of fruits and vegetables grown in the temperate regions; the lower elevation of the northern part compensates for the difference in latitude. * * *

A distinctive feature of Wyoming's irrigation is that it outstrips all the States or Territories of the arid region in the number of its streams available for irrigation.

Over two thousand ditches have already been completed in this Territory. These ditches water an area equal in extent to the whole of the irrigated district of France and Spain combined, and one-half of Italy. * * * As it is, with our irrigation system scarcely established, we have enough lands under ditches and ready for the plow to make 20,000 80-acre farms, sufficient to engage an agricultural population of 200,000 people.

I have called attention to this matter again to show the opinion a

Colorado man has of Wyoming.

No State proves the advantage of State government more forcibly than the State of Colorado. When you take into consideration everything, her surroundings, her situation at the time she was admitted as a State, being in the extreme western boundary, I do not believe any other State or Territory has shown a more remarkable growth. Horace Greeley, I think it was, said that Colorado was only adapted for the growing of Canada thistles. I visited in the very beginning the colony established by Mr. Meeker in that State when a Territory. It was as poor looking a country as ever man beheld. It did not even grow grass, but was covered with the prickly pear, so common in that country. Mr. Meeker went there full of enthusiasm; full of a theory that there could be built up a great community in that immediate section, in which there should be none of those evils which he said beset and curse most new countries; that children growing up should be entirely removed from the temptations that children are subjected to in most places. Mr. Meeker did accomplish a most wonderful work. He carried out his theory. He made the barren waste blossom as a garden; and where it was so sterile, one may now pass miles of most productive farms. He proved that the country could be made most productive where irrigation is practiced.

Mr. BAKER. Where is that colony?

Mr. Carey. On the Cache la Poudre River in Colorado. This colony led to other great irrigation projects. It was the commencement of the agricultural development of Colorado. To Mr. Meeker, who did so much for Colorado before his untimely death, should be erected a monument as eternal as the granite of the mountains under whose shadow he was massacred. His associates went to work in earnest. It was an uphill business. His people suffered much for the first two or three years; but that true man inspired them with his enthusiasm. They knew he was not laboring for himself but for the general good.

Mr. Symes. Mr. Meeker endeavored to start a co-operative society?

Mr. CAREY. Yes, and he accomplished it.

Mr. Symes. This was in Colorado.

Mr. CAREY. Yes, sir.

Mr. Symes. I would just like for you to add further to your report that this old gentleman, Meeker, who founded this colony and made a wonderful success of it, afterward undertook an impracticable thing. He was appointed Indian agent and undertook the Quaker act with them, and he was afterwards murdered and his family ravished.

Mr. CAREY. I was simply demonstrating what could be done in the

arid regions with water.

What can we do under a State government? I believe that a time will come when Congress will give these arid States and Territories land

under certain restrictions about equivalent in amount to that which was received by other States and Territories as swamp lands, with this condition, that the title shall remain in the United States until their reclamation is perfect, and that the States shall only authorize actual settlers to acquire the title from the Government. The States would reclaim large bodies of land and settle them with just such a class of settlers as are most desired. The Government would not be deprived of anything, since it is the policy not to dispose of the public lands for revenue. The means would be afforded to the States by which they could bring about the reclamation of large tracts of land. The cost of the irrigation works could be apportioned to the lands reclaimed. The settler in purchasing the land could also purchase perpetual water right, and the obligation could rest upon him and his associates to keep such irrigation works in proper repair.

Mr. WARNER. Just one moment. That idea strikes me very forcibly.

In the bill you have introduced is there any such provision?

Mr. CAREY. A section in the bill with some modification will cover the question. I have a definite plan blocked out that would cover the subject.

Mr. WARNER. It is the idea.

Mr. Carey. My plan would solve the great problem of reclamation where the cost would be so great as to render it impracticable to private enterprise to undertake it. The plan would make great agricultural States of Montana, Arizona, Idaho, New Mexico, Utah, and Wyoming. The Government would accomplish the purpose of settlement and the cost would ultimately be paid by those receiving the advantages of the reclamation.

I am speaking very hastily of the subject. I have devoted the most of my time to the agricultural future of Wyoming. I have not spoken of the permanent improvements on the farms and ranches; of the beautiful cities and towns; of her nineteen banking institutions, including nine national banks, with an aggregate capital and surplus of nearly \$3,000,000; of her churches, and of the six daily and twenty-four

weekly newspapers published in the Territory.

The matter of statehood is a matter of great importance so far as Wyoming is concerned. We want to see the promised land; we want an enabling act; we want you to put us in such a position that if we conform to the conditions prescribed we may become a State. Unfortunately, these Territories heretofore have not been admitted except for political reasons. The Territories have waited long and suffered much because one party was afraid the other party would obtain some political advantage. Had Montana been admitted four years ago, she would have been in far better condition than she is to-day. Dakota should have been made a State ten years ago. Congress would not have made a mistake to have admitted Washington Territory when she presented her constitution in 1878 with a memorial for statehood. The admission of these three great Territories would have brought increased prosperity. There is no man wise enough and no politician sufficiently astute to prophesy the fate of these Territories politically. It largely depends upon the treatment which is meted out to their people.

The man from the South and the man from the North live in a Territory but a little while before the influences of the South and the influences of the North cease, so far as politics are concerned. I have always been identified with the Republican party; but I have boasted among my good friends and my supporters in Wyoming men by the dozen who served in the Confederate army. The questions growing

out of the war do not concern our people. The party that first metes out justice to these Territories will have the greatest influence there. I have repeatedly stated that I would rather live in a Democratic State

than to live in a Territory with a large Republican majority.

The advantages of State government are very important to a man who wishes to thrive and wishes his business to prosper. A true American's ambitionis to be a full American citizen, with all the attending privileges. I have studied this question, and have examined the rules laid down for the admission of new States. Rules have been proclaimed, but not observed. Mr. Douglas said in the Kansas debate that there had been no rule so far as population was concerned. There has been no uniform law since the formation of this Government on the subject. My friend, Mr. Springer, on the floor of the House, at the last session, intimated that the rule might sometimes prevail that a Territory should have an average of the population of the several States.

The CHAIRMAN (Mr. Springer). No; I did not intend to convey that idea.

Mr. CAREY. I am glad to hear you say so; I had a wrong impression, for such a rule would work the greatest kind of hardship upon the people

of a Territory.

The Chairman. That was stated with reference to the division of Dakota; that Dakota as a whole did not have an average of population equal to the average population in the other States, and therefore it had no right to a division. I never contended there was any standard of population requisite for being a State. I think Wyoming has quite suf-

ficient now for being a State.

Mr. Carey. I thank you for your confidence in my Territory. The point I was going to make was this, that the population for a member of Congress should not be made the basis for admission. The question should be this: Will it be of advantage to the Territory and the people to admit such Territory as a State? Senator Douglas, of Illinois, said each case should be considered on its merits. Senator Collamer, of Vermont, in the Kansas debate, considered a people of a Territory desiring State government were the best judges of their qualifications for State government. Senator Howe, of Wisconsin, in the discussion growing out of the Colorado admission bill, said whenever he found a community friendly to the United States, able to pay the expenses of their own government, he would not forbid it admission; that he would sooner encourage a little ambition of this kind than discourage it.

Mr. WARNER. I presume you would not limit it to what the definition implies—that a struggling community should not have the power and burdens of a State without some indication of its future growth, of

course.

Mr. Carey. Of course. To my Territory State government would not be a burden, but it would mean increased prosperity. It is the duty of this Government to afford all of its citizens the blessings of State government where it is possible to do so. I think we are all entitled to it. I was born in one of the original thirteen States. My little native State was the first to accept and ratify the Constitution which has brought so much happiness and prosperity to the world. I have passed the best of my life in Wyoming. We of that Territory love our country just as much as you do who live in the States. We want to be one of the States in the Union. It is wise Republican and wise Democratic policy, in every instance, when you find a people in a territroial condition, prepared to support the Government, that a State,

and a good State, can be organized, to say their wish shall be gratified. Wyoming comes under this rule. What her people have done justifies such action. Her admission would at this time benefit her people and

the people of all the States.

This idea of equality of representation does not amount to very much under this Government. It is largely a theory. Representation has never been equal in actual operation. Nebraska, with her 1,250,000 people, has but three members of Congress. Mr. Dorsey represents no less than 78,000 voters. Mr. Perkins, of Kansas, nearly as many. Judge Symes's State (Colorado) may have gotten in a little while before she was entitled to admission, but that State cast nearly 92,000 votes at the last election. The young States, as a rule, are the ones that have suffered from the want of equal representation, and not the old States. Of all the legislative States, there has been but one admitted too soon. As a matter of fact the people of Nevada did not want to become a State at the time she was admitted. It was put upon them at that time as a political necessity, as a war measure. The people of Wyoming have accomplished much. They have hands willing to work for the good of the Republic. Their legislation has been broad and liberal. There is no question of race. Our first legislature, unanimously Democratic, opened the doors of her public schools to blacks as well as to the white children. Our legislature has asked you to give us State government. Ninety-nine out of every one hundred of her people are in favor of State government. They are able and willing to bear the responsibilities of statehood. I believe the American Congress can do no better thing than to say to the people of Wyoming, "You are welcome, and you may come into the house of your fathers and in full communion enjoy the blessings of State government."

Gentlemen, I thank you for your kind attention.

Mr. BARNES. You say there is no distinction in schools?

Mr. CAREY. No.

Mr. BARNES. How many colored people have they in that Territory;

how many colored children?

Mr. Carey. I can not say. I suppose there are fifty colored children going to the public schools in Cheyenne alone. You understand that I referred to this matter to show that we have a homogeneous people, that there is no conflict between different races in that Territory.

Mr. Barnes. How about the Chinese out there?

Mr. Carey. The Chinamen cut no figure. They have not claimed citizenship. We had a most unfortunate killing at the Rock Springs mines, but the question is being rapidly disposed of by the withdrawal of Chinese laborers from the mines.

COMMITTEE ON TERRITQUIES, January 30, 1889.

ARGUMENT OF HON. M. A. SMITH,

Delegate from Arizona.

Mr. Smith said: Arizona is 378 miles in width by 339 miles in length, containing an area of 113,929 square miles, or 73,000,000 acres, a large part of which is capable of producing every variety of fruit, vegetable, and cereal known to the temperate zone; mines of coal, copper, iron, gold, and silver, inexhaustible in extent; lakes of salt, springs of petroleum, and forests of pine, cedar, spruce, juniper, ash, and oak, of as great extent as any State or Territory of the Union. That part of the Territory lying north of the thirty-fourth parallel, embracing only three of our counties, is greater in area than the six New England States

combined.

Within this area and near Prescott, the capital of the Territory, justly named for one who made Mexico a land of fancy and romance rather than of fact, there is a tract of timber land called the Mogollon forest, which covers an area of 10,000 square miles, or 6,400,000 acres, being, with probably one or two exceptions, the most extensive body of timber in the known world, and it has never yet felt the stroke of an ax. The timber belt of northern Arizona alone covers an area of 20,000 square miles, or 12,800,000 acres. In 1886 ties were sawed at Flagstaff for 1,500 miles of railroad in Old Mexico, and from this point great quantities of sawed lumber are yearly shipped into California and New Mexico, yet the fringe of this forest's mantle has not been torn. The pine grows to the height of 150 feet, with a diameter of 5, 6, and 8 feet. It grows as straight as a die, and the first branches are from 50 to 75 feet above the ground. The ash, black walnut, and scrub oak are found in the lower valleys and ravines. Besides these are the cottonwood, alder, cedar, manzanita, maple, mesquit, wild cherry, and iron-wood, the last a tree peculiar to Arizona and Sonora. It is hard and brittle and takes a beautiful polish. When dry it can scarcely be cut with an ax, and has a specific gravity greater than water. It creates a furnace heat equal, it is said, to the

All this northern portion of Arizona is well grassed, and seems the natural home of cattle and sheep. Our death-rate among stock is the very minimum of the earth. In other Territories the extreme rigor of the winter makes cattle-raising much less certain and the business more hazardous than with us. Our winters are not severe, the ranges are not crowded, and marketable steers can be found on the range at

any season of the year.

Taking Yavapai County alone—as it happens to be most convenient to get the assessment-roll—as a basis to estimate the herd increase, and

we find the following results:

Total number of cattle in county: 1882, 34,243; 1883, 49,132; 1884, 64,008; 1885, 89,688; 1886, 116,286. This year (1888) there was

assessed in that county, which of course shows only about two thirds of the actual number, 12,447 horses, 86,262 sheep, 145,058 cattle.

Now, if you take the number of cattle that have been exported or shipped to market, it is largely greater than the number imported into the country, which shows the marvelously low death rate in that country. Not more than half the grazing lands in northern Arizona are occupied, and unless a water supply is developed a large area will forever remain vacant.

The average increase on a flock of ewes is 70 per cent. per annum.

Sheep are shorn twice a year, spring and fall.

POPULATION.

The census of 1876 showed a population of 30,191. The United States census of 1880 gave it as 40,440. The census of 1882 showed the population by counties as follows:

Counties.	Population.	Counties.	Population.
Yavapai Pima Coohise Maricopa	27, 680 17, 427 9, 640 6, 408 6, 816 4, 229	Pinal	3, 362 3, 922 1, 910 1, 582
ApacheGraham	4, 229	Total	82, 976

Showing an increase of 100 per cent. in two years.

The CHAIRMAN. Is that the census of 1882?

Mr. SMITH. That is the census of 1882.

The CHAIRMAN. I thought probably that might have been a typo-

graphical error, because there was one authorized in 1885.

Mr. Smith. This was authorized by the Territorial legislature for the purpose of giving to the counties of the Territory their proper representation in the legislature, but I think it is proper to say to the committee that I think the count of the county of Yavapai is overdrawn and should be somewhat reduced.

Mr. STRUBLE. How do you account for that?

Mr. SMITH. I think it was probably done in order to obtain a large Territorial representation in the legislature. There has been no census taken since 1882, but that the population since then has very largely increased there can be no doubt. Our increase is not born of booms or characterized by transcient dwellers in wandering homes, which is a common feature of nearly all new countries. Our increase is permanent. The great dangers and hardships surrounding the early settlers in Arizona forbade the presence of adventurers and tramps. It was veritably a "dark and bloody ground." Their history is a story of bloody defense against Indian warfare, a hand-to-hand battle between "civilization and savagery."

The scene has changed. Peace and quiet are everywhere supreme. The cattle are herded on the plains; the miner prospects the mountains for hidden treasure; the farmer pursues his daily avocation with no deadly arms at his side and with no fear in his heart. Arizona's future is assured. Life and property are as safe there as in this city. Law is supreme. Her population, by every rule of virtue, education, property, patriotism, and industry, fills to the fullest measure every

requirement of citizenship.

The population is largely native-born and has less unworthy and

objectionable characters in it than has any other State or Territory of this Union.

I should say here that we exhibit a much larger ratio of native-born people in Arizona than in any other Territory in the Union.

The CHAIRMAN. Do you mean native-born as distinguished from

Mexicans?

Mr. SMITH. I mean by native-born people who were born in the United States and are living there.

The CHAIRMAN. That includes the Mexicans?

Mr. SMITH. Yes, sir; but we have a very light Mexican population in Arizona, because, you see, that was the ground over which the Indians had complete control.

Mr. Symes. What do you say the population of Arizona is now?

Mr. SMITH. I say the census at that time shows 82,000. I estimate the population of the different counties at the very fairest and most conservative way I can make it, as I do not wish to overdraw it, at about 100,000 people.

The CHAIRMAN. At this time?

Mr. SMITH. Yes, sir.

Mr. Dorsey. Do you take a school census—a census of the children? Mr. Smith. Yes, sir; we have a census of the school children; I will reach it after a while.

Mr. Dorsey. You base your population upon that very largely.

Mr. SMITH. No, sir; we have a better means of ascertaining this, as we have a registration of voters. True, it requires a citizenship of six months in the Territory before you are entitled to vote, but from this registration we can make a fair estimate. Knowing I was to come before this committee, I wrote and obtained four or five of these registers, and from the numbers in the registration of the counties, and knowing also the habits of the people and the distance from the places of registration, I know that great numbers never appear on the registration rolls. It has been largely contended that Arizona has from 115,000 to 120,000 people, but I do not think she has that; I think 100,000 is a liberal estimate.

Her people can safely take care of themselves. Having known injustice and experienced despotism in government, they know how to

do equity and maintain freedom.

But it is not my purpose here to detail the daily crimes which is heap d on these people by Federal caprice and power, but to convince this committee of Arizona's ability to maintain an economical State government. Her population, at a fair estimate, is sufficient for the purpose.

But in regard to this territorial form of government, I do not propose to spend the time I should require to discuss it, and I will refer you to the argument made by Mr. Toole on the floor of the House. That speech will always stand as the model story of our wrongs.

TAXABLE PROPERTY.

There has been a wonderful increase in the taxable property of Arizona. In the estimate the vast mineral wealth is excluded, for mines are not taxed. By the Report of the Secretary of the Interior for 1888, we find that—

In 1876 the taxable property of Arizona amounted to \$1,400,000, and during the past ten years it has augmented \$24,200,000. A noticeable increase of 33 per cent. has occurred in the taxable value of cattle in the past two years. The aggregate value of taxable property in the Territory is estimated at \$75,000,000.

SETTLEMENT OF LANDS.

There can be no stronger evidence of the rapid and permanent growth of a new country than the settlement of its lands. In this regard Arizona is not lagging behind any of her sisters in the race for independent statehood.

I take the following from the statement of entries received and accepted by the United States Land Office in the last fiscal year:

Kind of entry.		Acreage.	Amount.
Original desert-land entries Original homestead entries Original pre-emption entries Original pre-emption entries Original pre-emption entries Original mineral applications Commuted homesteads, final proof Final homesteads, final proof Final desert land, final proof Excess Military bounty land warrants, Mineral protests Limber depredations	314 302 289 294 111 26 33 32 31 68 17 29 3	180, 932. 63 45, 015, 78 43, 294. 85 44, 100. 00 2, 670. 69 287. 36 4, 799. 74 4, 115. 23 11, 848. 48 9, 060. 66 32. 80 462. 83 320. 00	\$73, 436, 2 6, 024, 3; 3, 886, 0; 882, 0; 33, 0; 260, 0; 11, 849, 3; 296, 7; 11, 848, 4; 21, 728, 0; 2, 365, 0; 12, 0; 30, 0; 102, 0;
Total	1, 453	295, 841, 05	132, 804, 20

Mr. Symes. If I do not interrupt you, have you any statement here that shows the different character of property that compose this

\$75,000,000 ?

Mr. SMITH. I have nothing here to show except that I can say that all the property is made up in the Territory of Arizona of farms and their improvements, of agricultural interests and water canals and the stock, cattle, sheep, hogs, horses, etc.; just like the property of any pastoral community, with the added impetus of the mines and the conse-

quent speculation resulting therefrom.

Now, all this has been done in one year in spite of alleged Mexican land grants which are spread over 10,000,000 acres of our best land, and in the face of every obstacle that the Federal Government has thrown in the way. While some decency has been shown the other Territories in the matter of a survey of public lands, Arizona for years has been neglected, and I am constrained to believe intentionally neglected, through honorable influences acting on those having the distribution of the money for these surveys in hand.

Mr. STRUBLE. You say "honorable influences."

Mr. Smith. Yes, sir; I think they were induced not to do it, fearing the land will be stolen if it is surveyed; therefore they do not survey it. If this is not true, why is it that during last year the following acreage was surveyed and examined and accepted:

	Acres.
Idaho	161, 213
Dakota	
Montana	
New Mexico	
Washington	
Wyoming	
Arizona	

Not a single acre of that land has been surveyed in the last twelve years.

Mr. Symes. Let me ask you a question. Do you attribute that in

a measure to the influence of the owners of grants?

Mr. SMITH. No; I think it is an influence emanating from men who are largely interested, and who are influenced in their efforts to save the public lands from what they conceive to be plunderers. I think it emanates largely from the Public Lands Committee, to be frank about it, who are opposed to the survey of the public lands until they could enact a public land law.

Mr. Symes. Why should the Public Lands Committee object to the land being stolen in Arizona any more than in the other Territories?

Why do they allow such large surveys in the other Territories?

Mr. Smith. This is the way: Congress appropriates so much for surveys. The Public Lands Committee has nothing to do with the appropriation. This money is authorized to be distributed by the Department, and Arizona does not get any of it. Why, I do not know.

Mr. STRUBLE. Then do you think you have been charitable in char-

acterizing this influence as honorable?

Mr. SMITH. I think they are purely honorable.

Mr. STRUBLE. I mean free from any influences to those gentlemen

arising from owners who may be interested there.

Mr. SMITH. If such is the case, I never even thought of it in that light. I think they are all honorable men, being animated by what they conceive to be the best thing to be done in the case.

Mr. STRUBLE. Arizona seems to be singled out in some exceptional

manner in the policy of the Interior Department.

Mr. Smith. I just give this to show that in spite of our position and

all this we are still progressing.

If fairness had been shown in this matter a much greater number of entries would have been made. Many of our people have been for years living on unsurveyed lands, and have no means of fixing their boundaries or obtaining any sort of title above mere possessio pedis. The surveyor-general of Arizona, in his last report, asserts that there is now on file in his office at Tucson desert land declarations for filings on unsurveyed land embracing 61,415 acres; no possibility of making a title of any kind; and just simply permit the claimant to file his pipers and declare his intention to take this land at a certain place if the Government ever surveys it. That is the thing she has been fighting against. That is one of the reasons why her advancement has not been more rapid than it has.

True, the claimant is mercifully permitted to hold desert land without living on it, but an attempt was made in the Committee on Public Lands, when the bill recently passing the House was under consideration, to deprive him of any earthly chance to reclaim it by forcing him to live without bread or water in order to acquire title. Positively that was one of the provisions, that he had to live on that desert land, and I went before the committee and asked them to strike it out. They actually provided that a man should live on that desert land, and I said to the committee, "Where is he even to get the water to wash his face in the morning? This man would have to go 40 or 50 miles even to get the water to wash his face or to water his stock or anything of that kind." And so they concluded that it would prob-

ably be a little hard on him.

AGRICULTURE.

I shall not here weary you, gentlemen, by attempting to portray the future agricultural power of this much-slandered land. If I should tell

you the truth you would not believe me; should I tell only half of the truth I would be accused of exaggeration. Her possibilities are limitless. Her recent developments, made by Lieutenant Cushing under authority of the Smithsonian Institution and the generous patronage of Mrs. Hemingway, of Boston, prove that ages ago—yes, ages beyond the dawn of history—the Salt River Valley alone contained a population of 300,000 souls supported by agriculture. These people tilled the soil and relied wholly on irrigation for a harvest. Their ancient water-ways can yet be plainly traced in the desert, and this fact alone is a sad commentary on the boasted progress of this age. If out of the mouths of babes and sucklings divine truths were to be learned, would it not be well for this Congress to give some heed to the indelible lessons of prehistoric man?

Mr. Symes. I suppose, Mr. Smith, you will have to admit there is

just a little theory in that, that is not absolute demonstration.

Mr. SMITH. If you will read the reports that Lieutenant Cushing has made you will see. I think he has made fair estimates of the number of canals discovered and the cities exhumed. There has been one Zuni city exhumed near Tampa, a Mormon settlement on the Salt, which shows there could not have been less than 30,000 people, and this was right out on the plains covered deeper than this ceiling with sand and lava:

In his recent report the governor of Arizona very truly says:

The valleys of the Colorado, Salt, Gila, San Pedro, Santa Cwz, and Verde Rivers contain as rich bottom land as the world affords. In the valleys of the Salt, Gila, and Colorado there are fully 2,000,000 acres of arable land. These rivers carry abundance of water to reclaim these lands, but canals and storage reservoirs must be constructed. Within the last few years \$2,500,000 have been expended in Arizona in constructing irrigating canals, and in the next year at least \$1,500,000 more will be expended. Great activity and enterprise is being shown through the entire southern portion of the Territory.

The Salt River Valley alone has 200 miles of such canals, having under them 225,000 acres subject to reclamation by them, and canals under contract not yet completed about 150,000 acres more.

The Florence Enterprise, a trustworthy newspaper, says the follow-

ing of the Gila Valley:

The lands about Florence are irrigated by a dozen separate canals and ditches, which receive their supply of water from the Gila River. When the Florence Canal is completed the aggregate amount of land upon which water can be placed will exceed 200,000 acres, all of it capable of being brought under a state of cultivation that will establish its value not less than \$100 per acre. Another source of water supply, by means of large storage reservoirs, is shortly to be developed, which will nearly, if not quite, double the quantity of land subject to irrigation.

On the Little Colorado, in Apache County, there are 20,000 acres under cultivation, while on the Verde, in Yavapai, about 3,000 acres

have been reclaimed.

This is truly a land of wonders in its production as well as its scenery. South of the thirty-fourth parallel all semi-tropical fruits grow to perfection. It is the natural home of the olive, the fig, the orange, apricot, and pomegranate. The vine nowhere so flourishes. Our fruits are frem two to four weeks earlier in the market than the California product. Fruit culture has passed the experimental stage and is already a source of rich revenues. Twenty-two thousand orange trees were this year planted in the Salt River Valley. Think of it—southern Arizona produces to perfection oranges, almonds, quinces, pears, peaches, figs, pomegranates, apricots, olives, nectarines, pea-nuts, plums, dates, prunes,

pecan nuts, apples, grapes, strawberries, raspberries, and every kind of melon.

All of these can be seen growing on one farm and growing in a luxuriance that is absolutely amazing. Water-melons, for instance, and cantaleups are of the finest and grow larger than in other countries. We certainly have water-melons larger than the water-melons raised in Georgia. I have frequently found them from 50 to 60 pounds in weight.

Mr. STRUBLE. How about their palatableness? Is that all right?

Mr. SMITH. It is just the finest.

Mr. Symes. One advantage about having water-melons of that

weight is the boys can not steal them.

Mr. SMITH. No, they can not steal them without a block and tackle. It is pronounced by experts the finest grape and wine country in the world. Dr. DeBarth Shorb, the great wine-grower of California, has gone into Arizona and bought large tracts of land, and contends, in an article which I saw from him the other day in the public press—and he has given much of his time to France and Spain and even Germany, where different kinds of wine are made—and he says that on the Salt River and Gila River, and Colorado River valleys it is the finest wine country in the world. There can be taken two crops of grapes from the same vive in a year. I have seen raspberries picked from the same vines twice a year, in May and in November. There every day in the year you can get vegetables from your garden. Geraniums bloom in the open air all the year round. The roses are clambering over the tops of the houses in a prodigal profusion. Anywhere that water can get vegetation springs up instantly, and grows so that you can almost see it in its growth; that is true. This is no exaggeration in the world. We have a great growth of trees in the town of Phænix. When that town was started there was not a tree in Phœnix, and in seven years that town is absolutely embowered in trees. They are 60 feet high and as large around as this (measuring with his arms), and they are only seven years old.

The CHAIRMAN. As large as a flour barrel.

Mr. Smith. I mean just what I say.

The CHAIRMAN. What kind of trees are they?

Mr. SMITH. They are cottonwood. Their growth is attributed to the warmth of the climate, the richness of the soil, and constant moisture.

Mr. WARNER. Is there not some danger of these trees crowding each

other !

Mr. SMITH. They are planted pretty far apart, as we are afraid that in their rapid growth they might catch the boys as they run between them.

The CHAIRMAN. That would be a boycott.

Mr. Smith. All this seems to be wild exaggeration, but it is a fact. It is the very richest soil naturally. Of course, its exterior is barren hills, flat mesas, gravelly and sandy, with scrub bush and cacti and this mesquit and grease wood and that kind of vegetation that can live on a rock without any water. And this will remain a barren desert unless you can bring water to it. This is soil that has come from the erosion of the mountains, having been swept down into the valleys from the mountain sides. These valleys can be irrigated easily, and they are as rich as any in the world. Now, if you will read the reports of the governors of the Territories, who do not stay there long enough to catch the Western way, and get them to give you the actual truths, you will find it just

as I have stated in regard to my own Territory. By their reports, by the reports of the newspaper and everybody who has actually seen that Territory and observed it and watched its development wherever the water reaches or springs are, you will be sure of the fact that just as soon as water can be obtained that vegetation will grow at any time, and to a richness and extent elsewhere unknown.

Mr. STRUBLE. What is the range of the thermometer during the

warm months?

Mr. SMITH. I had data last night which I copied from the report of the Signal Service, but I left it on my table; but I can tell you about the weather there. There is no denying the fact it is hot in the summer. The man who says it is not, prevaricates. But it is not a heat that you feel as you feel it here. I have been in 118 degrees in the shade——

Mr. Symes. I have been on the desert when it was 123.

Mr. SMITH. I have sat for hours when the thermometer showed 118 degrees in the shade, and I have suffered less under that heat than I have suffered in a New York hotel in the summer time at night.

Mr. STRUBLE. Your nights there are comparatively cool?

Mr. Smith. There is not a night in the year in which you do not recuperate the lost energies of the day. You sleep soundly, as the nights are cool and pleasant. While the thermometer shows such a heat, you can take a team and drive it 50 or 75 miles right across the plains in the dust, and I never knew a horse to have the thumps, and I never knew of a case of a man having a sun-stroke. If perspiration starts, the rapid evaporation causes a cooling sensation to the face. There is not one-hundredth as much suffering from the heat in our climate as there is in the city of Washington. It is the best climate in the world.

Mr. WARNER. If you did not see the thermometer, you would think

it was cool.

Mr. Smith. You would have to look at the thermometer in order to

I can not go further into this, but refer the committee to the various reports of the governors of Arizona, to the daily press of the Territory, and the evidence of any and all who have studied that country by actual observation. Only this morning I clipped the following true account from the Gazette, published at Phœnix:

Last March the Hall brothers, at their ranch under the Enterprise canal, sowed their fields in wheat and barley, intending to cut it for hay. Ten acres of it ripened faster than the rest and was out for wheat. The ground was again planted with Egyptian corn, which came up rapidly, and was cut for fodder. This crop was followed by a volunteer crop of wheat, which matured finely, the heads filling out perfectly. This last crop was cut for hay, and yielded one and one-half tons per acre.

Thus it will be seen that three full crops were raised on this piece of ground between March 1 and January 20. What other country on the face of the earth can

equal this?

RAILROADS.

Arizona is much in need of railroad facilities. At present the Territory is traversed through the extreme south by the Southern Pacific; through the center by the Atlantic and Pacific. There is also a road running from Clifton to Lordsburg, N. Mex., and a line from Prescott to the Atlantic and Pacific, and a line from the Southern Pacific to Phænix, and a line from Benson, on the Southern Pacific, to Nogales, on the Sonora line, making in all over 1,050 miles.

If these roads were taxed at one-half their cost price it would largely swell the estimate of our taxable property.

Mr. SYMES. Why do they not pay it?

Mr. SMITH. Because they claim exemption under this act of Congress. I do not think the Atlantic and Pacific has ever paid it.

Mr. STRUBLE. Can not you enforce the payment of the tax by judi-

cial means?

Mr. Smith. They are attempting that, but you know how a rich corporation can fight. They are only assessed by counties, and counties, you know, want to pay their officers. The railroad says, "I will not pay it." We say, "You have got to do it." The railroad says, "All right." You get a process and go into the court, and then you go from that to the supreme court of the Territory, and go from there to the Supreme Court of the United States, and the county finds itself at the end of six years with all the taxable property and the debt accumulating in favor of the county, but no cash to run the county expenses; and the result of that is that they pay it pretty much as they please, or not at all unless they please.

Mr. Symes. Then I understand the reason you have not wanted the

railroads taxed is that the courts have not found against it.

Mr. SMITH. The courts have decided in our favor in that matter. I remember seeing a case here in regard to Mohave County and I notice the Supreme Court of the Territory decided in favor of the county and against the railroad.

I think the assessment never exceeds \$6,000 a mile. Railroads will follow States. North and south lines in the Territory will soon be built and thus open up to the markets of the world our vast coal fields and

lumber forests.

This part of the desert [illustrating on the map] is where I am speaking of. This is desert here further down. Over here, just about the thirty-fourth parallel, is the country that has not been settled up as yet and where I stated this timber has not been touched. This is the finest timber land in the world. People have gone in there and seen it but they have no roads to bring it out. We even have no common wagonroads to go in there. It is far removed off the great roads of commerce. It has not been developed at all.

Mr. Symes. Is any road projected or survey made to that part of the

Territory?

Mr. SMITH. No, sir; all the roads projected are through here and cut what is called the agricultural part of the country at present.

EDUCATION.

Arizona expends more money per capita on its public schools than any State or Territory in the Union. Its laws are liberal, extending

school privileges to the most sparsely settled communities.

Anywhere in Arizona where there are five children of school age and far removed from any other school, a teacher is sent there with pay from \$40 to \$60 a month to teach these five children. Education is not neglected. The people are alive to it and tax themselves heavier for it than any other people in America. The minimum number of children of school age required for a school is but five, and there are two hundred school days in the year.

Nothing of a sectarian nature is permitted to be taught. The usual English instruction is given, reaching in mathematics to geometry, and such foreign languages are taught as the Territorial board of instruc-

tion may prescribe. We have enrolled 10,000 children in the public schools, with nearly 200 teachers employed. I will close this part of my remarks by reading from the last annual report of the governor.

In public education Arizona has always been advancing. There has been an increase in the enrollment and average attendance in the public schools during the crease in the enrollment and average attendance in the public schools during the past year. The public-school system of Arizona is a subject of pride to all of her citizens. School advantages are freely offered to every child and in every part of the Territory. Paying higher salaries than any State or other Territory, she also requires a higher standard of ability in her teachers. The public schools are supervised by a Territorial superintendent of public instruction. There is also a Territorial board of education, consisting of the superintendent of public instruction, Territorial treasurer, and the governor, whose duty is to adopt rules and regulations for the government of the public schools and libraries, devise plans for the increase and management of the Territorial school fund, prescribe and enforce the use of uniform series of text-books and course of studies, grant educational diplomas, and revoke, for imof text-books and course of studies, grant educational diplomas, and revoke, for immoral conduct or evident unfitness for teaching, Territorial diplomas. The probate judge of each county in the Territory is made ex officio county superintendent of the public schools for his county. His duty is to apportion the school moneys to each district of his county, to draw the necessary warrants on the county treasury for expenses against the school fund; enforce the course of study, the use of the text-books, and rules and regulations for the examination of teachers, as prescribed by the proper

authorities.

The Territory is divided into school districts, which are presided over by three school trustees, who are elected at a special election, and whose duties are to generally superintend all school matters within their district. The public schools of the Territory are maintained by a levy of a tax of 3 cents upon each \$100 value taxable property, collected and paid into the Territorial treasury as a special fund for school purposes, and then apportioned to the respective counties. The school year begins on the 1st day of July and ends on the last day of June. The Territory has also in successful operation a normal school, located at Tempe, Maricopa County, and has endowed a university at Tucson, Pima County, which is not as yet constructed.

All moneys according to the Territory by the sale of personal or real property of an

All moneys accruing to the Territory by the sale of personal or real property of an escheated estate, or from the rents or profits of lauds and tenements held as escheated, are payable into the school fund, as also all moneys arising from fines, forfoitures, and gambling licenses. By her liberal and progressive system of public schools, Arizona is diffusive knowledge among her visits and progressive system of public schools, Arizona is diffusing knowledge among her rising generation, and preparing her youths to in-telligently assume the duties of American citizenship when clothed with its cares

and responsibilities.

PUBLIC BUILDINGS.

Arizona has never received one cent from the Government for the erection of a public building. All were built and are owned by the Territory. They consist of a territorial prison at Yuma, a large and commodious insane asylum at Phœnix, a normal-school building at Tempe, and a splendid university building at Tucson, now reaching completion. Nearly all of the counties have fine court-houses, which would do credit to any county in any of your States. Commodious public-school buildings and safe jails. Every town of any size has from one to four churches. Thus it will be seen that we are fully abreast the times and are second to no State in this Union in morality, education, and public spirit.

MINERAL RESOURCES.

Arizona is beyond question the richest mineral country in America. Not a mountain range yet prospected that does not contain veins of the precious metals. Ore is found everywhere. Gold, silver, and copper mining is successfully pursued. Wells, Fargo & Co., the express company of the Western States, report the yield of gold and silver the last year at \$5,771,555. Of course, this is far below the actual product. That company's estimate is based on its shipments, and makes no note of the immense amount of silver ore freighted from Arizona to El Paso, Pueblo, and other reduction works without the boundaries of Arizona.

There is no limit on her power to produce copper. What she may produce has been settled by the syndicate. At Bisbee is found perhaps the greatest, as it certainly is the richest, copper deposit yet discovered. The possibilities of that camp is simply limitless. Last year without half trying she produced 9,379,949 pounds of copper. This, added to the sum of the output of other copper mines, swells the copper product of Arizona for 1888 to the enormous amount of 34,000,000 pounds in round numbers, as estimated most conservatively in the following table:

Copper Queen.	9, 379, 949
Copper QueenOld Dominion	4,870,000
Arizona Copper	7, 133, 188
Detroit .	5, 420, 224
United Verde	3, 200, 000
Other mines	3, 196, 639
(D-4-1	23 500 000

Mr. SYMES. Have you the value of it ?

Mr. SMITH. No, sir; the value of it runs from 17 to 18 cents per pound.

Mr. FORD. Is it up as high as 17 cents now?

Mr. SMITH. Yes, sir; about that.

In the production of these metals she far outstrips every Territory except Montana, and when fully developed she will stand the peer of her now peerless sister. I know and you all know that metal alone will not make a great State; but when its great bulk is added to a limitless supply of coal, timber, live stock, and productive farms under the wise management of a progressive people, nothing demanded by statehood is found wanting. My prophecy to you may seem the wild imaginings of a fitful dream, but I still affirm that, if my days are extended to the fullness of their present promise, I will see Arizona the proudest, richest, and happiest State in this matchless union of sovereignties. The possibilities are there. It requires nothing in the world except fair treatment. As Mr. Toole said the other day, "Take off her handicap and give her a chance." We are to bear the burden of it, and not Congress.

I have not the time to dwell sufficiently on its climate. Enough to say is, that if you had it here and it would leave when I quit speaking you would bear this pain for that pleasure through many days without complaining. By actual statistics it is the healthiest part of America. We never discuss the weather there, for we never have any weather to discuss. It is worth while to change your home to live in that land. It is always pleasant, sunshiny days and lovely, clear, cool, cloudless nights. Every element conspires to make it the home for happy people. You can add to the sum of human happiness in doing justice to your common country by admitting Arizona as a State under the provisions of the present bill. I only regret that I am unable to present her claim to statehood with the convincing force that her merit

deserves.

It is a shame that these blots on our national map, called Territories, should longer remain. Every one should be wiped out. They are stains on the character of the Republic. Their existence refutes every boast of our free institutions. In them is denied to a million of your brothers and friends even a shadow of self-government. What if we should by the admission of Arizona add three votes to the electoral count? We will only have three at the succeeding election, when by population we would be entitled to six.

What if a State is admitted short of the unit of representation on the floor of the House. Time more than equalizes that temporary advantage, for before the recurring census the new State will be entitled to three times the representation allowed her. Look at Kanass, Oregon, Nebraska, and Colorado. Think you that the last ten years of their deficit in representation has not overpaid the excess at the time of admission. So will it be with all these proposed States. We bear the burdens which statehood imposes, not you; we pay the taxes, not you. If we are willing to assume it at our own expense why should you object to our taxing ourselves for our own support. There is to-day no county in Arizona that does not pay more to maintain itself than the Government of the United States appropriates toward the maintenance of the whole Territory.

Yet for this generous gift, for a few thousands a year, you claim the right to say we can not even pass an attachment law without your con-

sent.

Mr. SYMES. An attachment law?

Mr. Smith. I will say any law, even an attachment law, or a law of marriage and divorce; any law touching any contract. It must come before Congress for Congress to say whether it is exactly suitable for that condition of country and people.

Mr. Symes. Let me understand you here. Your laws are valid without Congress affirming them, but Congress has power to annul them.

Is that your judgment?

Mr. SMITH. It is just simply this: The laws are nothing until Congress affirms them or consents to them by silence.

Mr. STRUBLE. Your idea is that the laws made by the legislature

never have full force and effect till affirmed by Congress.

Mr. Smith. Not exactly. How has that been done? Why, because it has been interpreted in that way by simply saying unless Congress does object to a law the law shall remain valid and they call the inaction of Congress acquiescence in the law. So of course the natural interpretation of it and condition of things at the time show that idea, that every law is valid unless Congress expressly says it is not.

Mr. CAREY. You can also state that the men who as a rule approve

or disapprove are invariably non-residents.

Mr. SMITH. Yes, sir; and know no more about it than the other peo-

ple of this country know about it.

Then, I ask, whence originates your alarm about admission of these Territories? Will you be injured by it? Is the paternal feeling so strong in your breast that you are giving us probation on the line of economy? We know that lesson. We have only spent our own; you gave us nothing to spend; we have got none of your money. Of all your appropriations for rivers and harbors and public improvements search the records of this Congress and see where Arizona has received a cent from this Government since she was separated from New Mexico, except the pay of United States marshals, which is paid everywhere in America, and the pay of Federal judges, which is paid everywhere in in America in the same way, and the pay of the legislative body at the beautiful sum of \$1 a day less than they can possibly live on in any town in the Territory. This is what she has gotten. No public building has been erected, nothing has been done, and you must watch us when we are endeavoring to become a State; yet in spite of all these drawbacks we have still pushed ahead and we are still going ahead, increasing the Territory in wealth and population.

Your misdirected mercy would have been sweet in our hour of need,

but it came not. We now only ask the charity of justice at your hands,

and we trust we shall not cry in vain.

We have really got everything that goes to make up the State. Of course we have not the population required by the unit of representation, but where do you get that? What State has ever had it?

Mr. STRUBLE. It is in our present law, I think, as stated by Mr.

Joseph, vol. 17, page 28.

Mr. Joseph. Yes; that contains the ratio of representation.

Mr. WARNER. I should say for one that that should not control me.

Mr. Smith. In regard to population?

Mr. WARNER. Yes, sir.

The CHAIRMAN. What do you say in regard to the prospective population of your Territory with the prospect of statehood in two years from this time? What would you say would be the population in the census of 1890 ?

Mr. Smith. I think there is no question in the world that two years from this day, with the prospects of statehood and the evidence that these difficulties will finally be settled, I do not believe the population would be less than 200,000. There has already been an increase of 50 per cent. in two years of her history.

Mr. Symes. There is no doubt about its being 150,000?

Mr. SMITH. Not a particle in the world. There will be in two years 150,000 residents of that Territory; not tramps or travelers, but people who anchor there.

The CHAIRMAN. What do you say would be the population with the

favorable conditions you have given in the census of 1900?

Mr. Smith. It is impossible to estimate it. I would think if a proper land policy is pursued there our population will amaze the world. think that land in the fruit belt should not be allowed to be held in holdings larger than 60 acres at the outside, if the United States irrigates it, because 40 acres of land by irrigation will be more productive than 160 acres of land not irrigated in this country. More can be raised on that and more actual money taken from it.

Mr. FORD. Does this proposition to expend \$350,000 for irrigation

affect your Territory ?

Mr. SMITH. It is looking towards that.

The CHAIRMAN. I want to call your attention to the fact that in the frequent objections made to the admission of these Territories they cite that Nevada's population instead of increasing had diminished. do you say in regard to this?

Mr. SMITH. That is no argument that could apply to these other

Territories.

Mr. FORD. Why not?

Mr. SMITH. Because Nevada was admitted merely and solely on account of its mineral resources and it was admitted at a time when they needed Nevada or thought they did. They knew that Nevada had Virginia City and they did not know that it had any other place. was done at a time during a great rush and during a great boom. Nobody was a permanent resident and nobody claimed to be a permanent resident, in fact, in Nevada. In these other Territories it is People have found out what they are and have gone there to live, and they have established their homes and are raising their children and supporting the schools.

Mr. Symes. Was it not a fact that the whole history of Nevada and Virginia City was that Virginia City was a kind of suburb to San

Francisco?

Mr. SMITH. Yes, sir.

Mr. Carey. If Congress had given Nevada her share of the river and harbor money for the construction of storage basins, etc., she would have had a much greater population. She has no great running streams.

Mr. Smith. But in fact, Nevada is better off to-day than if she was a Territory. She is in a better condition to-day; her people are happier and more contented than they would be under a Territorial government. If there is any expense about it, Nevada is bearing it, and if Nevada had been dealt fairly with by Congress in regard to this water storage, and Congress had been fair to her, in the river and harbor bill, the population of Nevada to-day would have been 250,000 people.

Mr. Symes. Let me state one thing in regard to the irrigation of Nevada. The streams in Nevada run but a short distance before they sink and are lost in the sand, and therefore it is absolutely necessary to

have storage reservoirs to irrigate the land below.

Mr. Smith. The San Pedro in Arizona loses itself completely. I have gone down hunting ducks where it was a large, full stream, but when it got down further you could not find a drop of water. There was just the damp ground spreading out.

Mr. STRUBLE. I suppose your proposition would be that section 5,

chapter 9, of the act passed February, 1872, should be repealed.

Mr. SMITH. What is that? Mr. STRUBLE (reading):

That no State shall be hereafter admitted to the Union without having the necessary population to entitle it to at least one Representative, according to the ratio of population fixed by this bill.

Mr. SMITH. I think it is absolutely impossible to make this represen-

tation equal, and the law should be repealed.

Mr. CAREY. That was an apportionment of 70,000.

Mr. SMITH. I do not think that is the law.

Mr. WARNER. I suggest that as it is now within ten minutes of 12 if we have to take any action upon this matter we ought to do it.

Thereupon the committee went into executive session.

COMMITTEE ON TERRITORIES, February 6, 1889.

ARGUMENT OF HON. F. T. DUBOIS,

Delegate from Idaho.

Mr. DUBOIS said:

Gentlemen of the committee, I thank you for the compliment you pay us in giving so much of your valuable time to the Territories, pressed as you are with other business. I shall not detain you long, but will briefly and in a general manner give you some reasons why Idaho should be admitted to the Union of States and why her people desire it.

While it may be urged by some that we have not as many people as some districts in the East, the rapid and continued growth of the Territory in everything that goes to make up a prosperous commonwealth and the resources with which nature has so richly endowed us should still any uneasiness as to the proud and grand position which we will quickly attain.

At the election in 1880 there were cast 7,000 votes for Delegate in

Congress; in 1888 over 16,000 votes were cast.

In 1880 there were a few more than 30,000 people: to-day the num-

ber can not be far from 130,000.

Instead of spending \$9,000 for school purposes, distributed through twenty-nine school districts, as in 1880, we spent \$140,000 in 1888 for educational purposes, and distributed it throughout three hundred and thirty-seven school districts.

Substantial and commodious school-houses adorn and add to the

attractions of every town.

The Territory has built and furnished a splendid capitol building at a cost of \$80,000 and also an asylum for the insane at a cost of \$20,000,

unaided by the General Government.

The Territory contains in round numbers 55,000,000 acres of land, 18,000,000 of which are mountainous, 15,000,000 agricultural lands, 7,000,000 forests, 25,000,000 grazing lands, and 600,000 acres lakes. Rich mines of precious metals are hid away beneath the surface of the rugged mountains, the sides of which support magnificent forests.

Idaho is greater in area than New York, New Jersey, Massachusetts, and New Hampshire combined. The warm currents of the Pacific sweep over the Territory and have a most beneficial effect on its arable belts. The average or mean annual temperature of the valleys is about

51 degrees, about 4 degrees warmer than Connecticut.

No Western or coast State or Territory is so well watered as Idaho. The Snake River, Clarke's Fork, Spokane, Salmon, Boisé, Payette, Weiser, Big and Little Wood, Bruneau, Malad, Portneuf, Clearwater, Cœur d'Alene, St. Joseph, and Kootenai are all large rivers into which

many smaller ones empty. There are at least 15,000,000 acres in the valleys and uplands which can be irrigated and made lavishly productive.

All cereals and vegetables which can be raised north of the cottongrowing line in the Atlantic States flourish in the greatest profusion. Apples, pears, prunes, apricots, nectarines, and all smaller fruits, and berries of the finest quality are produced with never-failing regularity.

Irrigation is necessary in South Idaho. Nearly all the lands which lie adjacent to the smaller streams, and which can be irrigated with trifling cost, have been taken up and are cultivated. The expense of building large canals from the great streams is such that individuals can not afford it, and companies are loath to invest their money in it without subsidies of land. By giving Idaho statehood and granting them the control of certain lands, provided the State will first reclaim it by putting water on it, every acre would be settled up within four years. The lands which could be made the most productive in the country are now valueless, and will remain so for years to come under our present system of Territorial government.

North Idaho is different in climate somewhat, and raises grain, vegetables, and fruit in the greatest abundance without irrigation. There is no better farming country anywhere than in North Idaho, and it is fast settling up with an intelligent and industrious class of farmers. North Idaho alone will have 200,000 people within eight years, and South Idaho will have double or treble the number if statehood is given. Between 1,200,000 and 1,500,000 acres of land in Idaho are now under improvement, and within the region 1,000,000 acres of agricultural land has been patented. Five hundred thousand acres of agricultural land

was taken up last year under the various land entries.

When you consider that Rhode Island contains less than 900,000 acres of land, you can form some idea of the present condition and future possibilities of the agricultural resources of this Territory. The forest area of Idaho is 7,000,000 acres, and the growth is heavier than in a majority of the timbered States east of the Rocky Mountains. There are varieties of fir, white, red, and black spruce, scrub oak, yellow and white pine, mountain mahogany, juniper, tamarack, birch, cottonwood, alder, and willow.

Such a prodigious amount of timber to the acre can be found in no other part of the United States, except on the western slopes of the western mountains in Washington Territory. The timber is of large growth and magnificent for lumbering purposes. White pine logs 5 feet in diameter, 100 feet long, without a knot, and straight as an arrow,

are common.

Nine million dollars of gold, silver, and lead was produced last year, and you might say that mining is in its infancy in the Territory. Experts say that it is the best of all the mining States or Territories. Rich copper mines have also been discovered.

The property valuation of the Territory is estimated at \$60,000,000. Idaho is in the same latitude as France and Switzerland and part of Spain, and is proven by statistics to be the healthiest country in the world.

I append a table gathered from mortality statistics, which, taken in connection with our national census, shows the percentage of deaths in the various States and Territories of the Union.

Idaho	0, 33	Missouri	1.53
Alabama	1.08	Montana	0:90
Arizona	2.61	Nebraska	0.81
Arkansas		Nevada	
California	1.61	New Hampshire	
Colorado		New Jersey	1.17
Connecticut	1.26	New Mexico	1.28
Dakota		New York	1.58
Delaware		North Carolina	0.98
District of Columbia		Ohio	
Florida		Oregon	
Georgia	1.15	Pennsylvania	1.49
Illinois	1.33	Rhode Island	
Indiana	1.03	South Carolina	
Iowa	0.81	Tennessee	1.13
Kansas	1.25	Texas	1.37
Kentucky		Utah	
Louisiana	2.00	Vermont	
Maine	1.23	Virginia	1.24
Maryland	1.24	Washington	0.93
Massachusetts	1.77	West Virginia	0.91
Michigan	0.94	Wisconsin	0.94
Minnesota		Wyoming	0.81
Mississippi	1.11		

From this it will be seen that the great summer resort of Colorado exhibits three times as great mortality as Idaho, while California shows nearly five times the mortality, and Florida three times.

The Territory abounds in hot and cold springs which can not be excelled, and lakes whose waters are as clear as crystal are plentifully scattered throughout the Territory. The largest of these are Cœur d'Alene and Pend Oreille. Lake Cœur d'Alene is about 30 miles long and 4 miles wide, on which a daily line of steamers runs.

Lake Pend Oreille is admittedly one of the most beautiful sheets of water in the United States. It is about 60 miles long and 8 miles wide, the shores of which gradually rise from its sides, covered with beautiful trees, grasses, and ferns. Kanishu Lake is about 20 miles long and 10 miles wide. Hundreds of other lakes nestle in the vales, and add a peculiar charm to the grand and majestic mountain scenery. A recent writer, speaking of Idaho as a pleasure and health resort, says:

No region of similar extent on the globe can compare with Idaho in the number, variety, and merit of attractions for the pleasure and health seeker. The enchanting beauty of its many Alpine lakes, the majesty and splendor of its thousands of snow-clad peaks, towering, as they do, above the peaceful landscapes of its loveliest vales, and the indescribable glory of its wondrous cataracts in the depths of its grandest canons on earth enrapture artist and poet alike. Amid such scenes, what a privilege it is to drink in an atmosphere whose every breath is a tonic, and to partake of sparkling waters whose efficacy is beyond compare. There are enchanting waters—lakes, rivers, and rivulets alike—with myriads of trout and other fish disporting themselves in their translucent depths, or water-fowl covering their often placid surfaces, and surrounded by forests inhabited by the elk, hear, deer, mountain sheep, goat, and other game. What a land for the enthusiastic Nimrod or disciple of Isaac Walton.

I will close by appending a memorial of the legislature of Idaho, now in session:

Memorial of the territorial assembly of Idaho to the Congress of the United States, praying for the admission of the Territory as a State of the Union.

To the Senate and House of Representatives:

Your memorialists, the legislative assembly of Idaho Territory, unanimously in both houses, most respectfully represent:

. That since the organization of the Territory of Idaho we have cheerfully yielded

obedience to the laws of the United States, and recognize the right of Congress to

make all needful rules and regulations respecting the Territories.

That we now disclaim any purpose to reflect in any manner upon the fostering care of the National Government, but gladly renewing our fealty to the Constitution of the United States, and re-asserting our abiding faith in their perpetuity and strength, do further represent the proud wish of our people to assume the responsibities and honors of one of their number.

That Idaho Territory has a population of 130,000 energetic, intelligent, law and liberty loving citizens, nearly all of American birth, immigrants from the States east and west of her, and this population rapidly increasing; that Idaho has 84,800 square miles of territory, 1,000 miles of railway running, and several lines in process of con-

struction, and a wealth of about \$50,000,000.

That Idaho's mining, grazing, and lumbering interests are already of vast importance, and that their vast development is rapidly increasing the wealth of the Terri-

That while daily developments are proving the rare mineral wealth of our mountains, and our experience instock-raising assures us of the unequaled capacity of their lower slopes for pasturage, still, from our years of experiments, we are satisfied that the great wealth of Idaho is to be found in her agricultural resources.

That Idaho has immense valleys of millions of acres of rarest fertility when only

blessed by the presence of water.

That a system of irrigation covering these vast tracts, if not beyond the reach of individual enterprise, at least should be kept within the control and for the behest of the State.

That therefore, in the behalf of the agricultural interests of Idaho, which we believe are to be of a value now little comprehended, we earnestly desire the powers and organ-

That, accepting the generous donation of public lands, which Congress, we doubt not, will grant for the foundation of an intelligent and efficient system of irrigation co-extensive with our need and opportunity, and prosecuting the enterprise by the direct and combined power of the State, joined with that rich providence of an unrivaled climate, we believe that in Idaho may be builded an agricultural State rich

and grand beyond all example.

That our pupilage as Territorial wards has given us a desire for the broader freedom of American citizenship; and that while disclaiming any criticism of the men, and while gladly acknowledging in most instances their high characters, we confess that the Territorial policy of sending strangers to rule over us and to expound our laws is growing distasteful, and, we beg to represent, is wholly unsuited to our present condition and the growing importance of the diversified interests of the Ter-

That the large augmentation within the last few years of our population and resources, with the promise of much greater increase in the immediate future, whereby the proper administration of our laws demand a more perfect and comprehensive system of government than can be attained under Territorial organization, justifies our

desire for statehood.

That the only drawback to the statement of our high prosperity and great future promise, we confess with mortification, is the settlement within the Territory of colonies of ignorant and fanatical Mormons, anti-American in precept and practice. But we respectfully remind the honorable Congress that in Idaho good men of both political parties stand together in the defense of their homes and institutions against this foreign-bred and imported menace. An intellignt public sentiment, thoroughly awake, the stern legislation of the present, as well as of previous assemblies, and the righteous decisions of our courts, we may respectfully present as a warrant against any dangerous control of the State by this alien foe.

That full in the faith that the genius of American institutions is "home rule," and that their immovable corner-stone is self-government, we believe that we have reached that period of growth when with propriety we may ask that our disabilities be removed; and that in order to enlarge our liberties, secure a closer and more honorable connection with the American Union, the establishment and maintenance of a better government, and the more readily to develop our wondrous resources, your memorialists, in the unanimous name of the people they represent, pray your honorable bodies the early passage of the bill introduced by our faithful Delegate, and now pending in the House of Representatives, providing for the admission of Idaho as one of the free and sovereign States of the American Union.