ANNUAL REPORTS

OF THE

DEPARTMENT OF THE INTERIOR

FOR THE

FISCAL YEAR ENDED JUNE 30, 1905.

GOVERNORS OF TERRITORIES, ETC.

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REPORT OF THE GOVERNOR OF ALASKA.

OFFICE OF THE EXECUTIVE,
Sitka, Alaska, October 12, 1905.

SIR: I have the honor to submit herewith my annual report of affairs in Alaska for 1905:

ALASKA AS A POSSESSION.

It is now thirty-eight years since President Johnson sent a commissioner and a military force to receive from the representatives of the Czar that part of the continent known in schoolbooks at that time as Russian America. At 3 o'clock p. m., October 18, 1867, the transfer was made to Gen. Lovell H. Rousseau, our commissioner, and his fellow Americans, upon Castle Hill, where the governor's house was located, in Sitka, the Russian flag being hauled down and the Stars and Stripes hauled up.

The vote in the House of Representatives to appropriate the purchase money, $7,200,000, stipulated in the treaty, was attended by determined opposition and acrimonious debate, and was not taken until July 14, 1868. The press of the country was for the most part hostile, and jeered and ridiculed the purchase. The general hostile sentiment of the time was voiced by the Sacramento Union, quoted by Mr. Washburn, of Wisconsin, in the course of the debate, in the following language: "Persons well informed about Alaska are ungrateful enough to hint that we could have bought a much superior elephant in Siam or Bombay for one-hundredth part of the money, with not one ten-thousandth part of the expense incurred in keeping the animal in proper condition."

There was not a man of eminence in either House of Congress who lifted his voice in favor of the acquisition, except Senator Charles Sumner and Gen. N. P. Banks, chairman of the Senate and House Committees on Foreign Affairs, respectively. Russia was paid for her friendship with a growl. The vigorous young men of the dominant party who were in control of legislation, such as Blaine, Cullom, Delano, and many others, believed that Secretary Seward had been rash even to the point of presumption in obligating the Government for $7,200,000, considering the low state of the nation's finances.

GOVERNMENT OF ALASKA.

The occupation of the country was by the military, upon the order of the President as Commander-in-Chief of the Army and Navy, and soon after the ratification of the treaty by the Senate a bill for the temporary government of the Territory was introduced by Senator

George S. Williams, of Oregon, but failed to become a law. Finally, an act known as the organic act and providing a form of civil government for the district of Alaska, was approved May 17, 1884 (23 Stat. L., 24); subsequently, on March 3, 1889, an act was approved entitled "An act to define and punish crimes in the district of Alaska, and to provide an adequate criminal procedure for said district" (30 Stat. L., 1253); and on June 6, 1900, an act was approved entitled "An act making further provision for a civil government for Alaska, and for other purposes" (31 Stat. L., 321), which is a civil code and a method of procedure. These laws, civil and criminal, have proved adequate to give protection to lives and property where it is possible to execute them.

Congress began to take a kindly interest about the time of the revision of the codes, and year by year the country has gained friends in the chamber of the lawmakers and in the administrative departments of the Government, nearly all of which are represented here in some form.

There are differences of opinion among the permanent and temporary residents as to how the country should be governed. Some call for a full Territorial form of government and seem to think that it will cure the ills which are now imagined; others ask for a division into several Territories, and still others are content to remain as we are, under the direct control of Congress, until the political infant can grow stronger.

The extension of our political institutions is desirable where they can be helpful and not burdensome. A democracy is not a cheap kind of government. The demands of every community, whether its numbers are many or few, are imperative, and some form of government is a necessity; but when the line of necessity is passed expenses increase rapidly as complexities are taken on. The population then, its numbers, location, and character, become the crucial test. If we appeal to the old Northwest Territory, some light on the subject will be obtained.

The ordinances provide for the establishment of two kinds of Territorial government. The Territory in the earlier grade was a government in embryo. Its jurisdiction was confided to a governor, secretary, and three judges, who were to adopt and publish such laws of the original States, civil and criminal, as might be necessary and best suited to the circumstances of the district.

There was no time limit to this grade. And right here the early history of Michigan is pertinent. In 1796 it came into the possession of the United States and was included in the Northwest Territory and was amenable to the ordinance of 1787. When Ohio became a State in 1802, Michigan was annexed to the Territory of Indiana. In 1805 Michigan was created a Territory and a governor appointed. The inhabitants suffered much from the war of 1812 and from Indian massacres and depredations. Land surveys were commenced in 1816 and in two years lands were brought into the market for public sale, and it is said that her prosperity dates from this period.

This fact should be noted, namely, that in 1819 the Territory was authorized by act of Congress to send a Delegate to that body, and the right of suffrage was confined to taxable citizens. From 1805 to 1832 the legislative power was intrusted to the governor and judges, in accordance with section 5 of the ordinance of 1787, and in 1823 Con-

gress passed an act transferring to a council, consisting of nine persons selected by the President from eighteen who were chosen by the people. In 1825 the council was increased to thirteen members, selected as above. In 1827 she became a Territory of the second grade, and ten years later she became a State of the Union.

At first the growth of population was slow—in 1810 it totaled 4,762; in 1820, 8,896; in 1830, 31,639; in 1840, 212,267—as it was outside of the line of emigration west at the beginning of the last century, which was before the era of steam navigation upon the lakes. The country was difficult of access, little known, and but few persons attempted to reach its borders. About 1830 the tide of emigration set that way, and in a few years the people were able to assume the burdens and responsibilities of statehood and become an integral part of the Union.

In this country there are to-day very similar conditions; transportion to any portion away from the seacoast is exceedingly difficult and expensive. During the military occupation it was considered Indian country, and any objectionable intruder could be expelled at the will of the commanding officer. The organic act positively forbade the extension of the general land laws, and no lands have been surveyed for entry up to the present time. The western frontier was more inviting to the tide of emigrants in its westward sweep until it was occupied, and now the overflow has been diverted into northwest Canada.

After the ways were opened to Michigan the people who migrated thither in families, with stock, household goods, and tools, did so with a settled purpose to remain there and build homes.

The mineral wealth of Alaska is at present its most attractive resource. The rich alluvial deposits of gold in distant parts have attracted thousands of men who hope to secure fortunes quickly. In a few days a town of tents and light-frame buildings will arise, and all the accessories of a mining-camp life will be in full swing. If a report of a rich strike in another quarter is believed, there is a stampede, and the ambitious "city" melts like snow before the summer sun. Nobody particularly regrets this, for the result is sure and certain. Affairs will settle down on a solid basis, and some of these places will become centers of thriving industries. The fact is plain to the legislators that Alaska has a small permanent population of white people; they are scattered pretty much over the whole area, and will average one soul for every 9 square miles.

The number of men who leave the southern ports early in the summer and come up here for fishing, mining, speculation, and labor, and return in the fall, is probably on the increase. They return with their gains to their families, and numbers who have been successful have made investments around Seattle and other places and are living there. They are exercising their right and choice to do what they please and nobody is hurt or to blame, only this flotsam and jetsam multitude should not be recognized as part of a basis upon which a form of government is erected which will incur great expense to maintain. Through much patience the present system of government has been attained, which is probably the best that could be devised to meet the present needs.

Anyone who will examine the legislation of late years in behalf of Alaska will see that Congress has acted in an intelligent and liberal

spirit, and many who have seen all kinds of dominance here are willing for the present to be ruled direct from Washington.

Chapter 21 of the act of June 6, 1900, as amended by the act approved April 28, 1904 (33 Stat. L., 529), provides for the incorporation of towns in Alaska. This has proved to be a wise piece of legislation, for it gives every community having 300 inhabitants the right to incorporate and attend to their own local affairs. The qualified electors may vote for seven councilmen; they elect one of their number president, who is ex officio mayor; they have power to appoint and remove the clerk, treasurer, assessor, and such other officers as they deem necessary; they can, by ordinance, provide for the necessary street improvements, fire protection, water supply, lights, wharfage, sewerage, maintenance of public schools, protection of public health, police protection, and the expense of assessment and collection of taxes; to impose and collect a poll tax on electors, tax on dogs, general taxes on real and personal property, possessory rights, and impose such license tax on business conducted within the corporate limits as the council may deem reasonable.

It was further provided in the act approved June 27, 1905 (33 Stat. L., 616), entitled "An act to provide for the construction and maintenance of roads, the establishment and maintenance of schools, and the care and support of insane persons in the district of Alaska, and for other purposes," that the common councils of incorporated towns in said district shall have power, and it shall be their duty in their respective towns, to establish school districts, to provide the same with suitable schoolhouses, to maintain public schools therein, and to provide the necessary funds for such schools; but such schools, when established, shall be under the supervision and control of a school board of three members, to be elected by the votes of all adults who are citizens. Many of the inhabitants have embraced these privileges, and are attending to their own affairs with commendable zeal. The truth is, that the people of Alaska are as well governed, for what it is costing them, as any people on earth. Everything is not perfect by any means, nor has every necessity been fully provided for; but when our condition is contrasted with the conditions existing in any of the other Territories it can be easily shown that there is no cause for complaint.

If Congress will continue its favorable attitude for a few years and promote wagon and railroad construction across and through our great river valleys, extend the system of cables and telegraphs now rendering such valuable service, start a system of surveys, so that the settler can obtain a title to his homestead at no greater cost than paid elsewhere, continue the mail service, which has in the past been generous and efficient, give us buoys and light-houses, geological and coast surveys, experiments in horticulture, agriculture, and stock raising, and be solicitous about the schools, much of the moving, restless tide of humanity will turn this way and fill up the idle and waste places. The country will then go ahead like Michigan, and doubtless at a greater rate of speed with all our modern appliances. Then the second grade of Territorial government might be tried, but it will not be for long, for the people who are to rule here will be up to the highest standard and will not be content with anything less than statehood, whereby they can have real representation in the councils of the nation.

Let legislators reflect that no country is so completely bereft of its products; furs, fish, and minerals go out, and very little of their annual value returns for investment. If the millions in gold and the income from copper and other ores could be absorbed and held here, as other States retain and use their annual increments, Alaska could stand a severe taxation. It is hoped that Congress will inquire very closely into the character and extent of the population, how many are single, how many have families, how they are grouped in communities, and the extent of their taxable property, before they authorize the organization of a local legislature and place in its hands the power of taxation. The organization of counties and offices, the building of schoolhouses, jails, and hospitals, the care of the insane, and the support of prisoners and many other expenses would be a weight which, under present circumstances, the people could not possibly support. Alaska to-day does not owe a dollar, and Congress has wisely prohibited the incorporated towns from borrowing or issuing bonds. Some who have pondered over this question of Territorial government are not much in love with it. It is a sort of medicine to be avoided as long as possible, even if quacks insist that it is the only remedy.

DELEGATES.

The question of a delegate or delegates for Alaska is discussed on all sides. As one was positively denied in the organic act of 1884, supra, and has not been granted up to this time, some of the controlling members of Congress must entertain objections which seem insuperable. A few thoughtful people who have expressed themselves on the subject think that the District is not deprived of much by not having a delegate, because every one residing here and knowing the conditions, writes to the Senator of his home State, and sends him newspapers to awaken his interest. Such silent work has no doubt counted for much of late; but such work, while it may be great and even sufficient, can not be relied upon and is irresponsible. The majority of the resident population want a delegate and would prefer to elect him.

Michigan had only a skeleton government from 1805 to 1827, when the legislative assembly was elected; in 1819 Congress authorized it to send a delegate, extending the right of suffrage to all taxable citizens. There is good precedent to allow Alaska a delegate under her present condition. The matter of elections is really a serious one, and if Congress is unwilling to wrestle with it, then the appointment of a commissioner or commissioners, who shall be bona fide residents of the district, with the rights and privileges of a delegate as a temporary expedient, would be acceptable. It will be a serious mistake to let the district be deprived any longer of a duly authorized and recognized authority in Washington during the sessions of Congress. It may be that the law-making power will have to act in this matter to get rid of the annoyance of the large number of self and semi appointed delegates who bob up in the halls and committee rooms of the Capitol. Such interest by these people is not serious and not altogether objectionable, but Congress can have a safety valve to relieve itself of much pressure by organizing permanent committees on Alaska.

POPULATION.

The matter of Alaska's population is, of course, important, in view of all that is asked of Congress. Errors on this subject will result in evil. No fault is found with the last census, taken in the spring and summer of 1900. Enumerators tried to catch all; the stampede to Nome was on, and some of the other camps had an unusual number of sojourners. Hardly any of these summer temporaries claimed to be residents of Alaska. A number of them have substantial interests in mining enterprises, and a great many of them are connected with the salmon-packing interests and industry. These people do not claim to be residents. The subcommittee of the Committee on Territories inquired strictly into this matter when they journeyed through the district in the summer of 1903. In their report on the conditions in Alaska they say: "But from the best data obtainable by the committee, they are of the opinion that the permanent white population of of Alaska to-day will not exceed 20,000." In my last annual report an estimate of the numbers of the various localities was given, and where opportunity was had for a comparison since that time it has been found that the estimate has been rather liberal for most places. The total of these estimates sums up 26,550 for the white population, which has held its own during the past year, but certainly has not increased to any appreciable extent. No doubt many who have been in a quandary have made up their minds to reside here and build homes. This is a great gain.

MATRIMONY.

The males predominate. This is easily accounted for by reason of the life of adventure that is before any young man of health and courage that comes to this country. Many have come and they thoroughly enjoy it, but they have not been as successful in fortune getting as they expected, yet have not given up the struggle. They have too much pride to return to their old homes for a visit and for a wife. Most of them are as fine specimens of manhood as ever stood on two feet. It is noticed that schoolma'ams and other young women who come here do not reside in a place but a short time before some worthy admirer turns up and tells the old story. A number of these chose matrimony during the past year. There should be no such thing as race suicide in Alaska, where we have more than 9 square miles per capita. It is a delicate matter and not easy to arrange, but it is desirable to have more young women of good mind and health to try this western life and home building. Those who have a love of children and desire to rear a family should learn what special advantages Alaska has to hold for them.

LAWS IN RELATION TO ALASKA PASSED AT THE LAST SESSION OF CONGRESS.

APPROPRIATIONS.

For salaries: for governor, five thousand dollars; three judges, at five thousand dollars each; three attorneys, at three thousand dollars each; three marshals, at four thousand dollars each; three clerks, at three thousand dollars each; in all, fifty-one thousand five hundred dollars.

For incidental and contingent expenses, clerk hire, stationery, lights, and fuel, to be expended under the direction of the governor, two thousand dollars.

For surveyor-general and ex officio secretary of the district of Alaska, four thousand dollars; clerks in his office, four thousand dollars; in all, eight thousand dollars.

For continuing the cable from Valdez, Prince William Sound, to Seward, at the head of Resurrection Bay, Alaska, ninety-five thousand dollars.

For agricultural experiment stations, fifteen thousand dollars.

For the purchase and introduction of live stock for experimental purposes, three thousand dollars.

Alaska is included to share in the relief fund of thirty thousand dollars for American seamen.

For post-offices: "*Provided*, That out of this appropriation ($7,300,000) the Postmaster-General is authorized to provide difficult or emergency mail service in Alaska, including the establishment and equipment of relay stations, in such manner as he may think advisable, without advertising therefor."

Building and wharf at Sitka to share in fund for repairs under the Treasury Department. Appropriation for coast-survey work in Alaska is included in amount for other places as well.

For fish hatcheries, Alaska: For the establishment of one or more hatcheries in Alaska for propagation of salmon and other food fishes, at points to be selected by the Secretary of Commerce and Labor, including the purchase of sites, construction of necessary buildings and ponds, purchase and hire of boats, equipment, and such temporary help as may be required, construction and operation of hatcheries, to be immediately available, fifty thousand dollars.

For the protection of salmon fisheries in Alaska, including the salaries of one agent at two thousand five hundred dollars, and one assistant agent at two thousand dollars, seven thousand dollars.

For Alaskan seal fisheries; for salaries and traveling expenses of agents at seal fisheries in Alaska, as follows: For one agent, three thousand six hundred and fifty dollars; one assistant agent, two thousand nine hundred and twenty dollars; two assistant agents at two thousand one hundred and ninety dollars each; necessary traveling expenses of agents actually incurred in going to and returning from Alaska, not to exceed five hundred dollars each per annum; and for the purchase of stationery for the use of said agents and the expense of transporting the same to the Pribiloff Islands, Alaska; in all, twelve thousand nine hundred and fifty dollars.

To enable the Secretary of Commerce and Labor to furnish food, fuel, and clothing to the native inhabitants on the islands of St. Paul and St. George, Alaska, nineteen thousand five hundred dollars.

For the continuation of the investigation of the mineral resources of Alaska, eighty thousand dollars, to be immediately available.

For education in Alaska: To enable the Secretary of the Interior, in his discretion and under his direction, to provide for the education and support of the Eskimos, Indians, and other natives of Alaska; for erection, repair, and rental of school buildings; for text-books and industrial apparatus; for pay and necessary traveling expenses of general agent, assistant agent, superintendents, teachers, physicians, and other employees, and all other necessary miscellaneous expenses which are not included under the above special heads, fifty thousand dollars, to be immediately available.

For reindeer in Alaska: For the support of reindeer stations in Alaska, and for the instruction of Alaskan natives in the care and management of the reindeer, fifteen thousand dollars.

For the care and custody of the insane, district of Alaska: For the care and custody of persons legally adjudged insane in the district of Alaska, including transportation and other expenses up to and including June 30, 1906, to be immediately available, seventeen thousand two hundred and thirty-two dollars.

For incidental expenses, Territory of Alaska: For furniture, fuel, books, stationery, and other incidental expenses for the offices of marshals and attorneys, five thousand dollars.

For traveling expenses, Territory of Alaska: For the actual and necessary expenses of the judges and clerks in the district of Alaska when traveling in the discharge of their official duties, five thousand dollars.

For boundary line, Alaska and Canada: To enable the Secretary of State to mark the boundary and to make the surveys incidental thereto between the Territory of Alaska and the Dominion of Canada, in conformity with the award of the Alaskan Boundary Tribunal and existing treaties, sixty-five thousand dollars, together with the unexpended balance of the previous appropriation for this object.

DEFICIENCY APPROPRIATIONS.

For the survey for wagon road from Valdez to Fort Egbert, Alaska: For a survey and estimate of cost of a wagon road from Valdez to Fort Egbert, on the Yukon River, to be made under the direction of the Secretary of War, five thousand seven hundred dollars and sixty-three cents.

For the survey for a military trail between Yukon River and Coldfoot, Alaska: For surveying and locating a military trail under the direction of the Secretary of War, by the shortest and most practicable route, between the Yukon River and Coldfoot, Alaska, on the Koyukuk River, to be immediately available, one thousand four hundred and thirty-one dollars and fifteen cents.

Provided, That in so far as it may be deemed necessary by the Attorney-General, this appropriation (appropriation for United States courts) and the like appropriation for the fiscal year 1906, shall be available for such expenses in the district of Alaska.

Provided further, That the unexpended Government funds which were in the hands of the clerks of the district courts for the district of Alaska at the close of January 26, 1905, shall be available for court expenses, in so far as they were available by virtue of then existing law, notwithstanding the provisions of the act of January 27, 1905.

LEGISLATION PROPOSED AT LAST SESSION OF CONGRESS.

Legislation was also presented at the last session of Congress, which, however, failed of enactment, with the view to establishing a life-saving station at Nome, Alaska, and also for the organization of an Alaskan government board, to be composed of the governor, three commissioners (all to be appointed by the President), and three other commissioners to be elected by the qualified electors, authorizing such board to make laws upon certain subjects therein specified and such other laws as Congress may from time to time designate. It also authorized the election of a Delegate to the House of Representatives and provided that male citizens of the United States, 21 years of age, able to speak, read, and write the English language, and having resided in the district one year should be qualified electors. It also provided a fourth judicial division, organizing the four judges into a supreme court, one of the number to be chief justice and the others associate justices, all to be appointed by the President.

NEW FOURTH JUDICIAL DISTRICT.

The necessity for a fourth judicial district is greater than it was in 1903, when the Senate subcommittee of the Committee on Territories took testimony on the subject and reported that—

> The third judicial district is so extensive in area and its business so large in volume that the committee does not hesitate to recommend that a portion of it be set off to form a fourth judicial district to which an additional judge should be appointed. When asked his opinion of such a proposition, Judge James Wickersham, who was then holding a term of court of the third judicial district, replied: "This is a very large judicial division. It extends from the British lines to the outer Aleutian Islands; from the Pacific to the Arctic oceans. The judge is compelled to travel all the time. When he is over on the coast, it is almost impossible for the business of the court in the interior of the division to receive attention. Heretofore it has received fair attention, but the business is rapidly increasing, and I recommend the creation of another judicial division, by dividing the third judicial division along the line of the sixtieth to Lake Clark; from thence to Mount McKinley, and from that magnificent glacier-capped dome along the summit of the Alaskan range to Mount St. Elias. All north of that line should be one district and all south another."

That fact is emphasized by the fact that during the season of open navigation he is compelled to travel the whole length of the American Yukon, a distance of 1,500 miles, holding courts at Eagle and Rampart. If he goes to the Koyukuk country it adds over 1,100 miles to river navigation and 120 miles trail to his annual journey in the interior. At St. Michael the Government places at his disposal a revenue cutter, by means of which he is carried to Bristol Bay, Dutch Harbor, and thence along the south coast of Alaska as far as Valdez, making a journey by sea of from 1,600 to 1,800 miles. With a population in this district so widely scattered, with distances between settlements so vast, the cost of litigation becomes prohibitive. The man of ordinary means not only hesitates to embark in it, but absolutely abandons his rights, however valuable they may seem to be, and in his discouragement leaves the country.

Any judge having the whole Yukon Basin for a district will have no time for idleness, and one who has a district extending from Bristol Bay to Valdez will find work to occupy all his time.

The bill providing for this additional judicial district passed the Senate, but was defeated in the House of Representatives. Two grand juries have called attention to the necessity for such legislation in their reports.

In the past summer there was a large and heterogeneous population around the shore of Bristol Bay; the canneries at Karluk and Chignik draw a large number of persons; railway construction out of Valdez and Seward has occupied increasing numbers; all these lines, and the property they represent, had to look for legal protection to the courts in the interior of the country at Fairbanks the whole summer, and this was about of as much service as a court at Key West, Fla. The recommendation made in my last annual report is again renewed, namely:

The remedy is to create a fourth judicial district and furnish it with a proper seagoing steamer, to be under the custody of the marshal and at the command of the court; it should be equipped with the best small arms and a gatling gun and ammunition. All the communities which are along the thousands of miles of shore line of Kenai Peninsula, Cooks Inlet, Kodiak, Alaska Peninsula, Shumagin, Aleutian Chain, and Bristol Bay can be visited, and as a consequence there will be a wholesome respect for law and order.

This suggested remedy has been attacked in certain quarters with a light flippancy begotten of ignorance, and in disregard of the plain duty which the Government owes to every citizen to give him ready and efficient protection for himself and his property. In 1897 and 1898 a spirit of lawlessness manifested itself upon Douglas Island, near Juneau. One man was convicted and sentenced, and, waiting to be transported to the penitentiary below, was released by a body of conspirators, who overpowered the guard and opened the doors. The prisoner and a companion in the course of a few weeks were located upon a neighboring island. Two deputy marshals with helpers proceeded to capture them. In the attempt one marshal was killed and the other wounded nigh unto death, for the ball passed through his groin. The others returned to tell the story, and the marshal at Juneau was compelled to charter small steamers and arm them as best he could and ask for volunteers to help capture these desperadoes. Some vessels went one way and some another, and after a number of days the men were overpowered and taken.

About the time for the convening of the court at Juneau to try these men, the United States marshal asked that a gunboat be ordered there for protection. The *Marietta* was sent, and her commander, while remaining in the harbor at Sitka, kept Captain Young and a force of armed marines quartered in Juneau until fear had subsided.

The cannery companies have invested very large sums of money in

vessels, gear and tackle, and all sorts of machinery, in buildings and such supplies as are used in their business. Their season is short, and they do the best they can to obtain suitable labor for their work. It comes from the four quarters of the globe. They pay a very considerable amount to the Government as a license on the business. Besides all this, the product is a valuable and desirable article of food and is needed to add to the world's supply of provisions. It is manifestly unjust and unfair to leave these enterprises, let alone the settled communities, destitute of close, ready, and efficient protection by the courts.

ALASKAN INSANE.

Pursuant to the act of April 28, 1904 (33 Stat. L., 526), supplemental to and amendatory of the act of June 6, 1900, contract was entered into with the Sanitarium Company, of Mount Tabor, near Portland, Oreg., for the care and custody of the Alaskan insane for a period of five years from January 16, 1905, at the rate of $348 per annum for each patient received, which was a reduction of $12 per capita per annum from the contract for the previous year. The right was reserved, by the terms of the contract, to the President of the United States to terminate the same upon six months' notice in writing, given after the expiration of the first year of the term of the contract. There are at the present time 65 patients in the institution, an increase of 16 over the number treated at this time last year. During the year 14 patients were discharged as thoroughly cured, and have taken up their different vocations; 2 patients died, the immediate cause of their death being pneumonia.

DISTRICT HISTORICAL LIBRARY AND MUSEUM.

Several new books were purchased during the past year, and donations of many important documents and other publications were made by exhibitors at the Louisiana Purchase Exposition; copies of the several papers published in the district were also purchased.

The moneys received for certificates issued to members of the bar, for commissions to notaries public, and other sources during the year, and set aside to be disbursed on the order of the governor in maintaining the District Historical Library and Museum, under the provisions of section 32 of the act of June 6, 1900, prescribing a civil code for the district of Alaska, and the act approved March 3, 1905 (33 Stat. L., 1265), entitled "An act to further prescribe the duties of the secretary of the district of Alaska," including the balance on hand, aggregated $4,121.61, of which $781.22 was expended, leaving an available balance of $3,340.39.

The following statement of receipts and disbursements for the year ended September 30, 1905, is taken from the report of the secretary of the district, as required by the provisions of chapter 1, section 32, of the Civil Code for Alaska, approved June 6, 1900:

Statement of the receipts and disbursements of the Alaska Historical Library and Museum fund for the year ended September 30, 1905.

Dr.

1904.			
Oct.	1.	Balance last report	$2,499.56
	6.	H. A. Day, notary public	10.00
	6.	L. U. Stenger, notary public	10.00
	7.	C. L. M. Noble, notary public	10.00
	7.	M. I. Cochran, notary public	10.00
	12.	T. H. Beaumont, notary public	10.00
	13.	M. E. Stevens, notary public	10.00
	19.	G. E. Baldwin, notary public	10.00
	21.	I. B. Wingate, notary public	10.00
	24.	H. B. Le Ferre, notary public	10.00
	27.	G. McNaughton, notary public	10.00
	28.	E. I. Wright, notary public	10.00
	29.	E. R. Gray, notary public	10.00
Nov.	2.	V. S. Holt, notary public	10.00
	9.	T. R. Lyons, notary public	10.00
	9.	M. L. Sullivan, notary public	10.00
	9.	A. Watson, member bar	10.00
	9.	I. H. Smith, member bar	10.00
	9.	A. I. Beecher, member bar	10.00
	23.	W. A. Barnhill, notary public	10.00
	23.	E. H. McLachlen, notary public	10.00
	28.	I. S. Clark, member bar	10.00
Dec.	3.	A. S. Dautrick, notary public	10.00
	9.	A. Gfeller, member bar	10.00
	15.	I. E. Worden, notary public	10.00
	16.	E. I. Wright, member bar	10.00
1905.			
Jan.	5.	L. S. Drake, notary public	10.00
	9.	M. C. Brown, member bar	10.00
Feb.	2.	I. N. Wilcoxen, notary public	10.00
	6.	L. Craden, notary public	10.00
	6.	C. A. Stevens, notary public	10.00
	6.	E. H. O. Vauden, notary public	10.00
	11.	I. I. Rogers, notary public	10.00
	17.	P. Gallagher, notary public	10.00
	21.	W. H. Whittlesea, notary public	10.00
	25.	R. V. Nye, member bar	10.00
	25.	N. L. Burton, member bar	10.00
Mar.	4.	H. V. Nichols, notary public	10.00
Apr.	6.	G B. Brubaker, notary public	10.00
	7.	L. L. James, notary public	10.00
	7.	Jesse Jones, notary public	10.00
	18.	C. E. Ingersoll, notary public	10.00
	18.	J. S. Clark, notary public	10.00
	20.	N. S. Burton, notary public	10.00
	20.	J. S. Lang, notary public	10.00
	20.	G. B. Irwin, notary public	10.00
	20.	R. M. Crawford, notary public	10.00
	21.	G. E. de Steingner, member bar	10.00
May	4.	C. V. Bennett, notary public	10.00
	6.	A. J. Bruner, notary public	10.00
	6.	F. M. Hasking, notary public	10.00
	8.	Wm. L. Lall, notary public	10.00
	9.	A. R. Heilig, member bar	10.00
	10.	C. A. Schulze, notary public	10.00
	10.	F. M. Brown, notary public	10.00
	11.	H. O. Tiedeman, notary public	10.00
	31.	John B. Denny, notary public	10.00
June	5.	David T. Roy, member bar	10.00
	5.	Fernand de Journal, member bar	10.00
	5.	Guy Burton Erwin, member bar	10.00
	5.	Cassius M. Frazier, notary public	10.00
	5.	S. O. Marford, notary public	10.00
	6.	D. H. Jarvis, notary public	10.00
	6.	D. A. McKenzie, notary public	10.00
	6.	Wm. Gray, notary public	10.00
	7.	George C. Heard, member bar	10.00
	7.	A. P. Swineford, member bar	10.00
	7.	B. N. Carrier, member bar	10.00
	8.	F. C. Wakefield, notary public	10.00
	13.	Fergus F. McWilkie, com. deeds	5.00
	13.	C. M. Summers, notary public	10.00
	18.	J. L. McPherson, notary public	10.00

Dr.

1905.			
June	28.	Seward A. Plumley, notary public	$10.00
	28.	V. E. Vincent, notary public	10.00
July	5.	A. C. Williams, notary public	10.00
	7.	A. R. Heilig, notary public	10.00
	12.	Frank W. Redwood, notary public	10.00
	14.	Frank E. Young, notary public	10.00
	17.	John J. Reegan, member bar	10.00
	17.	Samuel D. Woods, member bar	10.00
	17.	R. G. Hudson, member bar	10.00
	17.	H. Y. Freedman, notary public	10.00
	17.	C. C. Heid, notary public	10.00
	17.	B. S. Guny, notary public	10.00
	24.	D. J. Winkoop, notary public	10.00
	24.	W. B. Stout, notary public	10.00
	24.	F. E. Feller, notary public	10.00
	31.	Rev. Hudson Stuck, notary public	10.00
	31.	Receipts from foreign and domestic incorporations and the issuance of certificates with seal affixed from May 10 to July 31, inclusive, as per itemized statement No. 1, inclosed	170.25
Aug.	7.	C. Harry Woodward, notary public	10.00
	11.	James W. Bell, notary public	10.00
	11.	F. R. Cowden, notary public	10.00
	11.	G. J. Somen, notary public	10.00
	11.	J. S. Harding, member bar	10.00
	11.	G. A. Adams, notary public	10.00
	17.	Fernand de Journal, notary public	10.00
	17.	Andrew J. Baumgartner, notary public	10.00
	17.	John T. Reed, notary public	10.00
	17.	John S. Harding, notary public	10.00
	22.	C. A. Clark, member bar	10.00
	31.	Receipts from foreign and domestic incorporations and the issuance of certificates with seal affixed, from Aug. 1 to 31, inclusive, as per itemized statement No. 2, inclosed	148.30
Sept.	1.	Harold M. Lull, notary public	10.00
	1.	E. T. Wolcott, notary public	10.00
	5.	Webster Brown, notary public	10.00
	7.	E. T. Rose, notary public	10.00
	7.	J. E. Coffer, member bar	10.00
	14.	B. N. Camer, notary public	10.00
	14.	H. T. Harding, notary public	10.00
	14.	Roy G. Hudson, notary public	10.00
	14.	Thomas R. Shepard, member bar	10.00
	14.	J. E. Rivard, member bar	10.00
	14.	A. N. Evans, notary public	10.00
	16.	Arthur G. Thompson, notary public	10.00
	19.	C. S. Hubbell, notary public	10.00
	19.	I. L. Reed, notary public	10.00
	19.	A. H. Berry, notary public	10.00
	19.	George W. Palmer, notary public	10.00
	23.	Charles Ethelbert Claypool, notary public	10.00
	29.	I. E. Rivara, notary public	10.00
	30.	Receipts from foreign and domestic incorporations and the issuance of certificates, with seal affixed, from Sept. 1 to 30, inclusive, as per itemized statement No. 3, inclosed	148.50
		Total	4,121.61

Statement of the receipts and disbursements of the Alaska Historical Library and Museum fund for the year ended September 30, 1905—Continued.

Cr.

1904.			
Oct.	7.	The Seward Gateway, voucher No. 1	$3.00
	18.	I. W. Frame, Transcript, voucher No. 2	2.00
	20.	Council City News, voucher No. 3	10.00
Dec.	10.	Fred P. Kaiser Publishing Co., voucher No. 4	50.00
1905.			
Jan.	31.	Leo Nabokoff, voucher No. 15.	60.00
Feb.	28.	.....do	60.00
Mar.	10.	Alaska Youkon Publishing Co., Guide, voucher No. 5	5.00
	31.	Leo Nabokoff, voucher No. 15.	60.00
Apr.	22.	Valdez News, voucher No. 6	9.00
	29.	Leo Nabokoff, voucher No. 15.	60.00
May	6.	F. La Roche, voucher No. 7	12.50
June	7.	The Daily Alaskan Skagway, voucher No. 8	9.00
	26.	Leo Nabokoff, voucher No. 15.	60.00
	29.	Dodd, Mead & Co., voucher No. 9	2.50

Cr.

1905.			
June	30.	Leo Nabokoff, voucher No. 15.	$60.00
	30.	Edward De Groff, voucher No. 10	84.32
July	12.	Dispatch Publishing Co., voucher No. 11	8.00
	31.	Leo Nabokoff, voucher No. 15.	60.00
Aug.	25.	Dodd, Mead & Co., Chicago, voucher No. 12	2.50
	31.	Leo Nabokoff, voucher No. 15.	60.00
Sept.	26.	By John G. Brady, account of Lowman & Hanford Stationery and Printing Co., voucher No. 13	3.15
	29.	Lowman & Hanford Stationery and Printing Co., voucher No. 14	54.25
	30.	Leo Nabokoff, voucher No. 15.	46.00
		By balance	3,340.39
		Total	4,121.61

RESOURCES.

MINING.

This industry is not in a satisfactory condition, so far as any fostering care of it by the Government is concerned. Attention has heretofore been called to this fact. Other industries are looked after. Agents have always been kept upon the seal islands; two special agents look after the salmon interests; a resident agent of the Bureau of Immigration; another the forest reserve; a number of agricultural stations; but the greatest of all the industries here goes on without the particular concern of any recognized officer of the Government. The mining industry is now too large and too widespreading and important to let run in this slipshod sort of style any longer. There is need of a mining commissioner, and the salary should be generous enough to induce a well-qualified mining engineer to accept an appointment. There surely will be established before many years a department of mines and mining, and the organization of such an office here would be a timely anticipation of such an important event in our progress as a nation.

In many ways such an office would be of great service in the district to miners and to those who are operating upon a large scale; and outside of the district, to those who are seeking reliable information, with a view to investment in mining enterprises. An Alaska mining commissioner's annual report would be one of the most interesting documents published by the Government, and would be read far and near by those who are in the mining business. Congress can help the Alaska mining industry in no better way than by the creation of such an office.

GOLD.

This metal is found in nearly every part of the district. In the southeast part it exists upon the mainland and upon the islands in a free state and associated with other minerals in quartz matter. The areas where it has been found free in sufficient richness for working have been small. They are in close proximity to ledges the surfaces of which have been oxidized and ground and washed for ages, such as Silver Bow Basin, near Juneau, and the top of the Treadwell mines. It is the gold which has been found in the ledges which has had greatest attention by the miners in this part of the district.

The advance for the year in several localities has been marked and gratifying. The extreme southern part, with Ketchikan as a supply center, has been growing right along. Hardly any of the claims have been brought to a producing state, but prospects have been encouraging enough to warrant the expense of much real development. One of these enterprises requires the building of about 40 miles of road, and this work has been under way this season and is a prerequisite before the operation of actual mining begins. This sort of preliminary work is going ahead upon a number of properties in the Ketchikan district, and no doubt the prospectors will arrive at gratifying results in the near future.

In the stretch of country between Ketchikan and Juneau, a number of discoveries and locations have been made upon gold-quartz veins, and development work has been prosecuted upon a number of these claims. It has been a year of marked progress for the Harris mining district with Juneau as a center. The company, owning what are known as the Perseverance claims, after several years spent in development work have felt justified in undertaking the erection of large reduction works, and they are at this work now. The mines at Sheep Creek, 4 miles south, have been pretty steady producers, but are shut down at present.

Going north the Eagle River mines can be mentioned as joining the list which produce bullion. Their clean-ups are satisfactory to the owners. The Jualin, though shut down for many months, has started to produce again, and is making a monthly shipment of bullion which proves that the ore is very rich. The Kensington and a number of other adjoining claims at Berners Bay have been in the hands of a receiver for several years. There is a 40-stamp mill, 3 miles of railway, and much other property in connection. The receiver, through dint of faith and perseverance and makeshifts, kept at development work and has shown up a body of ore, which one of our accepted and best mining engineers estimates will produce nearly $3,000,000 in net profits. The legal difficulties which have attended this great enterprise are in a state of adjustment, and no doubt by spring the work of reduction will begin.

Across from Juneau are the great Treadwell works in Douglas. From the beginning of this enterprise until this present hour it has been a kind of schoolmaster to teach the possibilities of mining in low grade ores. There has been a sense of honesty and fair dealing and obedience to the eleventh commandment that has been delightful. They are as reliable as the Bank of England or the Treasury of the United States. It started and continues to be a strictly commercial enterprise for gain. There was no intention to work out any benevolent theories. And yet the successful working of these mines for years has been a blessing to all of us directly or indirectly. The returns are sure and well distributed. As a practical illustration of what success can be attained in handling a low-grade ore, their methods can be studied and followed and are of immense value to those who are sure to erect works of similar bodies of ore. Promoters who have properties to sell and investors who are seeking opportunities for the employment of capital can profitably study the history and present management of the great works.

There are a number of other enterprises in gold quartz mining in southeastern Alaska in various stages of development. The latest dis

covery is on the west coast of Chichagoff Island, about 60 miles north of Sitka. This was made by some parties who were fishing during the summer. Large croppings show up well in free gold, and the concentrates assay very highly. A number of locations have been made, and immediate steps are being taken to ascertain more definitely the value of the find. Sands carrying gold have been worked near Lituya Bay and Yakutat. As great advancement has been made in the past few years in working ground with steam dredges and other machinery at a very small cost per square yard, no doubt much gold will be obtained at a handsome profit at these and similar places along the ocean shores, such as Anchor Point in Cooks Inlet and Sand Point, Shumagin Islands.

A considerable amount of gold has been taken at Cape Yaktag, about 65 miles east of Kayak. The people who are at work seem to keep quiet and hang on. Two men went to Middleton Island, which is a low flat area lying about 50 miles south of the mouth of the Copper River. They were there for more than a year. They report a mild climate in winter, that grass and vegetables grow well, and that they have made locations in both placer and quartz. Placer mining has been going on for several years in the northern part of Kenai Peninsula. Some seasons the miners in this camp have had great difficulties to contend with for reason of the freshets washing out wing dams and other works. This year is reported to have been favorable.

Valdez is headquarters for the men who are placer mining on branches of the Copper, which are widely separated, Slate Creek and Miller Gulch, tributaries of the Chistochina, and Nizina, which is drained into the Chitina, coming in from the east. It is expensive to get supplies to these camps, but the men who endured the hardships and performed the work are contented with their gains. The whole area south of the Yukon and north of the sea appears to be gold producing. A great part of it is unexplored. That part of it around the towns of Fairbanks and Chena has been the scene of great activity this year, and the output has been very large in view of all the great obstacles with which they have had to contend. Enough gold has been taken out to demonstrate that it is a good camp and that there is a large area that can be profitably worked even at present prices for supplies. New strikes were made, and then stampedes. Reports seem to indicate that the discoveries were genuine, and as a consequence the known gold-producing area has been much enlarged. This region is full of promise and if roads—both wagon and rail—post-offices, and telegraph lines can be supplied with reasonable facilities there will be a rapid and healthy growth.

Away north of the Arctic Circle, on the headwaters of the Koyukuk, placer mining has been conducted for a number of years, and each year there is a considerable increase in the yield. It would seem that the whole of Seward Peninsula is destined to be gold yielding. Matters are now getting down to a pretty good working basis. The greatest difficulty during the best part of the working season is scarcity of water. Large sums are now invested in ditches almost as big as our early canals in the east. Some litigation has arisen over water rights, and the trials before the courts may show the necessity of action on the part of Congress to protect the single miner, who is working his ground in good faith, from extortion by the big companies, who have corralled all the water for miles in every direction. These great flumes are over Government lands, and there may have to be a revi-

sion of the rules by which water rights have been appropriated. The sooner that this question is inquired into in all its bearings in the northern camps and settled upon an equitable basis, the better it will be for all concerned. The shortness of the season is made up for in part by the length of the day, for in summer there is practically no night, and men can be worked in shifts to keep the work going without cessation. Work in winter is now carried on upon many of the claims. There has been a great advance in the use and management of machinery.

A destructive fire occurred in Nome on the 13th of September, devastating a large area in the heart of the town. While the loss of property was large, no lives were lost. As in other places, so it will be in Nome, the burned district will be covered with better buildings, and better protection will be provided.

The above is but a cursory glance at the gold fields in Alaska, and while it is meager, it is yet sufficient to convince even the indifferent of the vastness and importance of this one resource of the country. How wonderfully prophetic and accurate were the predictions of the French traveler, M. Roche, in his article in the Revue Contemporaine, January, 1868, as quoted by General Banks, in his great speech:

> Russian America possesses mineral wealth that far surpasses the value of its furs, fisheries, and forests. The working of these mines would give more life to the country, causing villages and cities to spring up and flourish more prosperously than any in the less hospitable regions of Siberia. Comparing the geographical features of the two countries, he believes the American as rich in minerals as the Asiatic part, and is sure that gold might be found in all the rivers and valleys.

M. Roche calculated with as much assurance as did his fellow-countryman, Leverrier, twenty-two years previously, for the discovery of Neptune. It was the same kind of insight, or foresight, or whatever one cares to name it.

Alaska is now put down in the third place as a gold producer, coming after Colorado and California. The output for the year has been something near $10,000,000.

COPPER.

The world is asking for more copper. The constant advance in the use and application of electricity has created an enormous demand for this desirable metal, and during the past summer the supply has fallen short and prices have advanced. This, of course, stimulated the owners of copper properties in Alaska, and they have been working with energy and confidence. A number of these properties are located upon Prince William Sound. The shipment of copper sulphide ore from the Ellamar mine in Virgin Bay, about 30 miles from Valdez, has been constant during the year, and nearly at the rate of 2,000 tons per month.

The freight rate to the smelter at Tacoma, Wash., is very low for such a long haul; but the transportation companies would prefer to carry ore at nearly cost to keep the country progressing, knowing well that the development of these mines will make much other traffic. The Beatson mine, upon Latouche Island, on the west side of this sound, has been making steady shipments of the copper sulphide ore, which has been removed as development work has advanced. These two mines are regarded as splendid properties of their kind. Work upon other claims on Latouche Island, and in Boulder and Landlock

bays, has been carried on with characteristic energy during the season, with a strong assurance that several of them will soon be added to the shipper's list.

North and east of these deposits of copper ores upon Prince William Sound, possibly 200 miles, is a district which is regarded the richest of all in the ores which contain this metal. Litigation over some of the richest claims has kept matters in uncertainty for several years. The decision of the ninth circuit court was given in the last appeal, late last year, and since that time plans have matured to construct a railway from tide water at Valdez to the copper mines on the Chitina River. The ores here are so rich, and there is so much in sight to be mined at a small cost that as soon as transportation to the coast shall have been well established, this region will rapidly advance until it becomes the leading place in the production of this metal.

The immediate future for Prince William Sound in connection with copper is very promising, for simultaneously with these developments is the opening of the vast coal deposits upon Comptroller Bay, the quality of which is said by our geological experts to be the best on the Pacific coast. Copper is not wanting in southeastern Alaska. On the southern part of Prince of Wales Island shipments of ore from different claims have been made from time to time for several years. As development went on assurance became stronger, and finally two smelters have been erected, one on the west side of the island at Copper Mountain and the other on the east side at Hadley. The west one has started to work and the other is complete and is storing large quantities of ore in the bins before lighting fires.

These are very great and we may say bold undertakings, when all the difficulties with which their promoters have had to contend are taken into consideration, such as transportation, labor, and proper fuel. But they have grappled with these problems, and feel satisfied that they can solve every one of them, and enjoy the great reward in store for them. Put Alaska down as a copper producer.

TIN.

Following the discovery of gold near Nome, prospectors spread over Seward Peninsula in all directions. As they proceeded west, they found gold in certain quantities in the streams in the York district , not far from the very verge of the North American continent at Prince of Wales. They first found a weighty gravel which bothered them in sluicing. They did not know that it was stream tin. The next fellows were wiser and made locations. This was in 1900, and since that time, work and explorations have shown that Alaska has large deposits of tin ore. This past season has exhibited great activity aro nd Tin City. One company, which has been mining the ore, has been using electric drills. They have been sinking shafts and cross cutting the ledge, and after driving 70 feet from one wall had not found the other. They have a 20-stamp concentrating mill, and 700 tons of ore upon the dump.

Other groups of claims have been bonded for very large sums. It would seem, therefore, that there is a probability that in the near future tin from Alaska will go far in supplying the demands in our own markets, which is large and constant, and requires more than 40 per cent of the world's present output to satisfy. We have advanced in the tin-

plate industry so rapidly that very little is now imported. With tin from our own mines, we shall no doubt be seeking for foreign markets before long.

SILVER.

This metal has been produced in considerable quantity from the galena ore in the Sheep Creek mines near Juneau. Large galena deposits rich in silver were discovered at the head of Fish River, emptying into Golofnin Bay in Norton Sound. Ten years later the Pioneer lode claim and the Omilak lode claim were surveyed and patented. The tumble in silver and the hardships and the cost of getting a start in mining in that part of the country has caused these great deposits to remain dormant all these years. The history of the Omilak mines will be a most interesting episode when the story of the beginning of mining in Alaska is told.

COAL.

Alaska is rich also in this indispensable article. It is well distributed over the whole area in its different grades. The fields, about 25 miles inland from Comptrollers Bay, are very promising, and much development work has been going on and will go on during the winter. Some companies have already spent a great deal of money in driving tunnels for a working basis. Their greatest drawback is the want of proper harbor facilities for deep seagoing vessels. It will cost a great deal more to provide these than it will to open the mines.

All these matters are under careful investigation and study by able engineers. The coal in quantity is almost beyond calculation, and in quality is put down by the experts of our geological survey as the best on the Pacific Ocean. This one resource alone would assure us an important place in the commerce of the North Pacific which has just begun to grow with such vigor.

The Alaska Central running north from Seward expects to tap important coal fields on the Matanuska River and deliver the coal at its bunkers at Seward. There is good coal at Cape Lisburne in the Arctic on nearly the sixty-ninth parallel. The future development of the camps on the Seward Peninsula will cause the development of these stores of fuel.

PETROLEUM.

Alaska Peninsula, at Cold Bay, the grounds near Lake Illiamna, and the territory east of the Copper River delta are oil bearing. Much has been done in drilling, but so far no wells are producing oil for the market. The quality of what has been obtained is of the best. The companies who have been drilling in the Kayak district have coal claims as well, and this season they have been devoting most of their energy to the surveying and development of the latter.

GYPSUM.

A new industry has started in southeastern Alaska. There is a large area of gypsum upon the east side of Chigagoff Island, a little south of Point Augusta upon Chatham Strait. The Pacific Coast Gypsum Company, made up for the most part of business men in Tacoma, Wash., has been exploring this field for more than two years. They cover twenty-two claims, amounting to about 450 acres. Devel-

opment and tests appear to have been satisfactory, for a definite plan has been adopted and is being carried out.

In July a large barge loaded with 1,200 tons of supplies, together with a raft of creosoted piles, were towed from Tacoma to the camp here, which is now named Gypsum, and which will doubtless soon be a post-office. A strong wharf capable of sustaining heavy bunkers is to be built. From the sea wharf there will be a railroad to the quarry of about 1¼ miles, where large bunkers are to be erected. It is the purpose of the company to have their reduction works in Tacoma, expecting to start with a plant capable of manufacturing products to the amount of 50 tons daily.

There is a steady and growing demand for these on this coast. The company's great advantage will be the cheapness and facility with which it can handle all its material. The whole distance from Tacoma to their plant here in Alaska is practically an inside route as calm as a lake, where immense cargoes can be towed in safety at a small cost per ton. It will hardly be possible to handle such material on railroads in competition.

MARBLE.

Another industry akin to that of gypsum is that of the opening up of the marble quarries. Locations of this material have been made upon both sides of Prince of Wales Island. The samples which were on exhibition at St. Louis and in Portland were most satisfactory to those who were capable judges. It is understood that contracts have been entered into for the delivery of large lots on Puget Sound. Here, too, the operators have a great advantage in cheap water transportation direct from their derricks to the wharfs below.

Other things like clays, ochers, iron, and even diamonds will come in time. It would be strange if diamonds were not found here considering that volcanoes have been very active in past ages.

FISH.

Salmon.—The total pack of the canneries for the year will be more than 1,500,000 cases of 4 dozen 1-pound cans to the case. The Alaska Packers' Association report their pack at—

Bristol Bay	640,962
Central Alaska	198,760
Southeastern Alaska	82,277

The Northwestern Fisheries Company report—

Orca	34,519
Nyak	31,120
Nushagak	58,447
Chignik	61,006
Dundas	24,221

A number of canneries were not in operation. The world's markets do not appear to be active in taking up these products, and as a consequence prices hold rather low, unless it is for the choicest brands. If the cannery men will not agree among themselves upon rules and regulations for the manner of cleaning, handling, and packing of this article of food, and thereby gain a reputation for the most scrupulous care, then the Government should take the matter in hand and lay down rules for rigid inspection and have an officer at each cannery to see that they are complied with.

Canned salmon is a delicious article of food, and the price at which it sells brings it within reach of wage-earners. Its preparation can not be attended with too much care. It would be well to require that all Chinese, Japanese, Italians, Swedes, Norwegians, Portuguese, Porto Ricans, Filipinos, Guamese, and other nondescripts who work in these establishments shall undergo medical examination before permission to labor is granted.

The cannery people might consider this step harsh and even severe, but they will find that the confidence in the mind of the public will fully compensate them in the sale of their goods. The visits of thousands of tourists to some of the canneries in southeastern Alaska this past season has not been a good advertisment.

One illy conducted work condemns the whole industry in the minds of very many of these people. Nearly all have been careless in caring for the offal, letting it go to waste and to defile the whole surroundings. The quarters of the Chinese and other help and the mess houses are left in an untidy and unsanitary condition. The cannery men owe it to themselves to mend their ways in these matters.

There is not much to add to what has been said in previous reports in regard to the enforcement of the laws for the protection of salmon going to their spawning grounds. Letters of complaint from various natives and others have reached the governor's office through the Interior Department to the Department of Commerce and Labor, whose agent is charged with the duty of seeing that the laws are complied with.

Halibut.—The waters of Alaska are well stocked with this fish, and now it is beginning to be taken in large quantities during the winter season. The steamships plying in southeastern Alaska give pretty low rates of freight for the sake of getting the return cargoes. The fish are caught for the most part in the inner passages and are put up in ice in large cases, the glacial ice sometimes floating by the platforms upon which the fish are handled. Steamers call at these places and take the shipments to Seattle, where they are rehandled, put in refrigerator cars, and sent to various eastern markets. This industry will increase from year to year. Thousands of our people of the New England coast could find steady employment if they were engaged in it.

Cod.—This kind of fish is very abundant in Alaskan waters, especially on the large banks to the westward. Some vessels from Puget Sound and San Francisco are in the business, but we have no certain statement as to the extent of the catch. Practically it is an untouched resource.

Herring.—These fish are not put up in large quantities for market, either salted or smoked, but in places there are very fine samples, both as to size and to fatness. The oil and guano factory at Killisnoo upon Chatham Strait, for the most part, take herring for their works. Steam cooking the fish and then putting them through a hydraulic press for the extraction of the oil, the residuum is put through a process of treatment to turn it into a fertilizer, which seems to find a ready and profitable market. This establishment is carried on year after year in an orderly and quiet manner. This plant turns out several thousands of half barrels of select herring salted.

At Juneau an experiment has been going on for putting up small fish for sardines. They have begun on a small scale, but the product seems to give entire satisfaction, and the emand is increasing. At

Taku Harbor, south of Juneau, there is a cold-storage plant in operation which handles the choicest fish—salmon, halibut, and other kinds—and sends a large percentage of them to European markets.

The wealth of the sea along Alaskan shores, as time progresses, will bring her inhabitants about as much wealth as her hills and valleys yield up in gold.

FURS.

This fur business is still an important one. Many independent collectors come to the country and travel from place to place. The finest grades they can place in small compass and no doubt handle them as personal baggage, and it is doubtful whether their value enters into the amount which is given in the statistics of the exports of the furs and fur skins, which is given at nearly a half million dollars.

AGRICULTURE.

What the Russian state officials thought of the possibilities of agriculture is seen in a paragraph of the letter of the actual state counsellor, Kostlivtzof, to Secretary Seward, before cited. He said:

> In addition to this, the soil itself being perfectly barren and unfit for either agriculture or grazing purposes, there was no reason why the natives should endeavor to extend the limits of their lands. The Aleutian Islands may attract transient traders, but no permanent settlers. To inhabit them one must be an Aleut, and if it were not for the sea surrounding the islands this country, owing to its unfavorable climatic conditions and the sterility of the ground, would never have been inhabited at all.

He apparently did not know that when any employees of the Russian-American Company petitioned to be allowed to remain in Alaska the "Company is bound to furnish them with suitable dwellings and with necessary implements for agricultural purposes, and also with implements for making their living—fishing, hunting, etc.; also, with cattle and domestic fowls, with grain for sowing, and with victuals for one year." Nearly every Russian settlement had some cattle and patches of ground for vegetable gardens. It was not the purpose of the company to exploit the country for its agricultural possibilities.

We are now slowly becoming better acquainted with what the ground naturally produces in the different parts of the district, and we are learning what can be done with plants and animals, by trial at four experiment stations, located in different parts, as well as by individual settlers.

All who are interested in this matter, and are anxious for information somewhat in detail, can do no better than to read the annual reports of the Alaska agricultural experiment stations, published and distributed by the United States Department of Agriculture.

Weather conditions this past summer have been favorable upon the coast, and wherever reasonable efforts have been put forth to plant and cultivate the returns have been satisfactory. These results are so contrary to preconceived notions that the owners of successful growths of strawberries, cauliflower, potatoes, and other plants, rejoice like the woman who found the lost coin, and call upon their neighbors to share their pleasure. In the interior, however, the weather has not been as favorable as it was last year.

The reports sent to the Bureau of Statistics show that during the year ended June 30, 1905, $5,237 worth of agricultural implements were shipped into Alaska; not a large amount, but certainly significant.

There are four experiment stations in the district; one at Sitka, one at Kenai on Cooks Inlet, one at Copper Center 105 miles up the river from salt water, and one at Rampart on the Yukon. The station at Sitka is given largely to the cultivation of nursery plants and their distribution. The Kenai station has in hand the testing of native and imported grasses and dairy work. The other two stations have been testing grains.

At Copper Center the first frost of the season was on the 14th of August. The different kinds of grain were in a healthy condition up to that time. The superintendent reports that before that date he had matured one kind of oats, Burt's Early, and had secured 4 bushels well-matured grain. Of another variety, which he harvested after frost, he secured 25 bushels which appeared to be perfectly matured. The other grains were in the milk and dough and would have fully matured in one or two weeks more.

However, they made excellent hay, which has been retailing in that quarter for as much as 20 cents a pound. While Rampart is 120 miles north of Copper Center, weather conditions there seem to be more favorable than at Copper Center. At this place the season opened two weeks later than last year, and consequently they were later getting in their spring seed. The first frosts came the 26th and 27th of August. However, several kinds of grains matured, particularly barley and oats. All details of this matter, of temperature, rain, etc., as given in the report, are exceedingly interesting to all who have had faith in the great possibilities that await the settlers in these Alaska river valleys.

DAIRYING.

The Bureau of Plant Industry, at the urgency of Prof. C. C. Georgeson, agent in charge of the experiments in Alaska, sent C. V. Piper, one of their agrostologists, to make investigations during the summer of 1904. The result of his work makes a very interesting part of the report for last year, which has lately been issued. On the subject of dairying he says:

> Milch cows of various breeds have long been kept at most of the coast settlements, and the common testimony is that they do excellently well while feeding on the green grasses. Professor Georgeson's tests have demonstrated that they keep up an excellent milk flow on beach-grass silage, and doubtless the other grasses are quite as nutritious.
>
> For two reasons I am impelled to believe that the utilization of the Alaska grass lands will yield most profit through dairying, (1) because of the necessarily long feeding period—five to six months—during which only dairy cows yield a compensating return, and (2) the freight to distant markets on concentrated products like butter and cheese is not a serious factor.
>
> There are many admirable sites for dairy colonies or settlements, not only on Kodiak Island, but also on other islands and on the mainland. Dairying is to be one of the chief industries in the proposed Finnish Colony on the Kenai Peninsula. With such an enormous wealth of grass as southwestern Alaska possesses it is difficult to doubt that it will become a great dairy country. It is doubtful if equally good opportunities for colonies of dairy husbandmen can be found in the United States to-day. Certainly there is no place left where 320-acre homesteads of magnificent grass lands can be had for the taking.

Any fair-minded man will see how important it is to carry on these investigations and experiments, and it is sincerely hoped that in view of the present anticipated good that they do and will do that Congress will continue to support them, and more liberally if possible.

RAILROADS.

The question of railway transportation and its regulation is probably the most absorbing issue before the American people to-day. Congress has a free hand in Alaska and now is its opportunity to lay down certain broad principles of action, as the roads are a necessity. The Government can aid in such a manner that its Treasury will not be one dollar short. Some of the companies which are now organized for building are not asking nor do they care to have Congressional aid. They have studied conditions well and are not going ahead upon reckless calculations. But will it be wise public policy, in view of all the serious questions that are now connected with railway carrying, to allow these corporations to construct these lines of road across the public domain without any restrictions whatever?

Congress can now gracefully come forward to lend a helping and directing hand. If both Houses would at once organize permanent committees on Alaska, to whom all bills could be referred, then all these matters could be handled in an intelligent and orderly manner and settled. Several lines of road are projected and the promoters and friends of these will be asking attention. Altogether they will take up much time, and it is almost imperative, therefore, that Congress prepare itself to deal better with affairs touching Alaska.

There arrived on the steamship *Santa Clara* in August at Valdez two parties representing different interests. Each proposes to build a railroad from Valdez to Copper River and beyond, probably to Tanana and the Yukon. One line is termed Valdez-Yukon Railroad Company, with present head offices at 63–65 Wall street, New York City, the other Copper River and Northwestern Railway Company, with Mr. John Rosene, president, whose office is in Seattle.

Both of the companies are now at the actual work of construction. A line called the Alaska Short Line has been projected and surveyed to run from Iliamna on the west of Cook Inlet and head of Alaska Peninsula across the Kuskokwin to Anvik on the Yukon. Mr. J. T. Cornforth is president, and has his office in the Bailey Building, Seattle.

A considerable amount of railroad construction has been done upon the Seward Peninsula, and very much more is required to meet the wants of the different mining camps in that section.

The Alaska Central, leading from Seward, at the head of Resurrection Bay on Kenai Peninsula, is pushing ahead all the time. The roadway has been cleared for more than a hundred miles, and about 30 miles of it are in use. The length of the road is expected to be about 420 miles, terminating somewhere in the Tanana, toward Fairbanks. Seventeen hundred men are now at work, and it is the intention to keep at it all the winter. Last year was so favorable that they worked right along without stopping. January was as fine a month as they had. The winters, however, are not always alike along the coast, but in the interior, beyond the coast range, there is but small variation.

Great things are promised from the Sushitna Valley, and if a gold field is opened up there the Alaska Central will be in time to do the hard work which has been done in most every other camp so far. The man who has staggered with blistered back under his load for days knows that a railroad is a blessing. They are wanted, but are wanted to serve the people, and not become their masters. For this reason it is considered advisable that every road which is constructed in Alaska

should have the sanction of Congress. It has already made provision for right of way, for land sufficient for stations, sidings, and terminals, and the use of timber and stone for construction.

By guaranteeing the interest on bonds at a certain rate of interest, to run for a term of thirty years, it could demand certain things as necessary. This will help the roads, and the public will feel assured that they will be properly conducted.

The license law requires railroads to pay $100 per mile for each mile operated; and ocean and coastwise vessels doing local business for hire, plying in Alaskan waters, registered in Alaska, or not paying license or tax elsewhere, $1 per ton per annum on net tonnage, custom-house measurement, of each vessel. As it should be one of the main objects to encourage transportation, would it not be well to forego the collection of these licenses upon railroads and shipping?

CABLES AND TELEGRAPHS.

We are thankful for the service rendered through the Signal Corps of the Army. The hardships endured in the construction of the land lines were many and severe, and were met bravely. Many of the efforts now put forth in blinding blizzards and in times of intense cold to maintain uninterrupted communication attest a devotion to duty amounting to true heroism. There are not many fault-finders with this service. We like it so well that we want it extended right along as rapidly as possible. When the wires were first stretched the men did the best they knew, according to the knowledge of the topography of the country. They know more now. They have studied storm, and floods, and fire; they know where short cuts can be taken over better routes. There is constant and effective work to be done in maintaining the lines of service now in operation.

But we want extensions. Ketchikan is too important a place topographically and commercially to be outside of communication. It is the first and last place where steamships touch as they enter and depart in Southeastern Alaska. The cable from Valdez to Seward by the Burnside was a timely piece of work. Railroad building is going on with 1,700 men at work. The cable should go to Kodiak, and thence to Dutch Harbor, as soon as possible. The wireless from St. Michael to Safety Harbor has worked so perfectly that it should be extended to the Seal Islands, to points on Bristol Bay, and to Dutch Harbor. It should not be forgotten that during the fishing season there are eight or ten thousand people in this bay, and millions of dollars worth of property at stake. They should be connected, and neglected no longer.

We sincerely hope that Congress will devote the tolls, which the cables and telegraphs earn for the commercial messages sent, wholly to the maintenance and extension of this service. It would be in harmony with the plan of allowing each incorporated town to use all the license money which is collected for its schools, fire protection, and other purposes. Such a use of the tolls for the extension of the service would satisfy most people who use the wires, and they would continue to pay present rates without growling.

The service is here to stay, and all expenditure in connection with buildings and quarters should be made with an eye to permanency. In all places the corps should be in its own buildings, put upon land whose title is in the Government. On account of the lonesomeness of

many of the interior stations and the severity of the cold in winter as great a degree of comfort should be given to the men as it is possible to grant. If the workers are well provided for we shall have good service in return, for a superior class of men will be drawn into it to stay.

LAND MATTERS.

In previous reports, the condition of land affairs at Sitka has been explained, and Congressional action has been asked to relieve the people, so that they may know what they own, and be able to convey a lawful title when they may wish to dispose of any land which they have claimed for so many years. Secretary Seward appeared to be anxious about the matter of private ownership of lands, and through our minister at St. Petersburg made inquiry of the Russian Government. Answer was made, through Actual State Counsellor Kostlivtzov, as follows:

The imperial government, while granting to the Russian-American Company for a determined period the exclusive possession and use of our territory in America, conceded to the company the right (Statute, chap. 8, sec. 2, par. 228) "to settle upon fitting grounds those of the old servants who would be willing, and to supply them with dwellings and implements at the cost of the company." Otherwise as to the apportionment of lands to such settlers there were no particular regulations, restrictions, or formalities. Usually the chief administrator, conforming to the statute (par. 162), at the installation of an applicant for settlement, or of his family, assigned a place for the new settlement according to his own better understanding; and this special designation of whereabouts gave the settler the right to occupy and use such area of land and trading grounds as he could or thought it necessary to occupy for his housekeeping and fishing requirements; only in order to avoid contests between the settlers and the natives particular attention was paid to the division between them of streams and other trading places, so that neither the natives nor the colonists could have any right to fish or hunt upon grounds to them not assigned. Under this system of distribution of lands and trading grounds the first occupation and using of a certain locality, whether by an individual or by a community, notwithstanding the lack of formalities, conferred unquestionable right of possession, and therefore in case that these territories would have to revert from out of the competency of the company into the hands of the imperial government, said right would be recognized and formally confirmed for the future as right of property. Such settlers exist in the districts of Kodiak, Athka, and Ounga, and belong, all of them, owing to the character of their housekeeping and trade, to the section (register) of country inhabitants. Moreover there is a certain number of individuals who hold the right of possession in the port of New Archangel. Some of them possess but houses and yards in the limits marked upon the plan of the port of New Archangel. Others possess in addition field grounds. Upon the whole the settlers who live in New Archangel, considering the local conditions of their life, can not be properly counted to the number of citizens, as well as the port of New Archangel itself can not be properly called a city.

If, at the actual transition of the territory under the rule of the United States Government, a division of land estates and a formal recognition of property rights, together with the fixing of boundaries, should be deemed necessary, then, in reference to existing settlers, either aliens—that is, colonial citizens—or creoles (denominated by colonial registers "colonial citizens") it would be equitable to adopt, as basis of definition of limits, certificates attested by local colonial authorities, wherewith some lots, as, for instance, yards and gardens, would be, if necessary, recognized as private property, and others, as shores, meadows, woods, streams, etc., as communal property of the settlers of each separate locality.

Mr. Seward accordingly instructed our commissioner, General Rousseau, to draw up and sign full inventories, distinguishing between the property to be transferred to the United States and to be retained by individuals. In his report he said:

I found that by the charter of the Russian-American Company it had authority to vest in its employees, occupants of land in the territory, the title thereto. This was

on condition, however, that the possessions of the Indians should not be interfered with.

Acting under this charter, the company from the first caused dwellings to be erected for the use of its employees on lots of ground set apart for the purpose. The title in fee to such premises was often vested in the employee in possession when he had faithfully served out his term in the company, or, having died before it ended and having a widow or children in the territory, the title was frequently vested in them.

Finding in its charter this authority of the company to vest title to land in its employees, and that very many of the dwellings erected by the company were occupied by employees or their widows and children, who claimed the property in fee, the commissioners called on the governor, Prince Maksoutoff, to define and certify to the interest of each individual thus occupying such dwellings and lots in order that we might distinguish between those who owned the property in fee and those who claimed a less interest, and, in compliance with your instructions, give certificates to the claimants accordingly.

The inventories, respectively marked C and D (forming part of the protocol), which was forwarded with this report, will show in part the action of the governor in the premises. For the rest he gave a certificate stating the interest of each occupant in the premises occupied, on the back of which the commissioners placed their approval, and it was left to be delivered to the occupant.

In order to be accurate and prevent disputes hereafter about the title to houses and lots, a map of New Archangel was made (forwarded with this report), on which every house and dwelling in the town is located and numbered, and as between the claimant and the United States the title defined to it and settled in the inventories. This was thought necessary in order to give, in accordance with your instructions, to each man of property who desired to dispose of it, a certificate of title.

The town of New Archangel (now Sitka) was built in the main by the Russian-American Company, and, except the dwellings transferred by them to their employees and the public buildings transferred to the United States, is owned by that company still; yet it has but a possessory interest in the land, as it only had permission to erect buildings upon it; for, although it had authority to vest the title of lands in its employees, it had no power to vest such title in itself. The commissioners left the matter as they found it and the company in possession of its buildings.

Alas, the care which was taken to prevent disputes did not bear fruits, for one of the buildings left in possession of the company and listed as private property on inventory D was sold for $3,000 in gold to John H. Kinkead and Samuel Sussman. It was soon after taken from them by military order. There being no courts on the coast which had jurisdiction, Congress at last passed an act allowing the purchasers to present their case in the Court of Claims. This tribunal decided against them. They appealed to the Supreme Court, and it is the decision of this court of last resort that has been so disturbing and upsetting. There was a nonconcurrence on the part of two of the most able justices, namely Shiras and Field. The opinion was delivered by Mr. Justice Brown, who closed with this paragraph:

> The truth is that the whole case of the claimants depends upon the question whether the government was bound by the proceedings of the commissioners in the execution of the treaty. As we have already expressed the opinion that they possessed no power to vary the language of the treaty, or to determine questions of title or ownership, it results that their action was not binding upon the government.

As they did undertake to determine questions of title and ownership, whatever they did can be called in question, and possibly be set aside, as it was in the above case. Titles in Sitka, then, are unsettled and in uncertainty, and no one can convey more than a possessory claim. This is a most unsatisfactory condition for any community. It is now thirty-eight years since the transfer, and the people of this town are not able to say what they own. Congressional inquiry and action is imperative, for all titles now should be stamped with the authority of the United States Government

HOMESTEADS.

The homestead law for Alaska was approved March 3, 1903. It treats the homeseeker liberally, by allowing him to locate upon unsurveyed lands and to enter 320 acres. He must locate on the north and south lines by true meridian, and his rectangular tract must not be more than 1 mile in length. As locations are recorded in the nearest precinct where there is a recording commissioner, it is not known at the land office nor in the surveyor-general's office how many locations have been made since the law became effective. The best lands are in the river valleys. It is only the few who know the conditions and have some capital to start with who are willing to launch out. The cost of transportation any distance from salt water is too costly for the average immigrant. They will not be slow to follow the railroads as they are constructed.

There are no surveyed lands for entry, and at the present rate of progress several years must elapse before any lands will be surveyed and placed upon the market. It has been suggested in former reports that the work of surveying might be carried on by the officers and men who are stationed at the various forts in Alaska. Of course they are not hankering for the job, but their establishments are now very comfortable and of necessity expensive. There is no anticipation of any fighting to be done. The officers have had the mathematical training for the work. Already in the matter of roads and trails military officers are in charge. While the army was in charge of the country for the first ten years, and has but very little to show for that period, it would be unfair and unjust not to state its services in later years.

Lieut. P. H. Ray did a lonely service at Point Barrow in 1881–1884. Lieut. Frederick Schwatka went down the Yukon on a raft in 1883. Lieut. W. R. Abercrombie was in the Copper River Valley in 1884. The following year Lieut. Henry T. Allen made a hard trip up the Copper River Valley and across to the Yukon and down the Koyukuk. Capt. P. H. Ray and Lieut. W. P. Richardson were in the Yukon Valley during the winter of 1897 and 1898. Abercrombie was back in the Copper River country in 1898 and 1899. Capt. E. F. Glenn and Lieut. J. C. Castner did valuable work.

All these, with a number of other young officers and subordinates, have added to our stock of knowledge of the country. It is surely not too much to ask them to mark out the land and prepare it for the expectant homeseeker. To require these settlers to have the land surveyed at their own expense is more than they can stand, and besides the lands in every other part of our domain have been made ready for ownership at public expense.

SURVEYS.

In answer to questions on this subject the surveyor-general writes as follows:

OFFICE OF THE SURVEYOR-GENERAL,
Sitka, October 14, 1905.

SIR: In response to the request contained in your letter of the 13th instant for any information this office can give you regarding contracts for surveying meridian and base lines, and what has been accomplished therein, also relative to the progress that has been made in surveying the claims of the various missionary societies, I have the honor to advise you as follows:

Deputy A. B. Lewis, to whom the contract for surveying the Copper River base, meridian, and standard lines was awarded, reports that he has completed the field work under his contract and is preparing the notes thereof for this office. It is probable that his report will be received soon.

Under date of August 31, 1905, the honorable Commissioner of the General Land Office authorized the issuance of invitations for proposals to the United States deputy surveyors for executing the survey of 30 miles of base, meridian, and standard lines on the mainland near Controllor Bay and Kayak Island, so as to place the Catalla coal fields within range of the lines of the public surveys.

These invitations will be issued within a short time. It is hoped the way may be opened for establishing more lines of this class in different parts of the district in the near future.

Returns under one of the contracts for executing survey of mission claims have been filed and the office work on them is being performed. Reports from the other deputies having contracts for executing surveys have not been received, as the time limit for making returns has not expired. It is probable that more returns under these contracts will be submitted within a short time.

Very respectfully,

WM. L. DISTIN, *Surveyor-General.*

Hon. JOHN G. BRADY,
Governor of Alaska.

VITAL STATISTICS.

Attention has been called to this subject by the receipt of the following letter:

ALASKA CENTRAL RAILWAY COMPANY,
Seward, Alaska, August 18, 1905.

To the Hon. JOHN G. BRADY,
Governor of Alaska, Sitka, Alaska.

SIR: Under the existing code there is no provision made for the recording of births and deaths in Alaska other than perhaps in incorporated communities. This is so important that I desire to call your attention to it and urge that you give the matter through the legal department some attention.

Several thousand men are employed by the Alaska Central Railway Company, and more will be employed, and there should be some means devised if possible under the law that deaths may be recorded.

It is needless for me to point out to you that many of these men are here under aliases. Many of them have properties which subsequently may become involved in courts of law. Most of them have relatives who, after learning of the death, will write to the recording office to find out the date of death and cause of death. As it is now this could not be done, because there is no book kept for that purpose. Of course we keep a complete record and also a record in the office of the general manager, but this is not sufficient.

It is unnecessary for me to call your attention to the many questions involved in this subject, but one of the most important of all is the question of vital statistics, the record of which should ultimately find its way to your office, so that we may be able to tell the proportion of increase or decrease of population.

There is also no provision for the reporting of contagious diseases other than in incorporated cities. It is true that the United States commissioner is the coroner of the various districts, and only he has the right under law to act in matters of public nuisances and questions of public health.

I feel that this is of sufficient importance, and would be very much obliged to you if you will write me what, in your judgment, is the best procedure.

With kindest regards, I beg to remain,

Very truly, yours,

ARTHUR E. BURNS,
Chief Surgeon.

Letters of inquiry come to this office through the various Departments at Washington and some of them through the foreign embassies. Relatives have come here and have disappeared or have been killed, etc. Estates and insurance matters await settlement until authentic information can be obtained. It is but seldom that we are able to send in reply satisfactory information or such as will be of the least service. The several judicial divisions are now divided into commissioner's

precincts, and it will no doubt be the best to impose the duty of keeping a record of births, deaths, marriages, the insane, etc., upon these officers who now exercise the functions of coroner among other things.

HOSPITAL IN BRISTOL BAY.

A large part of the license fund is derived from the fishing industries upon Bristol Bay. The great numbers of men who congregate in these parts in the fishing season are left hundreds of miles from any adequate surgical or medical remedies when misfortune befalls any of them. For a while the United States Marine-Hospital Service maintained a hospital with a certain number of beds at Dutch Harbor, but it has been abandoned. The service required at Bristol Bay is so near like that of caring for sick and disabled sailors that the Marine-Hospital Service is the proper channel through which Congress can provide for these thousands so miserably situated. The following letter from a man who knows well the conditions is a plea for action:

503 Van Ness Avenue,
San Francisco, Cal., October 5, 1905.

To His Excellency John G. Brady,
Governor of Alaska, Sitka, Alaska.

Dear Governor: There will come to you a petition from the Fishermen's Union and other unions, whose members go annually to Alaska, asking of you a Government hospital, for the care of any who may need the same. The fishing industry is larger than is supposed and the men engaged in the same have more needs than is commonly understood.

The different canneries can not afford to each of them have a hospital for the care of their sick or injured, nor would the talent secured at the low prices paid by the canneries for a doctor give them a man competent to give desirable care to the sick.

As it is, men with families at home are often forced to lose time and wages where suitable help would have promptly allowed them to go to work, and there are bona fide cases on record where loss of time was not all, for several cases have died, where, according to good reasonable estimate, there was no occasion to die had help been there in the form of hospital care.

Prospectors are giving time and all they have for the advancement of the country, settlers are grappling with the problems of a livelihood, winter watchmen are caring for the plants of extensive industries, and natives brought to face the influences of frontier civilization—all and each of them are in need of the consideration of the Government. Only this past summer an insane man was retained all summer in jail, when he should have been in a hospital under Government care.

There exists to-day no greater crying need in all Alaska for a good Government hospital than on the Nushagak, for all of Bristol Bay. This need is so urgent and so imperative that not only in the interests of humanity should it be established, but in the interests of the future development of the Territory it is most urgent. Thousands of dollars are taken in revenue from that region for the Alaska fund, and the region does not need roads, as the law provides, but a hospital for the good of the men who are making it a vast region of revenue.

I am, most respectfully, J. H. Romig.

NATIVES OF ALASKA.

At first after our occupation of the country the native race was given hardly any attention whatever. The treaty said:

> The uncivilized tribes will be subject to such laws and regulations as the United States may from time to time adopt in regard to the aboriginal tribes of that country.

About the only regulation that has been made in regard to them was that they should not have whisky, fixed ammunition, nor breech-loading arms.

The Russians first came in contact with the people of the western Aleutian Islands, and advancing eastward made their headquarters at

St. Paul, or Kodiak, a place about 650 miles west of Sitka. As they brought but very few of their women to this country they mixed with and married native women. The Aleuts, who were a gentle stock, were brought under the influences of the Russian forms of worship and became devout in all the ceremonials of that church.

As the prime object of the Russian company was the gathering of furs, especially the sea otter, and the Aleuts being skillful hunters, they received the fostering care of the company and were looked after and provided for in their different communities. It was not so with the natives of southeastern Alaska, when the Russians changed their headquarters to New Archangel or Sitka. These Koloshes, as the Russians call them, and Thlingits, as they call themselves, were a bold, hardy race and fought for their hunting grounds. The Russian Governor Baranoff brought hundreds of Aleut hunters with him from the westward. Their original settlement, 6 miles north of the present location, was massacred by this people, and although in a manner they subdued them, yet they lived in fear of them and took every precaution for their defense, surrounding the town by a heavy stockade and having a great many guns mounted and pointed on the place where they compelled the natives to settle.

The Russians did not penetrate into the interior but a very little distance. On Kenai Peninsula they had some slight dealings with the natives from the interior, who came down occasionally to barter their skins. They had advanced as far as St. Michael, near the mouth of the Yukon River, and did some trading with the Eskimos of that region. But in no wise did they influence the lives or customs of these people.

For thirty-eight years we have been drifting along, and, as a government, we have not been remiss in looking after their condition, but we have never seriously gone into the matter and studied it in its details to meet all the difficulties. Many of the denominations of the Christian church have entered the field with missionaries. The Presbyterians, the Roman Catholics, the Moravians, the Methodists, the Baptists, the Episcopalians, the Friends, the Swedish Evangelical, have all been doing work among the native people, and while there may have been and there are things to criticise, yet there is no denial of the fact that the uplift has been great and the conditions of a large number of these natives have been improved.

Schools have been put in operation, new modes of living have been introduced, and new wants and desires have been created in the younger people. The natives in southeastern Alaska are, to all intents and purposes, ready for citizenship. They are hardy, hard-working, industrious people, and have always been self-supporting. They take quickly to mechanic arts, and are desirable workers in our canneries, salteries, and mines. They are really in a transition state, abandoning their old customs, and accumulating property. They make use of the post-office, travel by the local steamers, get married according to our laws, pay licenses like other people, when they establish little stores.

The young people aspire to citizenship, and desire to have their full political and civil rights, and are not asking for any special legislation. One thing, however, should be done in their behalf, attention to which has been called in previous reports. Consumption has made sad inroads on their numbers and continues to do so. They do not know how to combat it, and not knowing the nature of the disease

their habits are sure to spread it. This need can be met in an efficient and intelligent manner by the Government providing a central hospital, well provided in all its details. It would probably be well to put it under the direction of the Marine-Hospital Service. The physician in charge should be instructed that he himself or one of his helpers should visit every community and give talks on consumption—what it is and how to avoid it—talks on contagion and cleanliness, and upon such visits he should look after the sick and disabled in every house, and provide necessary remedies. It is surely not asking too much of Congress to provide such an institution in behalf of these people. They are worthy and useful in the building up of our towns and communities, because they are willing to be hewers of wood and drawers of water.

Now, upon the Aleutian Islands and places to the westward we find a different state of affairs. The chase for the sea otter has about ceased. Very few are taken any more. The traders, who were the successors of the old Russian company, have turned their attention to other matters, and the whites are entering for prospecting, fishing, and other pursuits, but the Aleut has faded out of sight. The Greek priest is still with them and performs his kindly offices. They have attempted to keep up their parochial schools, using the Russian language, and teaching church ceremonials.

The habits of the natives in many places have become bad through the use of whisky, when they can get it, or a manufactured article made of flour and sugar, when they have the means to get these articles.

Those who are in the neighborhood of great canning establishments are but little or seldom employed on account of their inebriety and irregularity. They have the ability to do the work as well as the Chinese, and the cannery men know this, but they have not time nor inclination to train them for work which must be done in a very short season, consequently we have reports coming from Kodiak Island and other places of the destitute condition of numbers of families.

A letter recently written to the President, and forwarded to this office, is herewith given.

THE KODIAK BAPTIST ORPHANAGE,
Wood Island, Alaska, August 31, 1905.

SIR: I have the honor to inclose a statement from one of the natives from the south end of Kodiak Island concerning the condition of affairs among the people there. I believe that they have excited some interest among Government officials, and on two or more occasions a representative of the Government has been sent to inquire of their condition.

According to this paper you will see that there are 113 families, in five villages, who subsist almost wholly upon fish. The nearest place from here is Eagle Harbor, distant about 40 or 50 miles.

We have several of the boys and one girl from that part of the country in our mission, and they are industrious and willing to learn. From this I judge that the people in the several villages would be glad to learn methods of farming and stock raising, and that they would be able to make a far better living for themselves and to be in a more healthful condition generally.

I have never seen the location, but have made careful inquiry of many persons who have a full knowledge of conditions there, and I am convinced that there are many acres of good pasturage and hay land and some considerable plots where the ground could be tilled to advantage.

I believe that if a man and woman (man and wife) who are interested in their fellow-man who is less fortunate than they could be sent there, with the duties similar to those of farmer and field matron on our Indian reservations, and the several towns could be supplied with a herd of cattle and a team of steers each, besides poultry, goats, etc., it would be an excellent means of assisting the people of the present and especially of the future generations.

It might be possible to gather them into fewer places, as they do not have much to hold them to any particular place. There are no schools for the children in these towns, and they have no outside influences, except that there is a store kept by a white man at Kaguyak and the priest of the Greek Church visits them once a year from Kodiak.

If this appeals to you I shall be pleased to have you refer it to the proper department with such suggestions as you deem proper.

Praying God's guidance over you as you administer the affairs of this Government, I am,

Respectfully, CURTIS P. COE, *Superintendent.*

The PRESIDENT,
Washington, D. C.

THE STATEMENT.

My name is Nicholai Amvihanak. I am 57 years old, and I have lived at Starigowan, on Kodiak Island, all my life. I have been in all the towns at the south end and know all the people, namely, in Starigowan, Kaguyak, Eagle Harbor, Iyakataliek, and Akhiok.

There is no work at any of these places, except at Akhiok, whereby the people can earn money. The catching of a few foxes is the only way others can secure money for provisions.

The food of the people in the summer is fresh fish and in the winter dried fish. There is little bread in the country. Tea is had only when foxes can be caught.

I believe the people would work if they had work to do and were taught how to do it.

Starigowan, Eagle Harbor, and Kaluda Bay would be fine places to raise cattle. Plenty of grass could be had for pastures and there are large flat places where hay can be cut.

The people in the places named raise a few potatoes, but only in small patches. Potatoes grow well.

At Starigowan there are 13 families, consisting of 50 people, 15 children of school age. At Iyakatalik I think there are about 40 families. At Kaguyak there are about 10 families. Akhiok has about 40 families, and at Eagle Harbor there are about 8 families.

In the summer time the people have enough to eat of fresh fish; in the winter they have only dried fish, and the seines they have had are very bad now. The fishery from which seines were procured has been closed, and none have been secured since.

There are a good many places where a large field could be made if there were means of plowing and seed were supplied for planting.

The people would welcome anyone who would come to teach them how to make the most of their country and its advantages. They have made their living from the hunting of sea animals and know little of farming and stock raising.

These five places are within two days' travel when the weather is favorable (that is between the extremes).

Many of the babies born die before they reach a year old. There is no doctor nearer than Kodiak, which is 59 miles from the nearest point.

NICHOLAI AMVIHANAK.

Witness:
NICHOLAI FADOOFF.

The suggestions in it are of the right kind, and, if acted upon, will in time put the people on their feet in the way of self-support. The two communities farthest west, at Atka and Attu, have been in a large measure neglected. They contain something like a hundred souls each. These people, together with the natives on the islands of St. George and St. Paul, could probably be put together in one community or possibly with those on Kodiak Island and started in with a stock of goats and implements to earn their support.

The natives upon seal islands are annually provided for by large appropriations. The same amount spent under careful management in the manner suggested by the Reverend Coe would meet the necessities of the people. There is another difficulty, however, in connection with these people, namely, the intermarrying of these small communities for so many years. They have been isolated for years and have intermarried so closely that they are all akin.

The native handicraft of the women at Attu and Atka, if properly employed and their products disposed of in their behalf, would bring them thousands of dollars, for their weaving of baskets and other articles is so artistic that lovers of the beautiful do not hesitate to pay great prices for the smallest objects. People with such gentleness and such innate ability as these native Aleuts possess should have kindly and generous support of the Government, to the end that they shall be conducted into a self-sustaining life more in accord with modern conditions.

As we go farther north in Bering Sea we have the Eskimos. It is noticeable that ethnologists, missionaries, and traders, who have had the closest contact with these Eskimo people, and who have studied them, appreciate them highly, and most always speak in their praise. A stranger studying them from books learns to regard them highly, when he considers the hard conditions in which they have been placed, and how they have met them and overcome them, and how every instrument is made with the greatest skill and seems perfectly adapted to the use for which it was intended.

They are a hospitable, genial stock, always ready to befriend the explorer or prospector when he is in need. The officers and crew of the *Rogers*, which was burned while in winter quarters in the Arctic, after they had been sent out to hunt for survivors of the *Jeannette*, gave unbounded praise to the good qualities of these people, and an officer was sent back to make presents to them in appreciation of their kindness.

New conditions have lately arisen among them and they find it hard to battle with them. The prospector has found gold, and he, of course, competes more or less with the native for food and materials which make suitable clothing for that climate. The whalers have found that they can winter in the Arctic and be ready to take advantage of the short season to secure their cargoes. Some of the captains, who are immoral and licentious to the core, and who have been under no legal restraint whatever, have not hesitated to treat these people as if they were mere cattle.

The missionaries and the newspapers at Nome have taken up this grievance and have brought it into daylight, and demand investigation. Some steps have been taken by officers of the court of the second division. The captain of one vessel was arrested, tried, and convicted, and sentenced to severe punishment. The appointment of the captain of the revenue cutter as a commissioner was certainly a move in the right direction. It is said that the whalers get into the Arctic Ocean before the revenue cutter gets north, and when the Government vessels do go they are unable to come up with the whalers and examine them and punish the evildoers. As Congress has the complete authority over the commerce of the country, it would be well to enact that no vessel trading or whaling north of the latitude of Unalaska should be permitted to carry native women for any purpose whatever, unless it is to save life in case of wreck. It might be well to require all whaling vessels to report to the custom-house officer at Nome before clearance into the Arctic Ocean, which departure should be deferred to a specified date set by law.

It is hardly supposable that all the whalers are guilty of the evil practices they are accused of in the newspapers, but enough has been ascertained to taint the whole business, and the good will have to suffer with the wicked in complying with the needful regulations.

INDIAN BOARDING SCHOOLS.

Section 7 of the law which was approved January 27, 1905, has this provision:

> And the Eskimo and Indian children of Alaska shall have the same right to be admitted to any Indian Boarding School as the Indian children in the States or Territories of the United States.

The plain intention of Congress in this matter seems to be inoperative by reason of lack of funds, as children from Alaska were not calculated for when the estimates were made. Estimates to cover the expense of at least one quarter more than are now at Chemawa and Carlisle from Alaska should be made and included in the annual appropriation. The children who are trained at these schools are helped a great deal, and there seems to be no just reason why they should be hindered from attending when they choose to go. The following correspondence passed on this subject:

DISTRICT OF ALASKA, OFFICE OF THE EXECUTIVE,
Sitka, Alaska, April 14, 1905.

The honorable the SECRETARY OF THE INTERIOR,
Washington, D. C.

SIR: The inclosed letter will bring to your attention the condition of a number of children at Chemawa. Orders were given from the Indian Bureau that these children should be returned to Alaska.

When I was in Portland on my way home from Washington, Mr. Campbell called on me. I then told him that the law which has passed since those instructions were received allowed the various Indian schools to receive children from Alaska, and as these children were already there it appeared unnecessary to return them to this district.

Upon my return I found a letter from him, which I answered in the same way.

I can do no more than bring this matter to your attention. So many children from Alaska have gone to Chemawa that the institution has become well known among our natives, and they seem anxious to send others.

Yours, very respectfully,

JOHN G. BRADY,
Governor of Alaska.

UNITED STATES INDIAN SERVICE,
INDIAN TRAINING SCHOOL,
Chemawa, Oreg., February 22, 1905.

Hon. JOHN G. BRADY,
Governor of Alaska, Sitka, Alaska.

DEAR SIR: Superintendent Chalcraft wished me to express to you his regret that you had not the time during your recent trip to Portland to visit Chemawa, and to express our desire that you visit the school on your return to Oregon. We should appreciate it very much.

In this I am sending a copy of a letter sent to the parents of the Alaskan children now at the school. From it you will understand the situation as it exists. We are under orders to return these pupils, and advices from Washington state that "they will not be allowed to remain unless special provision is made for them at this school." We have now 103 of the Alaskan pupils here and could comfortably care for them and 200 additional, but unless relief comes in the way of financial support, we will be compelled to obey the instructions of the Indian Office and return the pupils to their homes at the end of next month. I write you as above, knowing your deep interest in the education of the Alaskan Indians, and in the hope that relief may yet come for these people, who are so anxious for an education that they have, in the past, paid their transportation to the school, and the traveling expenses of these pupils have not cost the Government one dollar.

Yours, very sincerely,

W. P. CAMPBELL,
Assistant Superintendent.

OFFICE OF INDIAN AFFAIRS,
Washington, May 11, 1905.

The honorable the SECRETARY OF THE INTERIOR.

SIR: I have the honor to acknowledge receipt, by your reference, of a communication from the governor of Alaska, inclosing a letter from W. P. Campbell, assistant superintendent of the United States Indian training school at Chemawa, Oreg. Mr. Campbell suggests that provision be made under existing laws for the continuance and instruction of the Alaskan natives now in that school, and that in the future similar pupils may be received and educated at the Chemawa school.

In referring to this letter, Governor Brady says he can do no more than bring the matter to the attention of the Department; that so many children from Alaska have gone to Chemawa that the institution has become well known among the native Alaskans, and they seem anxious to send others.

This report is referred for immediate consideration and such recommendation as, in my judgment, the circumstances appear to warrant, with the request that the papers be returned.

It appears that this correspondence is based upon section 7 of the act providing for the construction and maintenance of roads, the establishment and maintenance of schools, and the care and support of insane persons in the district of Alaska, etc., being public—No. 26. The section referred to is as follows:

"That the schools specified and provided for in this act shall be devoted to the education of white children and children of mixed blood who lead a civilized life. The education of the Eskimos and Indians in the district of Alaska shall remain under the direction and control of the Secretary of the Interior, and schools for and among the Eskimos and Indians of Alaska shall be provided for by an annual appropriation, and the Eskimo and Indian children of Alaska shall have the same right to be admitted to any Indian boarding school as the Indian children in the States or Territories of the United States."

With regard to this matter I will say that prior to the introduction of the above provision it was submitted to me by Dr. Sheldon Jackson, agent for the Alaskan Indians. I agreed to the paragraph, with the proviso, however, that not exceeding 100 children should be admitted into the Indian schools of the United States, such schools to be designated by the Secretary of the Interior; that $10,000 be appropriated for the transportation of such Alaskan pupils to and from the schools selected, and also that $16,700 be appropriated for the education and maintenance of these 100 Alaskan pupils at $167 each per annum. I was opposed to the incorporation in the law of the first portion of the proposed amendment without the clause giving this Department sufficient money to care for and educate these Alaskans.

I am advised that it has been the policy of the Department for years to construe the Alaskans, so far as the Government control is concerned, not to be Indians, and not to bring them under the same rule and conditions applicable to the Indians of the United States proper. That theory seems to have been adopted by Congress in the legislation which placed the control of the Alaskan educational interests in the hands of the Bureau of Education.

This policy appears to me to be wise in the light of all the circumstances surrounding the Indians of the United States. Aside from this, a dual control would be created in the management of educational matters by both the Bureau of Education and the Bureau of Indian Affairs. Divided authority is not productive of the best results in administration. Again, the appropriations for the various Indian schools throughout the country are known and designated as appropriations "for Indian pupils." These funds are practically sufficient for the necessities of the Indian school service from year to year. The introduction of Alaskan pupils into these Indian schools, and it appears that many would take advantage of this law, would exclude just that many Indians of the United States from schools which have been established and appropriated for their benefit. I see no objections to the introduction of a limited number of Alaskans in some of the larger nonreservation schools, provided their care and maintenance is paid from a fund separate and distinct from that chargeable to the conduct of Indian affairs.

The view which I take of this matter is one of business and administrative policy. Sentimentally there could be no objection raised on the score of admission of Alaskan children into the Indian schools of the United States, as any ethnological division between the Indians and the Alaskans is so small that it need not be considered. But already the appropriations necessary for the conduct of the Indians of the United States are so large that it would be unjust to this office and to these people to use any portion thereof in the education of pupils, no matter how deserving, who were not contemplated in the appropriations.

I am therefore of opinion that it would be unwise to permit the enrollment of Alaskan children in the Indian schools of the United States until such time as Congress may specifically appropriate for their education and maintenance therein.

The papers referred to and copy of this communication are herewith inclosed.

Very respectfully,

F. E. Leupp,
Commissioner.

MEMORANDUM FOR THE GOVERNOR, PREPARED IN THE OFFICE OF THE SECRETARY.

The records of the Patents and Miscellaneous Division afford no information in relation to the placing of native Alaskan children of school age either in the Indian school at Chemawa, Oreg., or at Carlisle. Inquiry, however, disclosed the fact that, as to the Chemawa School, about twenty-five years ago the officer in charge of the Forest Grove School, near Portland, Oreg., wrote to the Rev. Mr. Young, a missionary at Fort Wrangell, Alaska, asking that Alaskan native children be sent to that school to be educated. Children were sent to the Forest Grove School pursuant to such request, and were subsequently transferred to the school at Chemawa, Oreg., when the school at Forest Grove was abandoned, and pupils have been received at Chemawa ever since. The exact number now in the institution can be obtained from the Commissioner of Indian Affairs. These pupils paid their own transportation from Alaska to the school, and were provided with food, clothing, and tuition at the expense of the Government.

As to the school at Carlisle it appears that in 1886 Dr. Sheldon Jackson commenced taking Alaskan children of school age to that institution, where they have been received and admitted. The expense of their transportation from the Pacific coast to Carlisle was defrayed by Mr. Pratt from such fund, whether as a result of donations or of Congressional appropriation is not clear, and others have been admitted and maintained at the expense of the Government. About a year ago the question as to the payment of traveling expenses of a number of Alaskan natives was considered by the Commissioner of Indian Affairs, and he declined to pay the same out of a Congressional appropriation. Thereafter provision was made in the deficiency bill for defraying such traveling expenses. No pupils have been sent to Carlisle from Alaska since Colonel Mercer succeeded Captain Pratt, though it is understood that he is desirous of having them sent there as is usual.

Section 7 of the Alaskan act of Congress, approved January 27, 1905, provides "that the schools specified and provided for in this act shall be devoted to the education of white children and children of mixed blood who lead a civilized life. The education of the Eskimos and Indians in the district of Alaska shall remain under the direction and control of the Secretary of the Interior, and schools for and among the Eskimos and Indians of Alaska shall be provided for by an annual appropriation, and the Eskimo and Indian children of Alaska shall have the same right to be admitted to any Indian boarding school as the Indian children in the States or Territories of the United States."

Under this legislation Eskimo and Indian children only (full bloods) have the right of admission to Indian schools in the United States, but no funds for the transportation of these children to and from the schools are provided for.

This act confines admissions to Indian schools to "children," whereas the Indian appropriation act provides for "pupils," without regard to age. If any admissions are permitted under the Alaskan act, then the same must be restricted to those whose ages are not above the limit of childhood.

REINDEER.

The introduction of reindeer from Siberia into Alaska for breeding purposes was a timely step in behalf of these northern people. It was hooted and ridiculed by that class of people who are always quick to condemn a thing before it has a fair trial. It is gratifying to record that this question is no longer a problem, so far as the fact of transportation and raising of these animals is concerned.

Some who used to decry the effort in their further propagation now are afraid that we are raising up a reindeer aristocracy in the north. We have immense areas where the food grows on which these animals feed and thrive. The breeding of them is a much simpler problem than the raising of cattle in Montana.

The Bureau of Education has had the matter in hand from the beginning and has certainly brought it to a successful issue. Like all other

undertakings of a similar kind, an unknown and untried field entered upon in face of harsh opposition and criticism, mistakes in methods and plans have no doubt been made, but the great fact should not be lost sight of that this undertaking can be made sure and certain for these northern people, and that there is no one thing we can do for them that will make them so independent and self-reliant as to establish them in this industry.

It is certainly right that Congress should still encourage reindeer culture and its extension for a number of years, for if the animal can be raised in great numbers they will be a benefit not only to the native Eskimos, but also to the whites who are destined to be quartered along with them, as the whole northern part of Alaska seems to be mineralized.

This office is not prepared to state the latest information as to numbers, and location, and ownership of herds.

SEALS.

At this time of friendly relations with Great Britain, Japan, and Russia, would it not be well for our State Department to take up the matter of seal hunting with these powers with a view to its entire suppression? We can ask this with a good grace, for we have for years prohibited any of our own vessels from pelagic sealing. Japan has not been a party to any of the negotiations so far, and her vessels are now entering Bering Sea and are restrained only by the law of the 3-mile limit.

Year by year the rookeries become smaller. The killing by the North American Commercial Company's agents this year has been reported to be 13,000 on St. Pauls Island and 1,300 on St. George. It would be good policy for the Government to come to a friendly understanding for the remainder of its lease, based upon the number taken the last five years, stop the killing altogether for eight or ten years, deport the natives on both islands, and keep there only the necessary agents to look out for the rookeries. Some such immediate action should be inaugurated if we wish to preserve these animals from entire extermination.

BOARD OF ROAD COMMISSIONERS.

Section 2 of the act of January 27, 1905, supra, provides for a board of road commissioners, to be composed of army officers and to be appointed by the Secretary of War. When the appointments were made Maj. W. P. Richardson was assigned chief place. This officer had had long acquaintance in Alaska since the winter of 1897, and his appointment to the first place was eminently proper. The board, after its organization, early in the season went to work. They provided for the location and survey of a wagon road from the head of Chalmondeley Sound to Hetta Inlet on Prince of Wales Island; for a survey of a road from Haines Mission to "Hindestucy" on the Chilkat to Wells, with a survey of the trail from Wells to the boundary line near Pleasant Camp; for the collection of data for a route yet to be determined from the head of Gastineau Channel to a point near the southern extremity of Berners Bay; for the work of relocation aud improvement of the trail from Valdez to the mouth of the Gokona River, thence by way of the head of the Big Delta to the Tanana and down that stream to Fair-

banks; for such work of improvement as the funds permitted on the roads leading from the terminus of the Tanana Mines Railway at Gilmore to the Summit, and thence to Cleary Creek, and from the Summit to Fairbanks Creek; for the preliminary reconnoissance and location of a road from Council City to the east fork of Solomon River, and a road from Nome northward by way of the head of Nome River and toward the Kougrok River.

The board received but $28,000 from the Alaska fund. It can be seen and appreciated by those who are familiar with Alaska that the board has not been asleep. They have taken in a large part of the field, and know the places where work should be done at the earliest opportunity. They are hampered for funds. It would probably be better for Congress to estimate the probable amount for roads from the "Alaska fund" and make it available, so that the board could have it at its command during the summer, which is the best season for work. This is the right way to help Alaska. It will relieve the newcomers of much of the fearful hardships which have been endured by prospectors and miners.

The following order has been promulgated by the Secretary of War, prescribing the regulations governing the operations of the board of road commissioners appointed by him under the above-mentioned act of January 27, 1905:

WAR DEPARTMENT,
Washington, June 16, 1905.

ORDERS:

Under section 2 of the act approved January 27, 1905, the Board of Road Commissioners of Alaska therein prescribed and appointed by paragraph 9, Special Orders, No. 61, c. s., War Department, March 16, 1905, is organized as follows:

Maj. W. P. Richardson, Ninth Infantry, president.
Lieut. George B. Pillsbury, Corps of Engineers, disbursing officer.
Lieut. Samuel C. Orchard, Third Infantry, secretary.

As said act provides that—

Whenever more than five thousand dollars in the aggregate shall have to be expended on the construction of any road or trail, contract for the work shall be let by them to the lowest responsible bidder, upon sealed bids, after due notice, under rules and regulations to be prescribed by the Secretary of War.

the following rules and regulations are prescribed to govern the operations of said board, viz: Articles 50, 51, and 52, Army Regulations, 1904, shall govern all contract work, with the following exceptions:

1. Advertisements, proposals, etc., will be submitted in triplicate; one copy to be forwarded to the returns office of the Interior Department, one to the Treasury, and one copy to be retained by the disbursing officer of the board. Work involving an expenditure of five thousand dollars or more shall be advertised for not less than thirty days.

2. The board may accept proposals and make final award of work, and approve such contracts therefor as may be entered into by the disbursing officer where the construction by contract is found to be advantageous to the public interest.

3. Copies of abstracts will, as soon as they have been considered by the board, be forwarded to The Military Secretary, to whom all correspondence will be addressed, and who will be the medium of communication between the board and the War Department. All business coming from the board will be submitted by The Military Secretary to the Assistant Secretary of War for his consideration and action. In addition to the full and detailed report upon any road or trail which is required by statute to be submitted as soon as the same shall have been completed, the board will report at the end of each season—not later than the 1st of October of each calendar year—the whole amount of work performed during the preceding working season. This report will be accompanied by detailed reports of trails, roads, etc., which have been laid out and have been entirely or partially constructed, and will contain such information in respect to population, conditions, prospective benefits, etc., as will be necessary to acquaint the Department with the character and progress of the work.

4. The disbursing officer is hereby authorized, with the approval of the board, to incur and pay the necessary expenses for office hire, and to purchase such office furniture, instruments, and other material as may be necessary for the prosecution of the work with which the board is charged by law.

ROBERT SHAW OLIVER,
Acting Secretary of War.

Board first met on May 15. To facilitate the work of the board Lieutenant Orchard has been appointed disbursing officer in place of Lieutenant Pillsbury.

INTERNAL REVENUE.

The whole amount of collections in the District for the fiscal year ended June 30, 1905, was $18,419.84.

LICENSES COLLECTED DURING THE FISCAL YEAR ENDED JUNE 30, 1905.

Statement of clerks of U. S. District Court.

FIRST DIVISION.

The aggregate amount of licenses paid in this Division during the fiscal year 1905 is $95,855.92, of which amount the sum of $44,819.55 was paid for liquor licenses.

The estimated population of each settlement as a basis upon which the liquor licenses were paid are as follows, to wit: Juneau, 1,500; Skagway, 1,000; Douglas, 1,500; Ketchikan, 500; Wrangell, 500.

The following is a statement of all licenses collected by the clerk of the district court for the second judicial division of Alaska during the fiscal year ended June 30, 1905:

Total liquor licenses, Nome	$40,500
Total liquor licenses outside organized municipalities	20,000
Total licenses other than liquor, Nome	6,183
Total licenses other than liquor outside organized municipalities	8,281
Total liquor licenses	60,500
Total licenses other than liquor	14,464
Grand total	74,964

WHITE POPULATION, SECOND DIVISION.

Nome—summer population, 7,000; winter population	4,000
Council	500
Solomon	300
Candle	250
Deering	150
Teller	150
Tin City	50
Igloo and Kougarok	100
St. Michael	150

The above is a fair estimate of the permanent white population of the several places, but does not include the number of people scattered about on the creeks and in small places where there are to be found 10 to 25 persons in a settlement. To get the entire population, there should be added to the above numbers about 1,000 for this district.

VALUATION OF PROPERTY IN TOWNS.

VALDEZ.

The total assessable property in this town on September 25, 1905, as turned in by the assessor to the town council, is $321,660, of which $197,725 is put down as real estate, $110,050 as improvements, and $103,785 as personal property.

NOME.

Total assessment	$1,679,570.00
Real estate	795,699.00
Personal property	883,871.00
Gain over 1904	337,158.00

DOUGLAS.

Amount of taxable property	$315,000.00

Rate of taxation, one-half of 1 per cent.

KETCHIKAN.

Value of taxable property	$450,000.00

Rate of taxation, one-half of 1 per cent.

SKAGWAY.

Total valuation for 1905:	
Personal property	$132,080.00
Real estate	512,095.00
Total valuation for 1904:	
Personal property	155,360.00
Real estate	527,350.00

IMMIGRATION.

SKAGWAY, ALASKA, *October 4, 1905.*

Hon. JOHN G. BRADY,
Governor of Alaska.

SIR: In reply to your office letter of the 25th ultimo, requesting to furnish your office with particulars as to the character and extent of immigration, etc., I have the honor to state that I am unable to give you any definite information on the subject, as at present I am on temporary duty at Skagway, while my records are at Ketchikan. However, I shall endeavor to give you some information in general, hoping the same will suffice.

My official station is at Ketchikan, Alaska. My duties consist of examination of aliens arriving from or through Canada, also of looking after the enforcement of the Chinese exclusion laws.

Immigration of aliens from contiguous territory does not exceed 100 per annum, and consists chiefly of Scandinavians, Slavs, and some Canadians. In addition to the aliens coming from and through Canada, there is a good number of them arriving from the United States, but there is no record kept of the latter.

Most of the aliens arriving in Alaska consist of a laboring class, and a large percentage of them seek employment at Douglas, and others are distributed among various mining places in Alaska.

There is a large number of Chinese and Japanese, from five to seven thousand, employed in Alaskan fish canneries, but all of the former and most of the latter work in Alaska only during the summer season, at the end of which they return to the United States.

Respectfully,

KAZIS KRAUCZUNAS,
Inspector in Charge.

ALASKA MILITIA.

Letters from Ketchikan and Unalaska have been received at this Office, making inquiry whether militia companies can be organized at these places. The following correspondence will show how this matter stands:

OFFICE OF THE EXECUTIVE,
Sitka, Alaska, January 10, 1903.

THE SECRETARY OF WAR,
Washington, D. C.

SIR: The Civil Code for Alaska, which was approved June 6, 1900, among other things provides that "the governor shall be ex officio commander in chief of the militia of the district, and shall have power to call out the same when necessary to the due execution of the laws and to preserve the peace, and to cause all able-bodied citizens of the United States in the district to enroll and serve as such when the public exigency demands; and he shall perform generally in and over said district such acts as pertain to the office of governor of a Territory, so far as the same may be made or become applicable thereto."

This code supersedes the organic act approved May 17, 1884, section 7 of which provides "that the general laws of the State of Oregon now in force are hereby declared to be the law in said district so far as the same may be applicable."

Under the former act the governor could be guided by the provisions of the Oregon law in the matter of the militia, and Governor Knapp was so guided, I believe, when at one time he undertook to organize the militia of the district.

Of late a desire has manifested itself in a number of places that the militia should be organized. I think it would be well to do so, for if the country needed soldiers Alaska has good material for at least one full regiment. But I am under the present law unable to measure the extent of my authority, nor are there any rules or regulations for us to follow.

Alaska is not an organized Territory. It is a district, and directly under the control of Congress and the Executive. I ask you, therefore, to define my authority under the present code, and to have the proper military officer of your Department to draw up such rules and regulations for the organization of the militia for the district of Alaska.

I request also to be informed as to the amount that the district has to its credit for militia purposes.

Very respectfully, yours,

JOHN G. BRADY,
Governor of Alaska.

WAR DEPARTMENT,
Washington, August 28, 1903.

THE SECRETARY OF THE INTERIOR,
Washington, D. C.

SIR: Referring to previous correspondence on the subject of the organization of the militia in the district of Alaska, I have the honor to inform you that the matter of the advisability of organizing militia in that district having been referred to the Judge-Advocate-General of the Army, he (the Judge-Advocate-General of the Army) has rendered the following opinion, which is concurred in by the Secretary of War:

"The original act creating a government for the district of Alaska—act of May 17, 1894 (23 Stats., 24), provided inter alia—

"'That the general laws of the State of Oregon now in force are hereby declared to be the law in said district, so far as the same may be applicable and not in conflict with the provisions of this act or the laws of the United States.'

"There can be no doubt, I think, that the effect of the foregoing provision was to extend the militia laws of Oregon in so far as applicable and not in conflict with Federal laws to the district of Alaska. This seems to have been the view adopted by the local authorities, it appearing from reports on file in the Department that organizations of the militia existed in the district of Alaska in 1889, 1891, and 1892, and from the within letter that in the creation of such organizations Governor Knapp was guided by the provision of the Oregon law.

"By the act of March 3, 1899 (30 Stats., 1253), a code of criminal laws and procedure for Alaska was enacted in substitution of laws of Oregon on the same subject, and by act of June 6, 1900 (31 Stats., 321), a code of civil government and procedure was provided which contained in respect of the militia the provision first above quoted and, further, a repealing clause as follows:

"'All acts and parts of acts in conflict with the provisions of this act are hereby repealed.'

"The militia laws in force at the time of the passage of these acts, to wit, the Oregon militia law as it existed on May 17, 1884 (Deady's compilation of General Laws of Oregon, p. 664) is not, in its applicable portion, in conflict with any of the provisions of the acts above cited nor repugnant thereto, and must be held, therefore, to have been left in force and to be the militia laws of Federal enactment. No useful organization of the militia of Alaska can be perfected under this law, which in essential regards is obsolete, and it is recommended that none be attempted in advance of appropriate legislation by Congress."

In view of the above facts it is apparent that no useful organization can be perfected under existing laws.

As it would appear from reports received by this Department from that district that it is practical and desirable to maintain a force of militia in Alaska, particularly in the vicinity of Juneau, Alaska, it is the intention of this Department to request Congress to remove, by appropriate legislation, the obstacles of organizing a militia force in the district of Alaska, and to extend to that district the provisions of the act approved January 20, 1902, "to promote the efficiency of the militia, etc."

Very respectfully,

WM. CARY SANGER,
Acting Secretary of War.

CADETS AT MILITARY SCHOOLS.

In connection with the above we also recommend that the law be amended so that boys from here may enter the Government schools at West Point and Annapolis. We think that we have boys who would be a credit to either service.

VISIT OF A NAVAL SQUADRON TO SOUTHEASTERN ALASKA.

The United States vessels *Chicago*, *Marblehead*, and *Perry*, under the command of Rear-Admiral Casper F. Goodrich, cruised this way in July. It is certainly desirable that our officers become familiar with Alaska's coasts and harbors, and cruising is the best way to learn.

OFFICIAL DIRECTORY.

DISTRICT GOVERNMENT.

Governor, JOHN G. BRADY, Sitka.
Ex-officio secretary, WILLIAM L. DISTIN, Sitka.

UNITED STATES CUSTOMS DISTRICT.

Juneau.—Clarence L. Hobart, collector; John R. Willis, special deputy collector; Fred S. Williams, deputy collector and inspector; Maurice S. Whittier, deputy collector and inspector; H. R. Shepard, deputy collector and inspector; George W. Rose, deputy collector and inspector; William H. Loller, stenographer and typewriter; George M. Simpkins, messenger; John E. Winn, temporary inspector.

Ketchikan.—John R. Beegle, deputy collector in charge; Milson S. Dobbs, deputy collector and inspector; Frank J. Pearce, deputy collector and inspector.

Wrangell.—Frederick E. Bronson, deputy collector in charge; Sim Frieman, inspector (navigation season).

Skagway.—Matthew Bridge, deputy collector in charge; J. F. Pugh, deputy collector and inspector; D. P. Lea, deputy collector and inspector; George G. Miller, deputy collector and inspector; Nicholas Bolshanin, deputy collector and inspector; George C. Carson, inspector (navigation season); Robert D. Foster, inspector (navigation season); Richard R. Barry, inspector (navigation season); Frank Frandson, inspector (navigation season).

Summit White Pass.—E. F. Pitman, deputy collector and inspector.

Eagle.—Clarence L. Andrews, deputy collector in charge; John J. Hillard, deputy collector and inspector; John M. Thomson, deputy collector and inspector; George W.

Woodruff, deputy collector and inspector; Otto F. Horn, deputy collector and inspector (navigation season); W. W. Roberts, deputy collector and inspector (navigation season).

Fortymile.—Fred J. Vandewall, deputy collector in charge; James H. Van Zandt, deputy collector and inspector.

St. Michael.—L. U. Stenger, deputy collector in charge; John E. Dobbs, deputy collector and inspector (navigation season); A. J. Henderson, deputy collector and inspector (navigation season); Leslie H. McDonald, deputy collector and inspector (navigation season); Fred H. Knapp, deputy collector and inspector (navigation season); A. H. Wilkes, deputy collector and inspector (navigation season).

Nome.—C. D. Garfield, deputy collector in charge; R. W. J. Reed, inspector (navigation season); E. T. Baldwin, inspector (navigation season); James W. McCoskrie, inspector (navigation season).

Unalaska.—John F. Sinnott, deputy collector in charge; Tracy Hatch, temporary inspector (navigation season).

Kodiak.—William E. Pence, deputy collector in charge.

Valdez.—Edward B. Spiers, deputy collector in charge.

Sitka.—Victor L. Holt, deputy collector in charge; John P. Corcoran, laborer.

UNITED STATES COURTS.

Division No. 1.—Royal A. Gunnison, judge, Juneau; C. C. Page, clerk of court, Juneau; J. J. Clarke, deputy clerk of court, Juneau; A. L. Collison, assistant clerk of court, Juneau; M. H. McLellan, deputy clerk of court, Skagway; D. C. Abrams, deputy clerk of court, Ketchikan; H. M. Lull, court stenographer, Juneau; J. M. Shoup, United States marshal, Juneau; W. H. McNair, chief office deputy United States marshal, Juneau; J. B. Heyburn, office deputy United States marshal, Juneau; A. G. Shoup, office deputy United States marshal, Ketchikan; H. L. Johnson, office deputy United States marshal, Skagway; J. P. Campbell, office deputy United States marshal, Sitka; W. D. Grant, office deputy United States marshal, Wrangell; J. J. Boyce, United States district attorney, Juneau; H. A. Day, assistant United States district attorney, Juneau; W. A. Barnhill, United States district attorney, Ketchikan; H. H. Folsom, United States commissioner, Juneau; H. B. Le Fevre, United States commissioner, Skagway; C. Ford, United States commissioner, Haines; Edw. de Groff, United States commissioner, Sitka; L. A. Slane, United States commissioner, Hoonah; Hans Hansen, United States commissioner, Yakutat; E. S. Stackpole, United States commissioner, Ketchikan; A. V. R. Snyder, United States commissioner, Wrangell; U. S. Rush, United States commissioner, Kasaan; Carl Spuhn, United States commissioner, Killisnoo; Ernest Kirberger, United States commissioner, Kake; William Duncan, United States commissioner, Metlakahtla.

Division No. 2.—Hon. Alfred S. Moore, judge; Henry M. Hoyt, United States attorney; Thomas Cader Powell, United States marshal; John H. Dunn, clerk; John J. Reagan, assistant United States attorney; George B. Grigsby, assistant United States attorney; W. N. Landers, assistant United States attorney; Angus McBride, deputy clerk, Nome; Edwin H. Flynn, deputy clerk, St. Michael; J. C. Tolman, deputy marshal; Reginald W. Thompson, deputy marshal; John H. D. Bouse, deputy marshal; Joseph F. Warren, deputy marshal; William M. Eddy, deputy marshal; D. J. Wynkoop, deputy marshal; Hugh J. Lee, deputy marshal; Lloyd L. Scott, marshal's clerk, Nome; Isaac Evans, deputy marshal, Teller; Clyde C. Coleman, deputy marshal, Solomon; Thomas R. Whote, deputy marshal, Council; George W. Johnson, deputy marshal, Nulato; Fred G. Kimball, deputy marshal, St. Michael; J. A. Ince, deputy marshal, Candle; H. H. Darrah, deputy marshal, Marys Igloo; T. M. Reed, jr., United States commissioner, Cape Nome; Sam Archer, United States commissioner, Solomon; John M. McDowell, United States commissioner, Council City; S. C. Henton, United States commissioner, Port Clarence; Andrew J. Baumgarten, United States commissioner, Cape Prince of Wales; Lars Gunderson, United States commissioner, Kougarok; A. S. Kepner, United States commissioner, Fairhaven; Garrett Busch, United States commissioner, Nulato; Martin F. Moran, United States commissioner, Noatak-Kobuk; S. R. Spriggs, United States commissioner, Point Barrow; Edgar O. Campbell, United States commissioner, St. Lawrence Island; Dana Thomas, United States commissioner, Kotzebue Mission.

Division No. 3.—Judge, James Wickersham, Eagle; United States attorney, Nathan V. Harlan, Eagle; clerk, Albert R. Heilig, Eagle; United States marshal, George G. Perry, Eagle. United States commissioners: Carl M. Johanson, Eagle; John L. Lyons, Valdez; S. M. Graff, Jackwade; Herman V. Nichols, Circle; J. Lindley Green, Rampart; Frank E. Howard, Coldfoot; E. L. Bosqui, Colville River; James E. Saunders, Chisna; F. D. Kelsey, Kodiak; John Niven, Dillingham; F. C. Driffield, Unga; N.

Gray, Unalaska; H. H. Hildreth, Sunrise; George C. Britton, Catella; Edward J. Stier, Fairbanks. Assistant United States attorneys: Luther C. Hess, Eagle; Oliver P. Hubbard, Valdez. Deputy clerks: E. A. Henderson, Valdez; James B. Wingate, Rampart. Chief deputy marshal, E. E. Reynolds, Eagle. Deputy United States marshals: J. H. Lathrop, Valdez; Edgar Wickersham, Circle; Charles Dreibelbis, Rampart; J. H. Johnson, Coldfoot; Frank Clayton, Jackwade; John R. Richards, Unalaska; Louis L. Bowers, Kodiak; James Wardell, Catella; George Sexton, Sunrise; R. S. Bates, Nushagak. Official stenographer, Richard H. Geoghegan, Eagle. Deputy United States district attorney and license collector, Cecil H. Hegg.

UNITED STATES SURVEYOR-GENERAL'S OFFICE.

Surveyor-general.—William L. Distin, Sitka.

United States deputy surveyors.—A. J. Adams, Valdez; C. M. Anderson, Resurrection; George M. Ashford, Nome; Elbridge G. Allen, Fairbanks; George E. Baldwin, Valdez; David G. Barstow, Chignik Bay; A. G. Blake, Nome; Webster Brown, ———; Rufus Buck, Dawson; L. E. Davick, Seattle; C. E. Davidson, Juneau; H. H. Edgerton, ———; Martin George, Sitka; Thomas H. George, Juneau; Clinton Gurnee, ———; Herman Heinze, Solomon; Charles E. Hubbell, Kayak; William A. Hesse, Nome; R. A. Jackson, Fairbanks; G. A. Kyle, Seward; Albert Lascy, ———; F. H. Lascy, ———; E. F. Lewis, Nome; A. B. Lewis, Valdez; J. L. McPherson, ———; J. A. McQuinn, ———; A. J. Meals, Chena; Elias Ruud, Juneau; J. Henry Smith, ———; Henry States, Juneau; Roy W. Sweet, Kayak; F. Tagliabue, ———; W. W. Turlew, ———; N. B. Whitfield, Ketchikan; D. S. Whitfield, Ketchikan; C. P. Wilson, Catalla.

United States deputy mineral surveyors.—George M. Ashford, Nome; A. J. Adams, Valdez; Elbridge E. Allen, Fairbanks; George E. Baldwin, Valdez; Arthur G. Blake, Nome; J. F. Blakeley, Seward; Webster Brown, ———; Rufus Buck, Dawson; A. B. Carter, Teller; W. S. Chapman, Kayak; C. E. Chapman, Valdez; Charles E. Davidson, Juneau; H. H. Edgerton, ———; David Fox, ———; Martin George, Sitka; T. H. George, Juneau; Clinton Gurnee, ———; Herman Heinze, Solomon; William A. Hesse, Nome; William B. Hoag, Nome; Charles E. Hubbell, Kayak; H. H. Harvey, Teller; R. A. Jackson, Fairbanks; Albert Lascy, ———; F. H. Lascy, ———; E. F. Lewis, Nome; A. B. Lewis, Valdez; Samuel C. Lovell, Kayak; J. L. McPherson, ———; John A. McQuinn, ———; A. J. Meals, Valdez; W. E. Smith, ———; F. D. Stanley, ———; Henry States, Juneau; Charles Tappan, Douglas Island; N. B. Whitfield, Ketchikan; D. S. Whitfield, Ketchikan; J. Potter Whittren, ———; C. P. Wilson, Catalla; Alfred Williams, Treadwell; W. A. Warner, Nome.

UNITED STATES LAND OFFICE.

John W. Dudley, register, Juneau; T. M. Mullen, receiver, Juneau.

DEPARTMENT OF AGRICULTURE.

Experiment stations.—C. C. Georgeson, special agent in charge of Alaska investigations, Sitka; R. W. De Armond, horticulturist, Sitka; P. H. Ross, assistant in charge of Kenai Station, Kenai; J. W. Neal, assistant in charge of Copper Valley Station, Copper Center; F. E. Rader, assistant in charge of Rampart Station, Rampart.

BUREAU OF EDUCATION.

John G. Brady, ex-officio superintendent of public instruction, Sitka; Sheldon Jackson, agent, Washington, D. C.; William Hamilton, assistant agent, Washington, D. C.; W. A. Kelly, superintendent of schools, southern district, Sitka; W. T. Lopp, superintendent of schools, northern district, Teller.

SCHOOLS MAINTAINED DURING THE FISCAL YEAR ENDED JUNE 30, 1905.

Schools for native children.—Afognak, Miss H. E. Breece, teacher; Barrow, I. R. Spriggs, teacher; Barrow, John H. Kilbuck, teacher; Bethel, B. K. Helmick, teacher; Bethel, Mr. and Mrs. J. Weinlick, teachers; Bettles, Mr. and Mrs. D. W. Cram, teachers; Carmel, Joseph Kahlen, teacher; Copper Center, Mrs. G. S. Clevenger, teacher; Deering, Mrs. A. H. Foster, teacher; Gambell, Edgar O. Campbell, teacher; Golovin, Miss A. Hagberg, teacher; Haines, Miss M. Mackintosh, teacher; Hoonah, Mrs. M. J. Ross, teacher; Ikogmute, F. F. Fellows, teacher; Jackson, Miss Byrde Darby, teacher; Kake, Mrs. Anna R. Moon, teacher; Kasaan, Arch R. Law, teacher;

Killisnoo, Mrs. C. Kilborn, teacher; Klawock, Miss N. G. Edgar, teacher; Klinguan, Samuel G. Davis, teacher; Klukwan, Miss T. Brookman, teacher; Koserefsky, A. J. Markham, teacher; Koserefsky, Miss May Winifred, teacher; Kotzebue, Mrs. Otha Thomas, teacher; Nulato, Miss Mary Stephen, teacher; Petersburg, Mrs. J. V. M. Cullough, teacher; Quinhagak, Mrs. L. A. Schoechert, teacher; Quartz Creek, Mrs. Lenora Reed, teacher; Rampart, Miss Emily Parke, teacher; Saxman, Mrs. J. L. Myers, teacher; Sitka, Miss J. Rice, teacher; Shakan, Fred Chase, teacher; St. Michael, V. L. Derby, teacher; Tee Harbor, H. De Witt, teacher; Teller Station, Ludvig Larson, teacher; Unalakleet, Miss H. E. Olsen, teacher; Unalakleet, Misha Ivanoff, teacher; Wales, A. N. Evans, teacher; Wales, Thomas Illayok, teacher; Yakutat, E. Rasmussen, teacher; Yukon, F. E. Willard, teacher.

Schools for white children and children of mixed blood.—Chignik, James J. Potter, teacher; Ellamar, Miss M. O. Stevens, teacher; Haines, Miss Amy S. Gaddis, teacher; Hope, O. L. Grimes, teacher; Kenai, Mrs. F. C. Craigie, teacher; Kodiak, Mr. and Mrs. C. I. Kerr, teachers; Seldovia, Herbert Farris, teacher; Seward, Miss L. L. Kurtz, teacher; Sitka, D. M. Daum, teacher; Sitka, Miss C. Duncan, teacher; Sitka, Miss R. McCaleb, teacher; Teller, E. D. Orbell, teacher; Unalaska, Mr. and Mrs. W. A. Davis, teachers; Unga, James C. Patey, teacher; Wood Island, Miss A. G. Curtis, teacher.

School districts established under act of January 27, 1905.—Sitka, Sitka; Haines, Haines; Seward, Seward; Reservation, Valdez; Ellamar, Ellamar; Council City, Council.

INTERNAL REVENUE.

John Cameron, deputy collector, Juneau.

IMMIGRATION INSPECTOR.

Kazis Krauczunas, Ketchikan.

POST-OFFICE DEPARTMENT.

Post-offices, with name, date of appointment, and compensation of each postmaster.

Office.	Postmaster.	Date of appointment.	Compensation.
Anvik	John W. Chapman	June 12, 1897	.....
Afognak	T. Sparatin	July 6, 1904	$21.00
Apollo	Frank R. Brown	July 26, 1901	51.00
Amalga	James R. Whipple	July 29, 1905	.....
Barrow	H. Richmond Marsh	Sept. 9, 1901	.....
Bettles	Charles F. Grimm	Aug. 28, 1905	.....
Bluff	Frank Wadelton	Sept. 9, 1901	.....
Bethel	Adolf Stecker	July 15, 1905	.....
Candle	Rodney S. Dimmick	July 24, 1902	.....
Catalla	A. Charles Williams	Mar. 25, 1904	.....
Chena	Herbert A. Currier	May 4, 1903	.....
Chicken	Susan J. Easterbrook	Feb. 6, 1905	.....
Chignik	Carl J. Brun	Aug. 1, 1905	.....
Chisna	Melvin Dempsey	June 9, 1904	.....
Chomly	John Douglas	July 18, 1905	17.00
Circle	Thomas Hunter	May 2, 1905	258.00
Cleary	Albert H. Camehl	Aug. 2, 1905	.....
Coal Harbor	Henry S. Tibbey	Aug. 18, 1902	.....
Coldfoot	Agnes E. Plummer	Oct. 17, 1902	.....
Copper Center	Rengwald Blix	Nov. 14, 1901	.....
Coppermount	Robert H. Mellen	Jan. 17, 1901	7.00
Council	Charles Lubbe	July 20, 1901	311.00
Dahl	John A. White	Sept. 9, 1905	.....
Deering	Birdie L. Gurry	Aug. 27, 1902	18.00
Dillingham	Russell S. Bates	Oct. 21, 1904	.....
Dolomi	Peverly Raymond	Aug. 1, 1905	64.00
Douglas	Robert R. Hubbard	Dec. 15, 1902	.....
Dutton	George W. Dutton	July 27, 1905	.....
Eagle	Clyde A. Thompson	Aug. 14, 1905	.....
Ellamar	Joshua D. Mecnah	Aug. 18, 1900	.....
Fairbanks	Elbridge T. Barnette	Apr. 10, 1903	.....
Fort Liscum	Mildred R. Hunter	July 19, 1904	74.00
Fort Yukon	Mabel P. Beaumont	Sept. 24, 1904	.....
Franklin	Frank W. Tomlinson	Feb. 11, 1904	.....
Funter	James T. Barron	June 24, 1904	.....
Golden	Hiram E. Ehle	Nov. 26, 1904	.....
Golovin	John A. Dexter	Oct. 20, 1904	.....
Grindall	Isaac J. Tomlinson	June 23, 1900	.....
Haines	William B. Stout	Feb. 19, 1900	429.00
Hollis	Martin V. Loy	July 9, 1901	.....

POST-OFFICE DEPARTMENT—continued.

Post-offices, with name, date of appointment, and compensation of each postmaster—Continued.

Office.	Postmaster.	Date of appointment.	Compensation.
Homer	Stephen T. Pemberthy	Oct. 3, 1896	$72.00
Hoonah	Louise Kane	Jan. 24, 1903	79.00
Howkan	Loyal Young	May 16, 1905	84.00
Hope	Emeline Petellin	Oct. 19, 1900	8.00
Hydah	Sol Silverman	June 11, 1904	.....
Igloo	Michael J. Farrell	Aug. 23, 1900	.....
Jackwade	Richard F. Oberlander	Sept. 20, 1902	.....
Jualin	Wilford B. Hoggatt	Aug. 2, 1901	.....
Juneau	Ernest J. Brooks	Nov. 17, 1903	1,600.00
Kake	Fred C. Sepp	July 25, 1904	.....
Karluk	W. E. Fitchie	May 8, 1905	89.00
Kasaan	Louis A. Babcock	Jan. 24, 1900	57.00
Kayak	Newland H. Smith	Oct. 17, 1902	4.00
Kenai	George S. Mearns	June 17, 1901	22.00
Ketchikan	Edward J. Williams	Apr. 6, 1904	.....
Killisnoo	Carl Spuhn	Feb. 19, 1882	100.00
Klawock	Harry F. Swift	Mar. 17, 1900	19.00
Knik	George W. Palmer	Oct. 29, 1904	.....
Kodiak	Henry P. Cope	Apr. 13, 1901	244.00
Koserefsky	Aloysius J. Markham	July 19, 1902	.....
Kotzebue	Dana H. Thomas	Dec. 11, 1902	.....
Kugarok	Richard S. Ryan	June 22, 1905	.....
Loring	Emma W. Knights	Apr. 6, 1904	30.00
Landloek	William A. Dickey	July 24, 1905	.....
Latouche	Andrew H. Beatson	Mar. 25, 1905	.....
Mastodon	Walter P. Fell	Aug. 6, 1902	.....
Metlakatla	James Wallaee	Apr. 20, 1904	52.00
Niblack	William A. Fink	Aug. 10, 1905	.....
Nome	Frank W. Swanton	Jan. 21, 1902	1,000.00
Nulato	Julius Jette	June 21, 1904	.....
Nushagak	August H. Mittendorff	Mar. 24, 1904	.....
Nizina	Frank Kernan	Mar. 10, 1905	.....
Orea	William J. Shepard	Oct. 3, 1900	.....
Point Hope	F. H. Kõenig	Apr. 27, 1905	.....
Petersburg	Oretta B. Brown	May 23, 1905	.....
Porcupine	John Dalton	Aug. 11, 1905	.....
Quinhagak	Lydia A. Schoehert	May 19, 1905	.....
Rampart	Milton P. Fleischman	July 2, 1898	.....
Rodman	Simmon Freiman	Jan. 13, 1905	.....
St. Michael	Albert F. Zepf	Aug. 28, 1905	363.00
Sandpoint	Harry B. Scott	Jan. 12, 1897	.....
Seldovia	James Cleghorn	July 2, 1902	21.00
Seward	Lillie N. Gordon	Oct. 10, 1900	.....
Shakan	Horace Cummins	Aug. 2, 1904	40.00
Shungnak	Martin F. Moran	Sept. 24, 1905	.....
Sitka	Sydney E. Flower	June 3, 1904	755.00
Skagway	William B. Sampson	Dec. 17, 1903	1,600.00
Snettisham	John N. Tisdale	Apr. 18, 1900	75.00
Solomon	Loren B. Gass	Sept. 2, 1902	.....
Sulzer	Aaron Shellhouse	Dec. 30, 1902	.....
Sumdum	John C. McBride	Apr. 26, 1902	.....
Sunrise	Henry A. Smith	Mar. 9, 1899	.....
Tanana	George H. Tiffany	Apr. 6, 1904	191.00
Tin City	August C. Anger	May 11, 1904	.....
Teller	Max R. Hirsehberg	Oct. 10, 1904	165.00
Tenakee	Edward Snyder	Mar. 13, 1903	.....
Tolovana	Annie B. Riley	Aug. 28, 1905	.....
Tonsina	Jacob Nafted	Aug. 22, 1903	.....
Treadwell	Robert J. Willis	Feb. 4, 1902	560.00
Tyoonok	Durell Finch	Mar. 2, 1905	31.00
Udakta	Benjamin Neiherland	Oct. 20, 1904	137.00
Unalakleet	Alex E. Karlsen	Dec. 10, 1901	.....
Unga	Frederiek C. Duffield	June 18, 1901	.....
Uyak	Frederick A. Davidson	Feb. 7, 1903	17.00
Valdez	Frank M. Boyle	Aug. 5, 1905	1,200.00
Wales	Susie R. Bernarde	Aug. 16, 1902	.....
Windham	Alfred Gfeller	Aug. 14, 1905	.....
Woedsky	Gustave A. Singer	Jan. 7, 1905	.....
Wrangell	John E. Worden	Feb. 19, 1902	77.00
Yakutat	August Berggren	Mar. 27, 1901	38.00

Members of the Alaskan bar.

Name.	Received.	Post-office address.	Division No.
	1900.		
S. C. Smith	Aug. 1	Skagway	1
C. E. Claypool	Aug. 31	Eagle	3
L. P. Shackleford	Sept. 4	Juneau	1
E. M. Barnes	Sept. 18	do	1
C. A. S. Frost	Nov. 17	Nome	2
R. H. Whipple	do	do	2
J. T. Reed	do	do	2
G. W. Fox	do	do	2
Z. G. Peck	do	do	2
C. Udell	do	do	2
S. F. Jeffreys	do	do	2
P. C. Dibert	do	do	2
W. H. Metson	do	do	2
I. D. Orton	do	do	2
F. McNulta	do	do	2
S. Wood	do	do	2
J. E. Fenton	do	do	2
A. B. Wright	do	do	2
W. J. Gavigan	do	do	2
H. B. M. Miller	do	do	2
P. C. Sullivan	do	do	2
S. Knight	do	do	2
H. E. Shields	do	do	2
G. Hall	do	do	2
J. Keifer	do	do	2
H. Kenaga	do	do	2
S. C. Houghton	do	do	2
G. J. Lomen	do	do	2
P. C. Coston	do	do	2
A. J. Bruner	do	do	2
A. J. Green	do	do	2
J. F. Frame	do	do	2
O. Olsen	do	do	2
W. W. Willett	do	do	2
A. S. Halstead	do	do	2
E. R. Beeman	do	do	2
T. J. Geary	do	do	2
H. Y. Freedman	do	do	2
H. Du Bose	do	do	2
A. S. Kepner	do	do	2
W. H. Schooler	do	do	2
F. A. Steele	do	do	2
A. G. Thompson	do	do	2
J. W. Albright	do	do	2
R. H. Smith	do	do	2
W. H. Bard	do	do	2
C. M. Thuland	do	do	2
C. B. McConnell	do	do	2
O. P. Hubbard	do	do	2
J. M. Latimer	do	do	2
R. Duncan	do	do	2
J. Cosleg, jr	do	do	2
A. V. Ipswitch	do	do	2
M. L. Sullivan	do	do	2
P. Gallagher	do	do	2
A. K. Wheeler	do	do	2
J. T. Thornton	do	do	2
E. C. Hill	do	do	2
R. N. Stevens	do	do	2
J. S. Thompson	do	do	2
W. A. Gilmore	do	do	2
A. W. Hastie	do	do	2
J. W. Bell	do	do	2
W. A. Bethel	do	do	2
B. F. Knott	do	do	2
H. C. Gordon	do	do	2
D. B. Tewkesbury	do	do	2
N. B. Walling	do	do	2
J. Thompson	do	do	2
W. A. Plumly	Dec. 3	Juneau	2
	1901.		
G. K. French	Jan. 31	Eagle	3
A. M. Post	do	do	3
J. C. Kellum	do	do	3
J. L. Green	do	do	3
T. A. McGowan	do	do	3
C. M. Johanson	do	do	3
W. F. Shedd	May 24	Ketchikan	1
F. M. Brown	do	Valdez	1
J. F. Rice	July 2	do	1
D. N. Dodson	July 2	Valdez	1
A. M. Edwards	July 3	do	1
J. W. Leedy	do	do	1
E. J. Rognon	do	Nome	2
J. K. Brown	do	do	2
O. D. Cochran	do	do	2
B. J. McGinnis	do	do	2
J. L. Waller	do	do	2
M. V. Rinehart, jr.	do	do	2
C. H. Clegg	do	do	2
W. T. Love	do	do	2
T. R. White	do	do	2
W. H. Ferguson	do	do	2
B. F. Nudd	do	do	2
J. L. Galen	do	do	2
R. P. Lewis	do	do	2
E. B. McCowan	do	do	2
C. D. Murane	do	do	2
C. H. McBride	do	do	2
J. K. Miller	do	do	2
E. Grimm	do	do	2
J. Rustgard	do	do	2
L. S. Rice	July 30	Eagle	3
V. L. Bevington	do	do	3
L. C. Hess	do	do	3
B. A. Dodge	Sept. 6	Dawson, Y. T.	
J. T. Cowles	do	Circle	3
J. P. De Mattos	Oct. 21	Nome	2
J. W. Griffin	do	do	2
R. Osborn	do	do	2
E. T. Wilson	do	do	2
C. Pickler	do	do	2
G. H. Sullivan	do	do	2
W. H. Brinker	do	do	2
L. Gunderson	do	do	2
S. B. Howard	do	do	2
L. C. Hall	do	do	2
S. C. Milligan	do	do	2
Z. R. Cheney	Dec. 10	Douglas	1
	1902.		
C. M. Johnson	Jan. 2	Treadwell	1
J. P. Kelly	July 24	Nome	2
N. H. Castle	do	do	2
W. T. Perkins	do	do	2
J. H. Tam	do	do	2
C. S. Aldrich	do	do	2
S. C. Henton	do	do	2
J. F. Hobbs	do	do	2
M. P. Kinkaid	do	do	2
S. J. Lazarus	do	do	2
Frank D. Arthur	Mar. 11	Valdez	
W. H. Adams	Sept. 28	Rampart	
Elmer R. Brady	Mar. 11	do	
H. C. Bowman	Apr. 20	Skagway	
H. E. Burnham	Sept. 28	Washington, D. C.	
Geo. D. Campbell	Nov. 1	Nome	
	1903.		
John A. Carson	Mar. 11	Valdez	
C. H. Cosgrove	Apr. 1	Ketchikan	
E. B. Condon	Apr. 20	Eagle	
W. P. Dillingham	Sept. 28	Washington, D. C.	
	1902.		
Thomas C. Early	Nov. 1	Nome	
L. H. French	do	do	
Samuel M. Graff	Mar. 11	Jackwade	
John Goodell	do	Valdez	
L. R. Gillette	Apr. 20	Juneau	
Wm. H. Hale	Nov. 1	Nome	
Donald McKenzie	Sept. 28	Coldfoot	
	1903.		
Knute Nelson	Sept. 28	Washington, D. C.	
T. M. Patterson	do	do	
Abe Spring	Mar. 11	Circle City	
John P. Smith	Sept. 22	Ketchikan	

Members of the Alaskan bar—Continued.

Name.	Re-eeived.	Post-office address.	Division No.
	1902.		
Josephine Todman.	Nov. 1	Nome.....	.....
C. W. Thornton..	....do ...	.....do	.....
	1904.		
J. C. Applewhite.	Feb. 12	Nome	2
	1903.		
A. F. Burleigh...	Nov. 9	New York City	.....
	1904.		
Wm. A. Barnhill	July 22	Juneau.....	1
J. J. Boyce	....do ...	.....do	1
Edward Bruner.	....do ...	Nome	2
	1903.		
F. W. Cushman..	Nov. 9	Taeoma, Wash	.....
J. H. Murray	Dec. 8	New York City	.....
	1904.		
Axel Chytraus ..	Feb. 12	Nome	2
C. M. Frazier	May 17	Eagle.....	3
	1903.		
J. J. Godfrey.....	Nov. 9	Seattle, Wash.	.....
P. Gallagher.....	....do ...	Koyukuk.....	3
	1904.		
G. B. Grigsby....	Feb. 12	Nome	2
	1903.		
W. B. Heyburn ..	Nov. 9	Boise City, Idaho.	.....
G. M. Irwin.....	Nov. 4	Unknown	.....
	1904.		
H. A. Ingalls	Feb. 12	Nome	2
E. C. Kriete.....	July 22	.....do	2
J. J. Kennedy ...	Sept. 22	.....do	2
W. N. Landers...	....do ...	.....do	2
G. H. Meyer	Feb. 12	.....do	2
	1904.		
O. G. Meyers.....	May 17	Eagle.....	3
J. M. McDowell..	Feb. 12	Nome	2
E. H. McLoehlen	July 5	Unknown	.....
W. H. Peckwood.	Feb. 12	Nome	2
	1903.		
Edmund Smith .	Nov. 9	Valdez	3
	1904.		
N. Soderberg	Feb. 12	Nome	2
Leroy Tozier	May 17	Eagle.....	3
A. J. Beeeher	Nov. 9	Nome	2
J. H. Smith	....do ...	.....do	2
A. Watson.....	....do ...	.....do	2
J. S. Clark	Nov. 28	Juneau	1
A. Gfeller	Dec. 9	.....do	1
E. J. Wright	Dec. 16	.....do	1
	1905.		
M. C. Brown.....	Jan. 9	.....do	1
N. L. Burton.....	Feb. 25	Fairbanks	3
Ray V. Nye.....	....do ...	.....do	3
G. E. de Steinguer.	Apr. 21	Juneau.....	1
A. R. Heilig	May 9	Fairbanks....	3
David T. Ray....	June 5	.....do	3
B. M. Carrier	June 7	Skagway	1
F. de Journal....	June 5	Fairbanks....	3
G. B. Erwin.....	....do ...	.....do	3
A. P. Swineford..	June 7	Ketehikan ...	1
George C. Heard.	....do ...	Juneau	1
R. G. Hudson....	July 17	Nome	2
John J. Reegan..	....do ...	.....do	2
S. D. Woods.....	....do ...	.....do	2
J. S. Hading	Aug. 11	Skagway	1
C. H. Clark	Aug. 22	Juneau	1
J. E. Coffer	Sept. 7	Jaekwade Creek.	3
J. E. Rivard	Sept. 14	Nome	2
T. R. Shepard ...	....do ...	.....do	2

Notary public commissions issued from July 18, 1900, to September 30, 1905, with date of expiration.

Name.	Address.	Expires.
1900.		1904.
G. M. Rose	Juneau	July 18
Isaac J. Tomlinson	Ketehikan ...	Aug. 16
V. L. Bevington.....	Eagle.....	Aug. 31
J. W. Albright	Nome.....	Aug. 8
W. J. Milroy	.....do	Aug. 9
C. S. Hannum.....	.....do	Do.
James W. Griffin.....	.....do	Aug. 10
Henry Sheldon.....	.....do	Do.
Philip C. Dibert.....	.....do	Do.
R. W. Bowen.....	.....do	Do.
Chas. Udell	.....do	Do.
A. J. Green.....	.....do	Do.
J. F. Hobbes	.....do	Do.
H. B. M. Miller.....	.....do	Do.
E. E. Cunningham	.....do	Do.
H. L. Atkinson.....	.....do	Do.
Stephen B. Howard.....	.....do	Do.
W. P. Butler	.....do	Do.
Chas. E. Dickey.....	.....do	Do.
Jeremiah Cousby, jr....	.....do	Do.
Wm. H. Schooler.....	.....do	Do.
Sylvain J. Lazarus.....	.....do	Do.
W. G. Palmer	.....do	Do.
A. H. Kenaga	.....do	Do.
C. S. Blackett	.....do	Do.
1900.		1904.
Geo. A. Leekley.....	Nome.....	Aug. 10
J. Sullivan.....	.....do	Do.
A. J. Bruner	.....do	Do.
A. V. Dedviek.....	.....do	Aug. 11
H. E. Shields.....	.....do	Do.
Arthur G. Thompson ...	.....do	Do.
P. H. Watt	.....do	Do.
S. A. Keller	.....do	Do.
H. A. Day	.....do	Do.
Alex. Allardyee	.....do	Do.
Frederiek B. Chandler ..	.....do	Do.
Benj. F. Tuft.....	.....do	Do.
I. S. Thompson	.....do	Do.
John H. Kelly	.....do	Do.
Chas. A. Noyes.....	.....do	Do.
H. L. Van Winkle.....	.....do	Do.
N. Gray	Unalaska.....	Aug. 28
Chas. E. Hastings	Circle	Aug. 13
M. F. Brown	.....do	Do.
Ralph H. Smith	Nome.....	Sept. 4
T. R. Lyons.....	Juneau	Sept. 18
T. J. Donohoe	.....do	Do.
D. A. McKenzie.....	Bettles.....	Sept. 20
Geo. F. Hooper	Valdez	Do.
Chas. E. Ingersoll.....	Ketchikan....	Oet. 2

Notary public commissions issued from July 18, 1900, to September 30, 1905, with date of expiration—Continued.

Name.	Address.	Expires.
1900.		1904.
E. J. Chamberlain	Eagle	Oct. 25
Lanier McKee	Nome	Nov. 2
Galan Wood	do	Do.
C. S. Houghton	do	Do.
G. N. Everett	do	Do.
Gordon Hall	do	Do.
Guy N. Stockslager	do	Do.
Marcus Roberts	do	Do.
Alfred S. Kepner	do	Do.
Willoughby Clark	do	Do.
Chas. D. Murphy	do	Do.
Neville H. Castle	Council City	Do.
Lillian Thompson	Nome	Do.
P. J. Coston	do	Do.
Elinor B. Courtney	do	Do.
Norton D. Walling	do	Do.
H. Y. Freedman	do	Do.
Albert Fink	do	Do.
Fred G. Kimball	St. Michael	Do.
Key Pittman	Nome	Do.
Oliver P. Morton	do	Do.
Eugene McElwaine	do	Do.
L. C. Church	do	Do.
C. J. Riley	do	Nov. 19
Arthur J. Dibert	do	Do.
Robt. M. Price	Teller	Do.
H. O. Nordwig	Nome	Do.
Claus Rodine	do	Do.
F. E. Fuller	do	Do.
Morton E. Stevens	do	Nov. 20
Arthur B. Wright	do	Do.
Sol. Ripinsky	Haines	Dec. 3
Arthur S. Lovell	Juneau	Do.
C. C. Heid	do	Dec. 7
Thos. C. Wakefield	Nome	Do.
E. D. Sanxay	Wood Island	Dec. 17
T. M. Reed, jr	Nome	Do.
W. C. Irish	Juneau	Oct. 18
1901.		1905.
Chas. A. Fletcher	Unga	Jan. 21
Theo. S. Solomons	Nome	Do.
S. A. Plumley	Juneau	Mar. 2
John B. Denny	do	Do.
E. F. Rose	do	Do.
Guy B. Brubaker	do	Do.
Mary L. Talford	Nome	Mar. 8
M. L. Sullivan	do	Mar. 18
Emma L. Kelly	do	Do.
Walter Vonder Lieth	do	Do.
A. Bienkouski	do	Do.
I. N. Wilcoxen	Skagway	Do.
Edwin H. Flynn	Nome	Do.
C. M. Summers	Juneau	Apr. 1
O. A. Johanson	S. S. Bertha (Sitka).	May 2
A. M. Edwards	Valdez	Do.
D. N. Dodson	do	Do.
Timothy J. Kirby	do	Do.
Fred M. Brown	do	Do.
G. L. Steelsmith	(Skagway) Fortymile, Y. T. P. O.	Do.
T. G. Woodruff	Juneau	May 3
W. D. McNair	Sitka	May 20
F. R. Miller	Skagway	June 1
J. P. de Mattoes	Juneau	Do.
M. L. Reinold	Nome	Do.
J. R. Brewster	do	Do.
E. T. Hatch	do	Do.
Geo. Morrill	do	Do.
Nellie A. Handy	do	June 7
M. F. Mosher	do	June 17
W. W. Sale	do	Do.
Frank Allyn, jr	Tacoma, Wash	June 26
S. J. Call	Nome	July 12
A. E. Flemming	do	July 15
W. B. Stout	Haines	July 17
1901.		1905.
H. R. Mauntifield	Rampart	July 30
J. L. Green	do	Do.
F. A. Handy	Nome	Do.
C. P. Cone	St. Michael	July 31
A. Smith	Nome	Do.
H. N. Carter	do	Do.
R. R. Rogers	Douglas	Aug. 2
George A. Verge	Nome	Do.
Emma J. Steiner	do	Aug. 6
H. A. Smith	Sunrise	Aug. 15
P. Pettit	Skagway	Aug. 19
H. T. Harding	Nome	Sept. 1
F. McNulty	do	Do.
A. K. Delaney	Juneau	Do.
A. E. Williams	Nome	Sept. 6
L. Garrison	do	Sept. 19
C. K. Poteet	Rodman Bay	Oct. 1
C. B. Allen	Rampart	Oct. 7
J. G. Heid	Juneau	Oct. 18
C. W. Thornton	Nome	Do.
E. J. Knapp	Rampart	Do.
Z. R. Cheney	Douglas	Do.
G. A. Adams	Council	Oct. 21
B. J. McGinnis	Nome	Oct. 25
H. A. Johnson	do	Nov. 7
A. P. Mordamet	Golofnin	Do.
M. R. Hirschberg	Teller	Nov. 20
F. King	Ketchikan	Nov. 26
E. M. Andrews	Nome	Nov. 27
H. H. Hildreth	Valdez	Dec. 2
J. W. Leedy	do	Do.
W. H. Ferguson	Nome	Do.
Frances Fitz	Council	Do.
John Goodell	Valdez	Do.
John R. Winn	Juneau	Dec. 3
E. Petellin	Hope	Dec. 11
L. L. Bowers	Kodiak	Do.
O. Gard	Skagway	Dec. 16
C. S. Aldrich	Nome	Do.
Jennie A. Snyder	Wrangell	Dec. 24
Robert W. Jennings	Skagway	Do.
1902.		1906.
Geo. Clark	Ketchikan	Jan. 1
		1905.
Geo. W. Fox	Nome	July 26
C. G. Cowden	do	Do.
J. S. Thompson	do	July 8
Jas. W. Bell	do	July 26
E. Cake Hill	do	Do.
Wm. T. Love	do	July 17
G. J. Lowmen	do	July 13
E. H. McBride	do	July 26
Martha I. Steele	do	July 13
Thos. P. Ryan	do	July 22
		1906.
Jno. R. Beegle	Ketchikan	Jan. 22
M. V. Loy	Hallis	Do.
P. Abrahams	Skagway	Feb. 6
Martha E. Meigs	Nome	Feb. 20
J. D. Thagard	do	Mar. 8
P. D. Range	Wrangell	Mar. 17
C. R. Corbusier	Tanana	Do.
Jas. H. Johnson	Eagle	Feb. 19
H. N. Niec	Dutch Harbor	Mar. 24
R. Blix	Valdez	Do.
John McClelland	Golofnin	Do.
Geo. W. Dutton	Dutton	Apr. 1
Oscar Fish	Valdez	Do.
Allan R. Joy	Koyukuk	Apr. 3
John D. De Fries	Nome	Apr. 4
A. R. Hoare	Anvik	Apr. 7
F. A. Benjamin	Nome	Apr. 22
John G. Price	Skagway	Apr. 28
Thomas W. Hanmore	Tyoonok	Do.
Frank H. Lasey	Valdez	May 3

Notary public commissions issued from July 18, 1900, to September 30, 1905, with date of expiration—Continued.

Name.	Address.	Expires.
1902.		1906.
John F. Dillon	Skagway	May 3
Louis K. Pratt	do	Do.
John W. Miller	Ketchikan	May 6
Geo. D. Claggett	Juneau	May 14
E. R. Brady	Eagle	May 17
C. G. McLeod	Jackson	May 14
George Irving	Ketchikan	Do.
C. M. Johnson	Douglas	May 22
A. C. Griggs	Nome	May 29
J. H. Schoechert	Carmel	Do.
J. T. Cowles	Circle	Apr. 24
J. N. Corma	Tanana	June 23
Geo. S. Means	Kenai	June 27
N. W. O'Rear	St. Michael	June 10
A. J. Daly	Nome	Do.
Hon. C. S. Johnson	do	Do.
James Christoe	Douglas	Do.
L. A. Humiston	Kasaan	Do.
Wm. L. Distin	Nome	June 14
W. V. Rinehart, jr	do	July 16
John R. Parker	do	July 25
Joseph Zuboff	Killisnoo	Aug. 6
Otto Halla	Nome	Aug. 22
J. H. Cobb	Juneau	Aug. 26
C. D. Murane	Nome	Sept. 1
Viola M. Codding	do	Do.
Geo. J. Miller	Golofnin	Sept. 3
H. J. Miller	Eagle	Sept. 8
Abe Spring	Circle	Sept. 9
B. D. Mills	Eagle	Aug. 26
H. W. Walbridge	Rampart	Sept. 11
J. H. Tam	Nome	Sept. 15
J. R. Poland	Juneau	Sept. 16
S. T. Jeffrey	Nome	Do.
J. H. Hamilton	do	Do.
F. W. Clayton	Steele Creek	Sept. 19
Thos. R. White	Nome	Sept. 23
C. M. Thuland	do	Oct. 3
R. L. Burnam	do	Oct. 6
Ulysses G. Myers	Eagle	Do.
Geo. D. Campbell	Nome	Nov. 14
John Y. Ostrander	Valdez	Dec. 8
C. H. Hawkins	Nome	Dec. 23
Saml. L. Lovell	Skagway	Do.
1903.		1907.
L. R. Gillette	Juneau	Jan. 20
E. V. Harlan	Valdez	Jan. 29
M. W. Mikesell	do	Feb. 13
H. C. Gordon	Council	Feb. 24
C. H. Cosgrove	Ketchikan	Mar. 11
G. Taylor	Valdez	Do.
R. J. Mahoney	Kayak	Mar. 21
C. N. Pring	Fairbanks	Mar. 26
S. J. Kane	Hoonah	Apr. 1
M. Bridge	Sitka	Do.
J. C. Kellum	Fairbanks	Apr. 8
E. B. Condon	Eagle	Do.
W. S. Chapman	Kayak	Apr. 14
Carrie G. Lakke	Nome	Apr. 20
A. G. Holman	Resurrection Bay.	Apr. 25
J. F. Bleakley	Sunrise	May 15
L. B. Francis	Juneau	May 26
F. Knights	Loring	June 2
W. E. Bates	Nome	June 3
A. M. Randol	Unga	June 17
W. A. Abernethy	Kayak	Do.
J. McLeland	Cold Bay	Do.
Willard B. Hastings	Council	June 18
W. S. Contant	Juneau	June 22
J. H. Romig	Bethel	July 3
William A. Gilmore	Nome	Do.
Ashby E. Bain	St. Michael	Do.
Volney Richmond	Bettles	July 20
Geo. W. Doyle	Wickersham	July 22
Chas. E. M. Cole	Wickersham	Do.
P. M. Elwell	Valdez	Do.
A. J. Beecher	Nome	Do.
1903.		1907.
C. B. McConnell	Nome	July 28
O. D. Cochran	do	Do.
J. E. Coffer	Chicken Creek	Aug. 7
Chas. Grimm	Bettles	Do.
Wm. F. Brown	Tenakee	Aug. 14
M. S. Whittier	St. Michael	Do.
J. A. Kemp	Jackwade	Sept. 3
F. B. Seely	Coppermount	Sept. 11
Jay Monroe Latimer	Juneau	Sept. 28
J. P. Kelly	Council	Oct. 3
T. G. Wilson	Teller	Do.
H. B. Scott	Sand Point	Oct. 26
F. Moran	Wickersham	Nov. 9
S. C. Henton	Teller	Nov. 16
M. Barker	Nome	Nov. 17
N. H. Bard	do	Do.
C. H. Clegg	Valdez	Dec. 8
B. B. Lockhart	do	Dec. 10
S. Ripinsky	Haines	Dec. 14
1904.		1908.
W. A. Kelly	Sitka	Feb. 23
G. H. Meyer	Council	Mar. 21
L. C. Hess	Eagle	Mar. 30
H. P. Gallagher	Koyukuk	Do.
J. W. Albright	Nome	Apr. 4
A. J. Adams	Valdez	Apr. 8
C. K. Pettingill	Seward	Do.
D. H. Jones	Eagle	Apr. 22
J. Henson	Douglas	May 4
W. M. French	Catella	May 6
J. H. Brownlow	Sunrise	May 7
P. D. Blodgett	Kodiak	May 13
N. M. Davidson	Juneau	Do.
J. H. Joslin		May 17
M. P. Bransfield	Seward	May 20
J. A. Peck	St. Louis, Mo.	Do.
F. H. King	Kayak	June 7
H. S. Noon	Sullivan	June 8
E. S. McGinn	Nome	July 1
F. N. Smith	Eagle	July 5
B. A. Dodge	Fairbanks	Do.
A. F. Zipf	St. Michael	July 7
J. F. Hobbes	Nome	July 14
A. Fink	do	July 22
J. Cousby	do	Do.
V. L. Bevington	Eagle	Do.
C. J. Numme	Nome	Aug. 4
G. D. Schofield	do	Do.
P. J. Coston	do	Do.
J. Sullivan	do	Do.
P. H. Watt	do	Do.
L. F. Thomas	do	Do.
N. H. Castle	Council	Do.
F. M. Loomis	Dolomi	Aug. 8
C. M. Johansen	Fairbanks	Aug. 17
E. L. Wilson	do	Aug. 25
A. S. Kepner	Candle	Sept. 1
S. A. Keller	Council	Do.
E. M. Wilson	Fairbanks	Do.
G. Hall	Nome	Sept. 9
R. V. Nye	Fairbanks	Sept. 17
I. S. Thompson	Nome	Sept. 23
H. A. Day	Juneau	Oct. 6
L. U. Stenger	St. Michael	Do.
C. L. M. Noble	Nome	Oct. 7
M. J. Cochran	do	Do.
T. H. Beaumont	Fort Yukon	Oct. 12
M. E. Stevens	Fairbanks	Oct. 13
G. E. Baldwin	Valdez	Oct. 19
J. B. Wingate	Rampart	Oct. 21
H. B. Le Fevre	Skagway	Oct. 24
G. McNaughton	Juneau	Oct. 27
E. J. Wright	do	Oct. 28
E. R. Gray	Seward	Oct. 29
V. L. Holt	Sitka	Nov. 2
T. R. Lyons	Juneau	Nov. 9
M. L. Sullivan	Fairbanks	Do.
Wm. A. Barnhill	Juneau	Nov. 23

Notary public commissions issued from July 18, 1900, to September 30, 1905, with date of expiration—Continued.

Name.	Address.	Expires.	Name.	Address.	Expires.
1904.		1908.	1905.		1909.
E. H. McLochlen	Juneau	Nov. 23	J. L. McPherson	Kayak	June 18
A. S. Dantrick	do	Dec. 3	V. E. Vincent	Nome	June 28
J. E. Warden	Wrangell	Dec. 15	Seward A. Plumley	Ketchikan	Do.
			A. C. Williams	Catalla	July 5
1905.		1909.	Albert R. Heilig	Fairbanks	July 7
L. S. Drake	Valdez	Jan. 5	Frank W. Redwood	Nome	July 12
I. N. Wilcoxen	Skagway	Feb. 2	Frank E. Young	Seward	July 14
E. H. O. Vandin	Fairbanks	Feb. 6	H. Y. Freedman	Nome	July 17
C. A. Stevens	do	Do.	C. C. Heid	Juneau	Do.
L. Craden	do	Feb. 11	B. L. Gurry	Deering	Do.
J. J. Rogers	Skagway	Feb. 17	D. J. Wynkoop	Nome	July 24
P. Gallaher	Valdez	Feb. 21	W. B. Stout	Haines	Do.
W. H. Whittlesey	Catalla	Do.	F. E. Fuller	Nome	Do.
H. V. Nichols	Fairbanks	Mar. 4	Rev. Hudson Stuck	Fairbanks	July 31
G. B. Brubaker	Nome	Apr. 6	C. Harry Woodward	do	Aug. 7
L. L. James	Chena	Apr. 7	Jas. W. Bell	Nome	Aug. 11
Jessie Jones	Fairbanks	Do.	F. R. Cowden	do	Do.
C. E. Ingersall	Ketchikan	Apr. 18	G. J. Lowman	do	Do.
J. S. Clark	Wrangell	Do.	G. A. Adams	Council	Do.
N. L. Burton	Chena	Apr. 20	Fernand de Journal	Fairbanks	Aug. 17
J. L. Long	Fairbanks	Do.	John T. Reed	Nome	Do.
G. B. Erwin	do	Do.	Andrew J. Baungartner	do	Do.
R. M. Crawford	do	Do.	J. S. Harding	Skagway	Aug. 18
C. V. Bennett	Juneau	May 4	E. T. Woolcott	Fairbanks	Sept. 1
A. J. Bruner	Nome	May 6	Harold M. Lull	Juneau	Do.
T. M. Hasking	do	Do.	Webster Brown	Catalla	Sept. 5
W. W. Sale	do	May 8	E. F. Rose	Juneau	Sept. 7
C. A. Schulze	Chena	May 10	Roy G. Hudson	Nome	Sept. 14
F. M. Brown	Valdez	Do.	H. T. Harding	do	Do.
H. O. Tiedmann	Fairbanks	May 11	B. M. Carrier	Skagway	Do.
John B. Denny	Juneau	May 31	A. N. Evans	Nome	Do.
Cassius M. Frazier	Chena	June 5	A. G. Thompson	Yakataga	Sept. 16
S. O. Morford	Seward	Do.	C. S. Hubbell	Kayak	Sept. 20
D. H. Jarvis	Juneau	June 6	J. L. Reed	Seward	Do.
D. A. McKenzie	Valdez	Do.	A. H. Berry	Valdez	Do.
Wm. Gray	Yakutat	Do.	G. W. Palmer	Knik	Do.
T. C. Wakefield	Nome	June 8	C. E. Claypool	Fairbanks	Sept. 23
C. M. Summers	Juneau	June 13	J. E. Rivard	St. Michael	Sept. 29

INDIAN POLICE.

Augustus Bean	Sitka.
Kat le an	Sitka.
Koo tuk teek	Killisnoo.
James Stok wan	Yakutat.
Willis Hammond	Hoonah.
Son i hat	Kasaan.
Thomas Snuck	Klawock.
Joseph Howard	Metlakatla.
Charles Brendible	Metlakatla.
Charles Gunnok	Kake.
Yalth hock	Kluckwan.
Edwin Scott	Klinkwan.
David Kinninook	Saxman.
Henry Kwulwul	Circle.
John Reese	Tanana.
Alexis Richteroff	Iliamna.
Waska	Bethel.

ALASKA AT THE LEWIS AND CLARK CENTENNIAL EXPOSITION.

Congress appropriated $25,000 to aid in providing and maintaining an appropriate and creditable exhibit of the products and resources of the district at the fair. The amount was small and the time too short after the closing of the fair last year at St. Louis to get up an extensive exhibition of Alaska's varied resources in timber, fish, furs, and minerals; of her sublime scenery, her flowers, her aquatic and land animals, her native races, and their habits of life. However, the exhibition which we had at Portland in one wing of the Government building has been regarded by visitors as creditable and instructive. By reason of this display many have made up their minds to move to

Alaska and are now preparing to come here in the spring with their families. The catalogue of these exhibits is given in the appendix matter of this report.

GRAND JURY REPORT FOR APRIL TERM AT NOME, 1905.

This report dwells upon topics which are of immediate interest to judicial division No. 2, and upon some which are of interest to the whole district. There can be no question about the need of a suitable Government building and jail at Nome spacious enough to accommodate all the civil United States officials who are located in that town. The mining industry is a well-established one on the Seward Peninsula and it will last for several generations, and there will be no mistake in erecting a building so substantial that it will endure for years. It should be as near fireproof as possible and ample enough for court room and all the different chambers necessarily connected with the court, for the custom-house officers, post-office, land office, and United States commissioners' quarters. The preservation of the records of these offices is a matter of transcendent importance. It is recommended that $100,000 be voted for the construction of a building to secure these desired ends. For the whole of the report of the grand jury see Appendix J.

CONCLUSION.

We desire that members of Congress, who are our rulers, inform themselves as to the worth of Alaska, and get it firmly fixed in their minds that this vast area is as much a part of public domain as ever Louisiana or Florida was; get it fixed in their minds that it requires people to make a country, and that they must be established as families and grouped in communities of sufficient numbers, and be possessed of the accumulations of much industry and saving, before they are able to walk alone and stagger under heavy political burdens. We would like them to bear in mind the fact that while the country produces great wealth each year but a small fraction of this wealth remains with us to be invested as capital for the production of more wealth.

The great returns from mines and fisheries go beyond our reach. With these thoughts in view, we ask such additional legislation as will encourage the young and vigorous people of the States to come here and build for themselves homes. Surveys, road construction, cable and telegraph extension, buoys, lighthouses, geological surveys, experiments in agriculture and stock raising, etc., are all preparatory and means to this desired end. Then when we are strong, and of the right sort beyond the possibility of mistake, Congress can, and no doubt will, like a wise parent, set us to housekeeping and to doing for ourselves.

Very respectfully,

JOHN G. BRADY,
Governor of Alaska.

THE SECRETARY OF THE INTERIOR,
Washington, D. C.

APPENDIXES.

Appendix A.

List of domestic corporations filed in the office of the secretary of Alaska, under amendment to the civil code, chapter 37 of the formation of private corporations, approved March 3, 1903. From April 1, 1903, to September 30, 1905, inclusive.

Date filed.	Name.	Date filed.	Name.
Aug. 11, 1903	Alaska Placer Mining Co.	Nov. 17, 1903	Nome Quartz Mining Co.
Aug. 21, 1903	Alaska Packing and Navigation Co.	July 3, 1904	Northwestern Ditch Co.
		Apr. 3, 1905	North Star Gold Mining Co.
Oct. 15, 1903	Alaska Nowell Gold Mining Co.	Aug. 22, 1905	Northern Express Co.
Feb. 6, 1904	Alaska Water Wheel Governor Co.	Sept. 5, 1905	Port Valdez Electric Light and Water Co.
Aug. 8, 1904	Alaska Publishing Co.		
Mar. 15, 1905	Alaska Electric Light and Power Co.	Sept. 4, 1903	Rampart Mining and Commercial Co.
Aug. 3, 1905	Alaska Chief Mining Co.	Oct. 8, 1903	Rampart Chamber of Commerce.
Sept. 21, 1903	Bettles & Samuels Trading Co.	Feb. 23, 1904	Sawtooth Electric Power Co.
Dec. 2, 1903	B. M. Behrends Mercantile Co., Incorporated.	Nov. 9, 1904	Solomon Quartz Mining Co.
		Oct. 28, 1904	Seward Ditch Co.
Jan. 20, 1904	B. M. Behrends Co.	July 24, 1903	Tanana Development Co.
Sept. 15, 1904	Blue Goose Mining Co.	Sept. 22, 1903	The Trilby Creek Mining Co.
Apr. 21, 1903	Citizens Light, Power and Water Co.	Jan. 2, 1904	The Petersburg Lumbering and Manufacturing Co.
Oct. 24, 1903	Copper Center Mining and Trading Co.	June 23, 1904	The Gold Creek Construction Co.
		July 16, 1904	The Alaska Central Mining Co.
Nov. 3, 1904	Copper Island Mining Co.	Do.....	The Becharof Improvement Co.
Dec. 21, 1904	Century Club.	Oct. 12, 1904	The Sheep Creek Mining Co.
Dec. 16, 1904	Cleary Creek Lumber Co.	Feb. 4, 1905	Tanana Trading Co.
Mar. 22, 1905	Chena Tramway Co.	Feb. 21, 1905	Tanana Brewing Co.
July 3, 1905	Consumers Milk Co.	May 9, 1905	Tillikum Club Co.
June 22, 1903	Davidson Improvement Co.	Do.....	The Kenai Mining and Milling Co.
Oct. 29, 1904	Damascus Mining and Milling Co.	Apr. 25, 1903	Valdez, Copper River and Tanana Railroad Co.
Apr. 28, 1903	Enterprise Mining Co.		
July 21, 1904	Golden Gate Hotel Co.	July 22, 1903	Valdez Brewing Co.
Sept. 19, 1904	Gold Run Ditch Co.	Aug. 4, 1904	Valdez Mercantile Co.
Sept. 21, 1903	Juneau Steamship Co.	Sept. 5, 1904	Valdez Real Estate Agency.
June 2, 1904	Juneau Packing Co .	July 5, 1905	Valdez Bank and Mercantile Co.
Mar. 15, 1905	Juneau Ferry and Navigation Co.	Oct. 24, 1904	Wrangell Electric Light and Power Co.
May 11, 1905	Juneau Building and Improvement Co.	Dec. 16, 1903	Yukon Development Co. (Name changed to Cleary Creek Mining Co.)
May 21, 1903	Ketchikan Power Co.		
Sept. 23, 1904	Kayak Wharf and Townsite Co		

Appendix B.

List of documents of foreign corporations filed in the office of the secretary of Alaska under chapter 23, title 3, of the civil code approved June 6, 1900. From December 1, 1903, to February 7, 1905, inclusive.

Date filed.	Name.
Dec. 17, 1903	Alaska Coast Fishing and Packing Co.
Feb. 5, 1904	Alaska Oil and Mines Exploration Co.
June 4, 1904	Alaska Fisheries Union.
June 16, 1904	Anvil Hydraulic and Drainage Co.
July 25, 1904	Alaska Meat Co.
July 28, 1904	Alaska Fish Products Co.
Sept. 17, 1904	Alaska Copper Co.
Oct. 13, 1904	Alaska Industrial Co.
Oct. 18, 1904	Alaska Mining and Water Co.
Oct. 24, 1904	Alaska Smelting and Refining Co.
Nov. 9, 1904	Alaska Electric Light and Power Co.
Jan. 20, 1905	Arctic Mining Co., Limited.
July 14, 1904	Bering Sea and Council City Railway Co.
June 7, 1904	Cook Inlet Transportation Co.
June 24, 1904	Council Placer Co.
June 30, 1904	Coast Range Mining Co.
Aug. 16, 1904	Casa de Paga River and Hydraulic Gold Mining Co.
Feb. 15, 1904	Evergreen Hydraulic Mining Co.
Aug. 11, 1904	Engineer Mining Co.
Aug. 17, 1904	El Capitan Mining Co.
Nov 18, 1904	Fairbanks Telephone Co.
Dec. 15, 1904	Fidelity Funding Co.
Sept. 1, 1904	Gold Stream Construction Co.
May 12, 1904	Helvetia Gold Mining and Milling Co.
June 13, 1904	Haskins Ditch and Mining Co., Limited.
Sept. 8, 1904	Hadley Consolidated Copper Co.
June 2, 1904	International Fisheries Co.
May 24, 1904	Khayyam Copper Co.
July 14, 1904	Kake Trading and Packing Co.
Sept. 1, 1904	Kunz-Wygant Mining Co.
Jan. 7, 1904	Laskawanda Gold and Copper Co.
Dec. 21, 1903	Mitchell, Lewis & Staver Co.
July 25, 1904	Moonlight Mining and Ditch Co.
Oct. 21, 1904	Miners and Merchants Bank of Alaska.
Dec. 16, 1903	Nome River and New York Hydraulic Gold Mining Co.
Dec. 12, 1903	Northwest Coast Co.
June 2, 1904	Nizina River Placer Mining Co.
June 13, 1904	North Coast Lighterage Co.
Do.....	Northwestern Steamship Co., Limited.
July 14, 1904	North Alaska Steamship Co.
Oct. 17, 1904	Nome Fuel Co.
Do.....	Nome Electric Power and Supply Co.
Oct. 18, 1904	Northwestern Tin Mining Co.
Dec. 15, 1904	Niblack Copper Co.
July 14, 1904	Occidental Securities Co. of New York.
Dec. 16, 1903	Pacific Coal and Transportation Co.
Dec. 21, 1903	Pacific Coast Oil Co.
Aug. 4, 1904	Prince William Sound Mining Co.
Jan. 2, 1904	Revenue Mining Co.
Jan. 9, 1904	Ross, Higgins & Co., Limited.
July 14, 1904	Rowe Alaska Co.
Aug. 4, 1904	Ruby Creek Exploration Co.
Jan. 2, 1904	Southeastern Alaska Mining Co.
Jan. 16, 1904	Spokane-Alaska Oil Co.
Feb. 18, 1904	Sundum Mining Co.
Apr. 22, 1904	Seward Electric Co.
June 9, 1904	St. Michael Trading Co.
Oct. 12, 1904	Solomon River Ditch Co.
Oct. 14, 1904	Seattle and Nome Mining Co.
Nov. 9, 1904	Seward Peninsula Mining Co.
Do.....	Solomon River Hydraulic Mining Co.
Jan. 20, 1905	Sitka Water and Light Co.
Dec. 8, 1903	The Mansfield Gold Mining Co.
Dec. 8, 1903	Tanana Construction Co.
Feb. 6, 1904	The Cripple River Hydraulic Mining Co.
Feb. 15, 1904	The Whitestone Mining and Prospecting Co.
Feb. 23, 1904	The Crow Creek Consolidated Gold Mining Co.
Apr. 12, 1904	The Golden River Mining Co.
Apr. 25, 1904	Tanana Mines Railroad Co.
Apr. 25, 1904	The Klondike and Boston Mining and Manufacturing Co.
May 4, 1904	The Hubbard Elliott Copper Mines Development Co.
May 12, 1904	The De Soto Placer Mining Co.
May 20, 1904	The Union Pioneer Mining and Trading Co.
June 2, 1904	The Arctic Mining and Trading Co.
July 7, 1904	The Board of Home Missions, Presbyterian Church.
July 14, 1904	The Good Nome Mining Co.
Aug. 4, 1904	The Nome and Kougrok Consolidated Mines Co.
Do.....	The Douglas Clothing Co.
Aug. 17, 1904	The Golden Eagle Mining Co.
Aug. 20, 1904	The Ready Bullion Copper Co.
Aug. 22, 1904	The Federal Exchange Incorporation.
Sept. 1, 1904	The A. F. Schmitz Alaska Dredging and Mining Co.
Oct. 17, 1904	The Casa Co.
Do.....	The Richter Co.
Dec. 15, 1904	The G. M. Wakefield Mineral Land Co.
Dec. 22, 1904	The Alaska Gold Mining Co. of Indiana.
Apr. 12, 1904	Unuk River Mining, Smelting and Transportation Co.
Aug. 4, 1904	Union Fish Co.
May 6, 1904	Valdez and Northern Railroad Co.
Nov. 23, 1904	Valdez Transportation Co.
Feb. 1, 1904	Valdez and Boston Copper Co.

List of documents of foreign corporations filed in the office of the secretary of Alaska under chapter 23, title 3, of the civil code approved June 6, 1900, from February 8, 1905, to September 30, 1905, inclusive.

Date filed.	Name.	Date filed.	Name.
Feb. 8,1905	Alaska Fisheries and Development Co.	May 24,1905	Northwestern Fisheries Co.
Mar. 3,1905	Alaska Telephone and Telegraph Co.	May 29,1905	North American Transportation and Trading Co.
May 5,1905	Alaska Marble Co.	Mar. 15,1905	Orca Packing Co.
May 19,1905	Alaska Pacific Railway and Terminal Co.	Aug. 17,1905	Ophir Creek Hydraulic Mining Co.
May 25,1905	American Tin Mining Co.	Sept. 5,1905	One Man Mining Co.
May 24,1905	Alaska Rivers Navigation Co.	Mar. 7,1905	Rainbow Creek Manufacturing Co. of Alaska.
Apr. 3,1905	Bank of Seward.	Aug. 19,1905	Rodman Bay Co.
Apr. 21,1905	Cook Inlet Coal Fields Co.	May 9,1905	S. Foster & Co.
July 12,1905	Cedric Ditch Co.	May 27,1905	Stewart & Holmes Drug Co.
Sept. 1,1905	Council City and Solomon River Railroad Co.	Sept. 15,1905	Solomon Mining and Trading Co.
June 6,1905	Copper River and Northwestern Railway Co.	May 11,1905	Tanana Railway Construction Co.
May 29,1905	Deep Gravel Mining Co.	May 24,1905	The Fairbanks Dock and Warehouse Co. (Limited).
Feb. 17,1905	Gold King Mining Co.	Do.....	The Three Friends Mining Co.
July 24,1905	Galvin Mining and Ditch Co.	May 29,1905	Taylor Creek Ditch Co.
Apr. 17,1905	Lou De Von Mining and Milling Co.	June 6,1905	The Copper River and Northwestern Railway Co.
May 27,1905	Maryland-Virginia Mining Co.	Aug. 10,1905	Uncle Sam Copper Co.
Do.....	Manitowoc Fur Co.	July 12,1905	Valdez, Marshal Pass and Northern Railroad Co.
July 6,1905	Nome Wharf Co.	Mar. 20,1905	Washington-Alaska Bank.

Appendix C.

INCORPORATED TOWNS.

Name.	Date of incorporation.	Mayor.
Juneau	1900	John F. Maloney.
Eagle	1901	J. B. Howard.
Treadwell	1901	John J. Duckworth.
Nome	1901	J. S. Copley.
Valdez	1901	Henry W. Miller.
Douglas	1902	William Stubbins.
Wrangell	1903	Peter C. Jensen.
Fairbanks	1903	E. T. Barnette
Chena	1904	Martain Harrais.
Ketchikan	.....	George Irving.

Appendix D.

Newspapers in Alaska.—Alaskan, Sitka; The Daily Record-Miner, Juneau; The Daily Alaskan, Skagway; Daily Alaska Dispatch, Juneau; Alaska Forum, Rampart; The Douglas Island News, Douglas; The Nome Gold Digger, Nome; Nome Semi-Weekly News, Nome; The Orphanage News Letter, Wood Island; The Valdez News, Valdez; Nome Semi-Weekly Nugget, Nome; The Mining Journal, Ketchikan; The Alaska Prospector, Valdez; Alaska Sentinel, Wrangell; Yukon Valley News, Rampart; Council City News, Council City; Seward Gateway, Seward; The Alaska Transcript, Juneau; Daily News Fairbanks; The Times, Chena; The Cablegram, Sitka; The Sunday Times, Fairbanks.

APPENDIX E.

United States Signal Corps telegraph tariff for Alaskan lines.

[Superseding all previous tariffs on and after March 1, 1905. The rate given is in cents per word, the minimum charge for a commercial message being for ten words and for press messages 50 cents.]

Baker	Baker.
Birches	3	Birches.
Boundary	9	10	Boundary.
Central	5	7	3	Central.
Chena	3	5	6	3	Chena.
Chistochina	10	12	5	5	6	Chistochina.
Copper Center	10	14	7	7	8	2	Copper Center.
Cosna	2	2	9	5	3	10	12	Cosna.
Fairbanks	3	5	6	3	2	6	8	2	Fairbanks.
Fort Davis	16	13	22	21	18	23	24	15	18	Fort Davis.
Fort Egbert	9	11	2	3	6	4	8	8	6	22	Fort Egbert.
Fort Gibbon	2	2	10	6	4	9	11	2	4	13	10	Fort Gibbon.
Glen	2	3	9	3	2	10	10	2	2	16	8	2	Glen.
Golsova	9	7	16	14	11	16	17	9	11	8	15	8	9	Golsova.
Goodpaster	5	7	5	2	2	5	7	5	2	20	4	4	5	14	Goodpaster.
Haines Mission	30	30	25	30	30	25	25	30	30	35	25	30	30	30	30	Haines Mission.
Juneau	30	30	25	30	30	25	25	30	30	35	25	30	30	30	30	4	Juneau.
Kaltag	7	5	15	12	8	15	16	7	8	9	14	4	7	3	10	30	30	Kaltag.
Kechumstuck	7	9	3	2	4	3	5	7	4	21	2	8	7	15	3	25	25	14	Kechumstuck.
Keystone	12	14	9	7	9	3	2	12	9	24	8	13	12	18	9	25	25	17	7	Keystone.
Kokrines	3	2	12	9	6	12	14	3	8	13	11	2	3	7	7	30	30	3	10	15	Kokrines.
Koyukuk	7	3	14	10	8	15	16	5	8	9	13	4	7	3	10	30	30	2	12	16	3	Koyukuk.
Fort Liscum	12	15	8	8	9	3	3	13	9	24	9	13	12	17	8	20	20	16	6	2	14	16	Fort Liscum.
Loudon	5	3	14	10	6	14	15	5	6	11	13	3	5	5	9	30	30	3	12	16	2	2	15	Loudon.
Mentasta	9	10	5	3	6	2	3	9	6	22	5	9	9	16	5	25	25	15	3	5	10	14	5	14	Mentasta.
Melozi	5	2	12	9	6	14	14	3	6	13	12	3	5	5	9	30	30	3	23	26	10	9	14	2	12	Melozi.
Nenana	2	5	7	3	2	9	9	3	2	18	6	3	2	10	3	30	30	9	5	10	5	9	9	7	7	5	Nenana.
Nome	16	13	22	21	18	23	24	15	18	2	22	14	16	8	20	35	35	9	21	24	13	9	24	11	23	13	18	Nome.
North Fork	7	10	2	3	4	3	3	9	4	22	2	8	7	15	3	25	25	14	2	6	10	14	6	12	3	10	7	22	North Fork.
Nulato	7	3	14	10	8	15	16	5	8	9	13	4	7	3	10	30	30	2	12	16	3	2	16	2	14	3	9	9	14	Nulato.
Old Woman	9	5	15	12	9	16	16	7	9	9	14	6	9	2	12	30	30	2	14	17	5	2	16	3	15	3	9	9	14	2	Old Woman.
Rampart	3	3	12	8	5	11	13	3	5	13	12	2	3	8	6	30	30	6	9	14	3	7	15	4	11	4	4	14	10	7	8	Rampart.
Safety	16	13	22	21	18	23	24	15	18	2	22	14	16	8	20	35	35	9	21	24	13	9	24	11	22	13	18	2	22	9	9	14	Safety.
Saina	12	14	7	7	9	3	2	12	9	24	6	13	12	18	9	25	25	17	5	2	15	16	2	15	3	15	10	24	7	16	17	14	24	Saina.
Salcha	3	7	5	2	2	7	9	5	2	18	4	4	3	12	2	30	30	10	3	9	7	9	9	9	5	7	2	18	5	9	10	6	18	9	Salcha.
Seattle	35	35	30	35	35	30	30	35	35	40	30	35	35	35	35	20	17	35	30	30	35	35	25	35	30	35	35	40	30	35	35	35	40	30	35	Seattle.
Sitka	25	25	20	25	25	20	20	25	25	30	20	25	25	25	25	8	6	25	20	20	25	25	15	25	20	25	25	30	20	25	25	25	30	20	25	15	Sitka.
Skagway	30	30	25	30	30	25	25	30	30	35	25	30	30	30	30	2	4	30	25	25	30	30	20	30	25	30	30	35	25	30	30	30	35	25	30	20	9	Skagway.
St. Michael	10	7	16	14	11	17	17	8	11	6	13	9	10	2	13	30	30	3	14	18	6	3	18	4	15	6	12	6	16	3	3	10	6	18	12	35	25	30	St. Michael.
Summit	7	9	3	2	3	3	5	7	3	21	3	6	7	15	2	25	25	12	2	7	9	12	6	10	3	9	5	21	2	12	14	8	21	7	3	30	20	25	14	Summit.
Tanana Crossing	9	10	3	3	4	2	3	9	4	22	3	8	9	16	3	25	25	14	2	5	10	14	4	12	2	12	7	22	2	14	15	9	22	5	5	30	20	25	15	2	Tanana Crossing.
Teikhell	12	14	7	7	8	3	2	12	6	24	6	13	12	18	9	25	25	16	5	2	14	16	2	15	3	15	10	24	5	16	17	13	24	2	9	30	20	25	16	7	5	Teikhell.
Tolovana	2	3	9	5	3	9	10	2	3	16	8	3	2	10	3	30	30	7	7	10	5	7	11	5	9	5	2	16	7	7	9	3	16	12	3	35	25	30	10	5	7	10	Tolovana.
Tonsina	12	14	7	7	8	2	2	12	8	24	6	11	12	17	7	25	25	16	5	2	14	16	2	15	3	15	10	24	5	16	17	13	24	2	9	30	20	25	18	5	3	2	10	Tonsina.
Unalaklik	9	7	18	14	9	16	17	9	9	8	15	6	9	2	12	30	30	2	15	13	5	13	13	5	16	5	10	8	15	3	2	8	8	18	12	35	25	30	2	14	15	17	17	17	Unalaklik.
Valdez	12	15	9	9	9	3	3	14	9	24	9	13	12	18	9	20	20	17	7	2	15	17	2	16	5	15	10	24	7	17	17	15	24	2	10	25	15	20	18	7	5	2	2	2	18	Valdez.

FOREIGN CABLE RATES.

For all Alaskan offices via Seattle .... per word..	$0.25
For all Alaskan offices via Skagway and Fort Egbert ...... do....	.15

PRESS RATES TO AND FROM SEATTLE.

	Cents.
Sitka, Juneau, Haines Mission, and Skagway .... per word..	1.5
Valdez and intermediate offices to and including Mentasta... do....	2.0
St. Michael, Safety, Fort Davis, and Nome .... do....	3.0
All other offices .... do....	2.5

Local press rates one-fourth of the commercial message rates.

Appendix F.

REPORTS FROM VARIOUS SOURCES AS TO POPULATION, SCHOOLS, MARKETS, COST OF LIVING, ETC., AT CERTAIN CITIES, TOWNS, AND VILLAGES IN THE DISTRICT OF ALASKA.

Eagle City, Alaska, *September 26, 1905.*

Dear Governor: Your wire addressed to the mayor of this place was duly received, and I now offer the following in reply to your various inquiries:

Business has been generally good during the past year for the upper Alaska Yukon. Mining has been better rewarded than ever before. The American Creek district has been a good producer, and we can honestly predict a much better year and larger yield for the next.

Those engaged in agricultural pursuits have been better repaid than ever before. Abundant crops of potatoes, cabbage, turnips, celery, lettuce, radishes, beets, parsnips, carrots, rutabagas, etc., were raised. This is now demonstrated to be the best celery country in the whole of Alaska.

Salmon and greyling are caught in abundance, also pickerel, white-fish, and ling cod. The salmon are not so good as when caught near the salt water, but the others are of the best, the greyling equaling the best mountain trout.

Mining is the great undeveloped resource of this part of Alaska, and it will so remain until the General Government assists the people in the construction of wagon roads to the various mining camps and creeks now known to contain pay dirt, but not in sufficient quantities to work owing to the present high rates of transporting supplies with dog teams over hills and without even trails. We are now struggling with the Alaskan road commission for a limited sum of their fund for this purpose.

Living expenses have changed very little for several years; the price of groceries is not exorbitant compared with wages in only a few instances. Flour sells for $7.50 per hundredweight, cream $10 per case, kerosene at $9 per case, sugar $12 per hundredweight, potatoes, ordinarily, 10 cents per pound, wood at $10 to $12 per cord.

The natives are generally self-supporting, industrious, for Indians, well fed, well clothed, and well housed, and looked after generally by the Episcopal Church, which keeps a missionary to look after their spiritual needs, and also a school-teacher, who is not connected with the ministerial work. Our natives have never received any part of the Government moneys set apart for school purposes.

The general condition of the country is healthy, with the people progressive and happy.

Yours, truly,

V. L. Bevington,
Mayor.

Hon. John G. Brady,
Governor, Sitka, Alaska.

Haines, Alaska, *October 12, 1905.*

Dear Sir: In reply to your favor of the 2d instant, I beg to say the principal enterprises of our town are general merchandise, lumbering, and fishing. We have eight general stores, one sawmill, and four canneries within a radius of 9 miles of this place.

The sawmill has an output of about 20,000 feet per day. The canneries have an aggregate output of 120,000 cases a season.

There has been no progress in mining the past two seasons in this immediate vicinity, but there is an abundance of undeveloped mining property in this section, principally gold and silver, some copper, but very little.

Stock raising has not been carried on here to any extent, although it could be made a very profitable industry, as grass grows in abundance along the rivers and on the lowlands.

Freight rates are from 3 to 6 cents per pound within a radius of 100 miles, and that depends on the season of the year.

The population of Haines is 75 to 85 whites (outside the military post) and 200 to 300 natives.

Groceries.—Flour, $1.50 per sack (50 pounds); sugar, 14 pounds for $1; potatoes, 2 cents per pound, in small lots; canned goods, 20 to 25 cents per can; canned cream, 10 cents per can, or $4.25 per case; candles, $2 per box; wood, $3 to $4.50 per cord; coal, $13 per ton; kerosene, $3.50 to $3.80 per case of 10 gallons.

The demand for labor is limited, and there seems to be enough laborers to supply the demand at $3.50 to $4 per day.

Yours, respectfully,

Cortes Ford,
Chairman of School Board.

Hon. John G. Brady,
Governor of Alaska, Sitka, Alaska.

SEWARD, ALASKA, *September 24, 1905.*

DEAR SIR: In reply to your cablegram of the 23d instant, I am pleased to furnish the following information:

Seward is the Pacific terminus of the Alaska Central Railway, now under construction, to the Tanana River. The railroad is completed and in operation to mile 38, and grading is practically finished and ready for the rails to mile 45. From mile 45 to mile 105 about 1,200 graders are at work. Beyond mile 105 the engineering parties have completed definite location to mile 250.

Up to the present time Seward has thrived mostly on the business immediately connected with the building of the Alaska Central Railway and the prospecting and mining within a few miles of the town. It has grown from nothing in August, 1903, when the *Santa Ana* landed with the first construction party, to a population of 1,100 at the present time.

The peculiar topographical situation back of Seward makes it necessary for the Alaska Central Railway to project its line around Elwood Point, 105 miles north of Seward, just as the road leaves Turnagain Arm, before it can land passengers and freight into the interior of Alaska, and consequently before Seward can become a commercial and mining center of the first importance in Alaska. The north shore of Turnagain, where grading is now under way, is in many places abrupt and impassable. This obstacle has rendered the great Sushitna Valley practically isolated, but with the completion of the road beyond Turnagain Arm all of the vast extent of the Sushitna and other interior valleys will immediately be opened to travel and shipments of supplies every day of the year.

The railway company expects to have trains in operation to Elwood Point by July 1, 1906. From that time Seward will become the commercial center for all of central and southern Alaska.

Seward now contains 15 general stores, a bank, capitalized at $50,000, 7 saloons, 2 drug stores, 2 sheet-metal works, several good hotels, 3 churches—the Methodist, Episcopal, and Catholic—an electric plant, waterworks, a telephone exchange, a daily newspaper publishing a full cable service of the world's news, and not less than 100 new buildings of all kinds are under construction. The Alaska Central headquarters building is almost completed, at a cost of $60,000.

During the summer a copper ledge was discovered at the entrance to Resurrection Bay, 14 miles south of Seward, and another 6 miles east of Seward, directly across the bay. Samples from these two ledges assay from 7 to 23 per cent copper. A very rich quartz ledge was discovered in July, 30 miles north of Seward, on Falls Creek, 5 miles east of the Alaska Central Railway. The ledge has been traced 3,000 feet. It is 20 feet wide. Samples assayed have yielded as high as $1,500 per ton, and the lowest result obtained was $150 per ton. The locators are now installing a stamp. They have taken $20 a day to the man from the quartz by means of a simple arasta.

The Ready Bullion mine, 52 miles north of Seward, near the Alaska central track, ran a tunnel 240 feet below the apex during the summer, and at a depth of 300 feet found the ore body. It is a true fissure vein, varying in width from 8 inches to 6 feet of solid chalcopyrite ore. The ore assays from 17 to 28 per cent copper.

On Turnagain Arm, and in the Sunrise district, placer mining has been unusually active this year, due to the building of the Alaska Central Railway. Many new claims have been located, and last year's output of $300,000 will be largely increased.

Much interest has centered in the development of the Matanuska coal properties, 145 miles north of Seward. Pittsburg capitalists are opening some of the coal veins, and preparations are under way jointly by the Matanuska Coal Company and the Alaska Central Railway Company to handle a minimum of 1,000 tons of coal a day as soon as the rails reach the coal properties, in the fall of 1906. Analyses by the Government prove it to be the best grade of steaming and coking coal known on the continent. It goes as high as 72 per cent in fixed carbon, with little ash and sulphur.

The Sushitna Valley has been covered with several hundred prospectors since the opening of spring. One very promising camp on a branch of the Yentna has become a fixture in consequence, and an incipient stampede to the new diggings is in progress. Miners are making from $10 to $20 a day. Large areas of high grade hydraulic ground have been located.

A copper ledge was discovered on the north fork of Kaswhitney Creek, 50 miles north of Knik, in August, and coal has been found on every important stream flowing from the Talkeetna Mountains as far up the Sushitna Valley as the canyon—200 miles above its mouth.

Mr. A. L. Hills and several others in Seward and in Resurrection valley along the line of the Alaska Central are raising gardens equal to the gardens grown in any of the middle western States. They have supplied all of the local market the whole summer.

Stock raising is in its infancy around Seward, but thousands of square miles of grass lands are available to make it one of the most profitable stock-raising countries in the world. A dairy, supplying Seward with fresh milk, feeds its cows on the luxuriant native grasses.

The fisheries to the eastward and westward of Seward probably have been made the subjects of special reports to you.

The lumbering industry is developing. A sawmill of 10,000 feet capacity for public supply is under construction at Seward. The Alaska Central has its own mill, probably the best equipped in Alaska.

Freight rates here are about the same as in other parts of Alaska. Horse packing, in the summer time, averages about 5 cents a pound per 20 miles. The winter rate by sleds is 2½ cents per pound. The Alaska Central Railroad is not yet handling freight and does not intend to, so the officials announce, until it reaches Elwood Point.

The school population is 85.

Water rents by the Seward Water Company are $2.50 per month per residence, and 50 cents additional for each faucet.

The Seward Electric light Company charges $1.60 per light per month in residences, and $2 in hotels and business houses.

Groceries retail as cheaply here as in Seattle. Wood is plentiful. It retails at $4.50 per cord.

There is but one family of natives in Seward, the Lowells. They are half Russian and are healthy, industrious, intelligent, very honorable in all of their dealings, and well provided for.

The labor supply is far below the demand. Building operations in Seward have been greatly retarded by reason of the deficient supply of carpenters. The Alaska Central Railway employs from 1,000 to 2,000 men in all departments, and is advertising broadcast for more. The railroad scale runs from $2.75 per day for common labor to $4.50 per day for bridge carpenters, rockmen, firemen, and the like. It furnishes board and lodging for $6 a week. In Seward carpenters have been receiving 60 cents an hour all summer, and other laborers in proportion.

The foregoing has been approved by the executive committee of the Seward Chamber of Commerce, and is forwarded as an official statement of that body.

I have the honor to be,

Yours, very truly,

FRANK L. BALLAINE,
Secretary Seward Chamber of Commerce.

Hon. JOHN G. BRADY,
Governor of Alaska, Sitka, Alaska.

DOUGLAS, ALASKA, *October 4, 1905.*

SIR: In reply to yours of September 22, will say that the population of Douglas has increased about 10 per cent during the past year, mostly Slavic and Finnish workmen for the mines, with their families.

The cost of living has increased from 5 to 10 per cent.

There was an active demand for workmen during the past year, which demand, I believe will greatly increase during the next season.

Yours, very respectfully,

WM. STUBBINS, *Mayor of Douglas.*

Hon. J. G. BRADY,
Governor of Alaska.

DOUGLAS, ALASKA, *October 14, 1905.*

DEAR SIR: In answer to your communication of September 22 last, I wish to say:

The amount of taxable property in the town of Douglas for the year 1905 was $315,000. The rate of taxation one-half of 1 per cent. The population, taken June 20 last, was 1,284, exclusive of natives, and the population of Douglas Island (including Douglas and Treadwell), 2,260.

Cost of living is very moderate, probably cheaper than in any other Alaskan town; as for instance, No. 1 flour sells to-day at $1.60 per sack; sugar, 6½ cents per pound; potatoes, 2 cents per pound; creamery butter, 30 cents per pound; eggs, 30 cents per dozen; coal, $10 per ton, delivered; water, $1.50 per month for family use; a comfortable family cottage of four rooms can be rented for from $8 to $10 per month; wood, sawed and split, $4 per cord; coal oil, $3.40 per case; electric lights, $1 each per month.

Work is plentiful; common labor $2.60 per day up to $5 for skilled labor, principally connected with the mining industry, of course. There are 7 churches, 3 public halls, 9 saloons; all the fraternal societies are well represented.

There are about 2 miles of planked streets, 3 uniformed fire companies, with a total of 78 men, and 3 hose carts, with 2,750 feet of hose. The city is exceptionally well provided with water, both for fire protection and domestic purposes, for the former, from the great Treadwell ditch brought to the town and available for fire protection purposes under 217 pounds

pressure; for the latter, from 2 large reservoirs back of town, in the hillside, fed from the ever snow-capped mountains situated to the south.

Everybody is healthy and should be happy, with plenty of work for everyone who needs it, at fair wages, and good health and an equable climate, where poverty is unknown; in a democratic community, where nature is at all times expressing herself in heroic moods.

The Treadwell Company, with its five or six millions of invested capital, its pay roll of $60,000 a month, kindly disposed toward their employees, and the town's welfare, all these things combine to make Douglas what she is, the ideal Alaskan worker's town.

Yours, very truly,

JOHN HENSON, *Clerk.*

Hon. J. G. BRADY,
Governor of Alaska, Sitka, Alaska.

DOUGLAS, ALASKA, *October 3, 1905.*

DEAR SIR: Your letter received, and in answer wish to say, in regard to social life Douglas is advancing rapidly; there are more families constantly settling here and house accommodation is in increased demand. Many new dwellings are being built, also churches, and new orders of fraternal societies are being established. We increased the number of teachers in our public school this year by placing a male principal in charge of the higher grade work—in fact, of first year work of the high school.

Our industrial interests are also gaining. The Treadwell Company has bonded the Red Diamond property on the south end of the island, and is actively pushing development work on the same.

Also about 1½ miles from this the Alaska Treasure Gold Mining Company has begun active development work by installing a compressor, running tunnels, sinking shafts, and building a road of some 3 miles in length.

Our natives are few in number, but all self-supporting, working in the mines when they wish to, and at other seasons of the year working at fishing.

Altogether, Douglas is doing remarkably well, and her prospects for the future are very bright.

Very truly, yours,

FRANK BACH,
Chairman of School Board.

Hon. J. G. BBADY,
Governor of Alaska.

DOUGLAS, ALASKA, *October 1, 1905.*

DEAR SIR: Yours of the 25th ultimo at hand. There were enrolled last year 126 pupils. A principal and two assistant teachers were employed, at the following salaries: Principal, $110 per month; assistant teachers, $85 per month each.

The school this year has an enrollment of 129.

Yours, respectfully,

E. J. MCKANNA,
Secretary of the Douglas School Board.

Hon. JOHN G. BRADY,
Governor of Alaska.

KETCHIKAN, ALASKA, *October 3, 1905.*

DEAR SIR: The population of this town is about 1,100. Census taken one and a half years ago showed at that time a population of 964. The immigration is almost exclusively American.

The labor supply this spring and summer has been inadequate. Any person looking for work could and can find ready employment. All summer it has been impossible to get men.

In camps, wages, $3.50 per day, $1 for board. Cost of living in town at hotel, $2.50 per day. Miners and prospectors generally live in cabins. Cost of living there about $15 per month, that, of course, being graduated by the parties.

Yours, truly,

GEORGE IRVING, *Mayor.*

Hon. JOHN G. BRADY,
Governor of Alaska, Sitka, Alaska.

KETCHIKAN, ALASKA, *October 4, 1905.*

SIR: In compliance with your request I beg to report the Ketchikan public schools as follows:

Last year's attendance was 52. We employed two teachers, paying $80 and $90, respectively. We had a nine-months' term.

This year we have two teachers at $85 and $100 per month. There are 62 pupils in attendance. I do not know the school population, as no census has been taken for this purpose.

Very respectfully submitted.

Your obedient servant,

J. E. RYUS, *Clerk.*

Hon. J. G. BRADY,
Sitka, Alaska.

KETCHIKAN, ALASKA, *October 13, 1905.*

SIR: In reply to yours of the 22d ultimo, asking for information about our town, I respectfully submit the following:

Ketchikan has a population of about 1,100, including Indians. The value of the taxable property is about $450,000, and the rate of taxation is one-half of 1 per cent. Board in the town is about $30 per month, and comfortable rooms can be rented at from $10 to $15 per month. House rent is about the same as in Seattle, being all the way from $10 to $30 per month, according to location and conveniences. Wages at the neighboring mines are on an average about $2.50 per day and board. The light rates are, 16 candlepower, $1 per month; 32 candlepower, $1.50 per month. The water rates are, single faucet, $1 per month; closet, 75 cents, and bath, 75 cents per month; steamers, under 50 tons, $5 per month; over 50 tons, $10 per month.

The price of coal is $10 per ton; to steamboats, $9 per ton. Wood is about $6 per cord. Kerosene is 35 cents per gallon, or $3.25 per case of 10 gallons. Candles are $2.50 per box of 20 sets.

The prices of groceries are the same as in Juneau. The labor supply is at present quite adequate to meet the demands, but during the past summer the demand exceeded the supply

The freight rates are, to all points on the west side of Prince of Wales Island, $4 per ton; to points on the east side or nearer, $3 per ton.

Respectfully,

H. L. FAULKNER,
City Clerk.

Hon. JOHN G. BRADY,
Governor, Sitka, Alaska.

WRANGELL, ALASKA, *October 14, 1905.*

SIR: In compliance with your request of September 26 the following report is respectfully submitted:

Number of teachers employed for the term 1904–5: White school, 2; salaries, principal, $80; assistant, $60; number of pupils enrolled, 56. Native school, 1; salary, $50; number of pupils enrolled, 32.

For the term 1905–6 the number of teachers employed, 2; salary of principal, $80; of assistant, $60; number of pupils enrolled, 63.

Very respectfully,

L. M. CHURCGHILL,
Director of School Board.

Hon. JOHN G. BRADY,
Governor of Alaska, Sitka, Alaska.

WRANGELL, ALASKA, *October 18, 1905.*

SIR: I have the honor to submit to you the report of the public school of this place for the term 1904–5, as follows:

Number of pupils, public school, 56; native school, 38; public school, September, 1905, 63; teachers employed, 2; salaries paid, $80 and $60 per month; total for the year, $1,260.

Respectfully,

EDWIN HOFSTOD,
Secretary of the School Board.

Hon. JOHN G. BRADY,
Governor of Alaska.

TREADWELL, ALASKA, *October 15, 1905.*

DEAR SIR: In reply to yours of September 25 would say that the school at Treadwell employs one teacher at a salary of $100 per month.

There are 15 scholars attending the school at present, and would say that the present school population is about 20.

Yours, truly,

_____ _____,
Clerk of School Board.

Hon. JOHN G. BRADY,
Governor of Alaska, Sitka, Alaska.

KARLUK, ALASKA, *July 7, 1905.*

Prices.—Flour, per hundredweight, $3 to $3.50; sugar, per pound, 10 cents; coffee, per pound, 30 cents to 40 cents; beans, per pound, 10 cents; bacon, per pound, 20 cents; dried fruits, per pound, 10 cents to 20 cents; cheese, per pound, 20 cents; tea, per pound, 50 cents; potatoes, per pound, 3 cents; onions, per pound, 6 cents; baking powder, per pound, 75 cents; condensed milk, per case, $10; tomatoes, per case, $3.50; coal oil, per case, $3; wood, per cord, ——; coal, per ton, $15. Freight, by boat, per ton, $17 from Seattle to Karluk.

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NUSHAGAK, ALASKA, *December 13, 1904.*

DEAR GOVERNOR: Since reading your last year's report and noting much that is of deep interest to us in this western part of the district, it has occurred to me that an account of the conditions and needs of this region of Alaska might be of interest to you.

Without a doubt the greatest industry of this western country is that of fishing, which industry makes for a short part of the year regions that otherwise would be almost a desolate waste into active camps or settlements. While, in a measure, these canneries bring in civilization and foster settlement, yet as a rule the whole establishment, labor and all, is imported for a very short season and as rapidly exported when the fishing season is over.

There is no doubt that much wealth in fish is exported annually and that the canneries are a good in the land. Sometimes we think that a good thing may be overdone, especially along the line of catching and canning the salmon. The perpetuation of such an industry is probably of more benefit than the great catches sought for a short period and then probably the destruction of the industry by not allowing enough fish to spawn to perpetuate the desired annual run of fish. The trap is undoubtedly the greatest evil of the fishing industry, for the fish that are too small to be caught by the nets are sure to be retained in the traps. If the traps could be confined to one bank of a river, and not allowed to extend more than halfway across the stream, enough fish would pass; or if the traps were removed, i. e., opened one day in the week, much the same result would be obtained and enough fish would get to the spawning grounds to perpetuate the industry. Under the present conditions in many of the streams where the fishing industry is the most fruitful, it is apparent that the industry must decline from a lack of fish getting to the spawning grounds, and later a lack of fish in the annual run when the fish seek the spawning grounds. At all the canneries there are left watchmen to care for the canneries over winter. The truth is, that during the cold months they are not very busy and often find the life lonely and amusements of a desirable nature very scarce.

The canneries, in a business sense, have not found it either desirable or profitable to import men with families to be watchmen, and so the men residing in the country from year to year constitute a changeable population. Some, however, who choose this country as a home have desired to build homes and settle. Suitable wives are not imported by the company and a goodly number have tried the art of civilizing native wives, with varying degrees of success. However, the diseased condition of the native and almost unavoidable causes have often caused the dissolution of many homes, leaving often in the land children that are stronger than the pure native children and often less suited for the privations of the native home. This class is surely one to be reckoned with, for if uneducated and untrained in some practical manner will prove a restless population, when, if well trained, they would be capable of becoming steady and valuable members of society.

It seems something extra should be allotted to the training and development of white men's children, who are more industrious and reliable than the pure native, with all his instincts to the ways of uncivilized parents.

With this also should be mentioned the schooling in general of both the native and white children. In the first place, compulsory education is to be desired; and in the second place, the education should be more of the manual training than of the higher studies, for it is a question of how to win the daily bread and clothing by labor that has some market value.

Turning to the native question of itself as a factor in the land, there is much room for thought and theory. There is no doubt that the old ways of living must change in a great measure and it would not be well to check this change, for in the first place game and fish are decreasing and will decrease to such an extent as to make a change necessary for the native. It is the intermediate stage of change that kills, for in substituting light clothing for furs, and poorly cooked white man's food for meat and fish, it is but reasonable that the door would be opened for other maladies of the native as a race. Were it also the custom to quarantine for the disease of consumption or tuberculosis there would be few homes, indeed, exempted. The natural end of the Indian and Eskimo is consumption, and few there seem that can escape the disease. The only hope is that of educating them in regard to the contagious nature of the malady and encouraging them to live in a more hygienic manner.

We notice with pleasure your recommendation for hospitals for the natives in various parts of the district. There is no doubt that such would be very beneficial and especially so if the physicians in charge were enabled to enforce sanitary measures in the homes of the diseased as well as in any hospital or institution.

From the early part of this letter you might believe that the only industry worthy of consideration is that of fishing, but we would only think of that as the most flourishing at this date. All of this western part of Alaska has places where it would not be incompatible with good reason for home seekers to come. Garden products and farming possibilities make it possible for any one settling in these parts to raise the most of the fresh goods needed for a living, and where there are also industries that offer employment there should be, and in time will be, no reason why many parts can not or will not have a thrifty community of settlers who make Alaska their permanent home.

There is one region in particular that, if not settled by home seekers, should be reserved from injury, and that is the Wood River lake country. Surely the region around the Wood River lakes is the Switzerland of Alaska, and the beautiful banks should not be robbed of the timber that has been growing so long and that can be secured in regions less noted for beautiful scenery. If the Government makes any park reserves for Alaska surely the Wood River and its lakes should be set apart as such. To these lakes go all the red salmon of the Nushagak to spawn, and not to other lakes, and as a natural spawning ground and hatchery these lakes should be reserved. In the mountain region of these lakes is to be found the moss most suitable to the reindeer, and in time will likely be the home of many deer. Certainly a more beautiful location can not be found for large deer herds and the home of the herders.

We are wont to yet beg patience while we recount a matter on which much favorable and adverse criticism has been given, and that is in regard to the domesticated reindeer. Vast herds of caribou have ranged over this western country and are still to be found in places. These animals are fast becoming extinct and the time is practically here when they can not be counted upon as a sure article of food. The fact remains that the pasture grounds of the wild caribou is also good pasture grounds for the tame deer, and the extermination of the one opens the way for the introduction of the other. The mountain country between the Nushagak and the Kuskokwim rivers is a beautiful deer country and capable of pasturing many thousands of these animals, and in time will be—as the western plains of the States are to the East in cattle raising, so will these mountains of Alaska be in deer raising—the source of much of Alaska's meat and warm clothing. The herd under the care of the Moravian Mission is doing very well indeed and numbers over 1,100 deer, and now, after sufficient time for a thorough trial, the utility and sound reason of the enterprise is fully demonstrated to us. To the dismay and derision of those who unknowingly adversely criticise the deer project the herds steadily increase and the nebulized nonsense thus sprayed on the subject is rather to the benefit of the deer project than against it. It would be a poor project indeed, unless some calamity howler, like the wolf on the outside of the herd, did but occasionally raise the wail of disappointed distress.

Trusting you will not weary with these "short (?) and simple annals of the poor,"

I am, very respectfully,

J. H. Romig, M. D.

Governor John G. Brady,
Sitka, Alaska.

CIRCULAR ISSUED BY THE CHAMBER OF COMMERCE, JUNEAU, ALASKA, JULY 1, 1905.

Population, 2,500; municipal government since July 1, 1900; area within incorporated limits, 231 acres.

Banks (two).—The First National, which is the United States Government depository for southeastern Alaska, capitalized at $50,000; surplus, $5,500; B. M. Behrend's Bank, paid-up capital stock, $100,000; surplus, $10,000. Deposits at the two banks, over $400,000.

Mercantile business.—Six general mercantile stores, each carrying stock from $15,000 to $90,000; 2 general hardware stores and lumber yards, 1 sawmill, 2 butcher shops, 3 drug stores, 2 plumbing establishments, 2 machine shops and blacksmiths, 12 grocery and fruit stores, 2 book stores, 2 milk ranches, 1 billiard hall, 3 barber shops, 3 tailor shops, 2 steam laundries, 1 tenpin alley; 1 brewery, capacity 315 barrels daily; 1 sardine packing plant, 11 saloons, 4 cigar stores. The Juneau electric-light plant has two dynamos, capable of generating 8,000 16-candlepower lights. Cost per light to consumers, $1 per month. The plant is valued at $120,000.

Water supply and fire protection.—The water system draws its supply from two tanks at the rear of the town, 190 feet above the main business street; capacity of tanks, 380,000 gallons. Street pipes are of steel and the hydrants are nonfreezing. Two well-organized volunteer hose companies and one hook and ladder company, with proper material for handling fires.

General fund.

Receipts to December 31, 1904	$28,603.51
Disbursements to December 31, 1904	21,992.42
Balance on hand	6,611.09
Amount of school fund	10,500.00
Paid out for local improvements, replanking streets, and sewers	14,000.00

Papers.—Juneau has two daily newspapers, one morning and the other evening, publishing news from the outside world, received over the United States cable connecting Juneau and other Alaskan towns with Seattle, Wash., and by telegraph from Dawson and the Yukon territory.

Learned professions.—Juneau has four surgeons engaged in active practice. In the legal profession, 19 resident lawyers. The law books in Juneau aggregate 6,000 volumes. Juneau is the seat of the judiciary for the first division of Alaska. Cost of court-house, $60,000.

Assessed valuation and tax levy.—Total assessed valuation of Juneau is $1,141,215; tax levy, 7 mills; amount of tax levied, $7,988.74.

Freight and tonnage.—Total number tons received, 7,325; total number tons forwarded, 2,381. General merchandise does not include coal.

Religious and benevolent.—Five church organizations (Catholic, Presbyterian, Methodist, Episcopalian, and Greek Orthodox, with five places of worship. Total number of families connected with these organizations, 192; total membership, 587); total number of children enrolled in the Sabbath schools is 216.

Juneau has five orders (the Masons, Elks, Odd Fellows, Red Men, and the Knights of Pythias); also two hospitals, capable of accommodating 75 patients at one time.

Hotels.—Juneau has 9 hotel and lodging houses, containing 287 rooms, with capacity to accommodate 431 guests, all lighted by electricity and some heated by steam.

Educational.—Juneau has a graded school, employing 7 teachers teaching 12 grades Number of children enrolled, 286, with separate school for natives. The public school building, costing $12,000, is electric lighted, heated by steam, and is free from debt. There was collected last year, general license money, $23,946, of which $9,000 was applied to the school fund.

Climate.—The coldest weather experienced last winter was 8° above zero.

United States customs, port of Juneau.

Value of imports paying specific duties	$154,310.00
Receipts for duties	32,030.11

Shipments of domestic merchandise from the United States to Juneau:

Coal	$7,701
Lumber	4,721
Hardware and machinery	51,155
Provisions	212,519
Liquors	37,621
All others	245,260
Total	558,977
Year 1903	346,616
Increase	212,361

Postal statistics.—Money orders received, $100,259.11; money orders paid, $73,358.64; salary of postmaster, second-class office, $1,600.

Wages and cost of living.—Wages, common labor, $3 per day Cost of living is about the same as that of Puget Sound, the freight rate by steamer of $8 per ton offsetting the high rents paid on the Sound.

Mines and mining.—There are in the immediate vicinity of Juneau, outside of Douglas Island, 230 stamps, employing 325 men; 3 hydraulic mines, employing 110 men. At least 40 prospective mines in course of development.

Silver Bow basin, immediately back of Juneau, will within a few years alone give employment to 5,000 persons. The future outlook is very encouraging.

The United States land office for the district of Alaska is located at Juneau.

Treadwell.—Total production for the year 1904, $2,988,154.21; average number of men employed, 985. Shipment of domestic merchandise from the United States to Treadwell: 1904, $625,077; 1903, $239,077; increase, $386,693.

Douglas City.—Population, 1,100; shipments of domestic merchandise to Douglas City, $241,525. Treadwell and Douglas City 3 miles distant across Gastineau channel from Juneau; ferry connecting, running hourly.

Mine owners and operators' club.—Conducted as large clubs in cities and composed of 100 members made up of the prominent mining and business men of the district. Object, entertainment of visitors and advancement of the district. Quarters occupied is a two-story building, furnished throughout. The reading room is supplied with 30 of the leading daily papers, periodicals, etc. Cabinets display mineral specimens, etc.

Customs report for district of Alaska, 1904.

Domestic gold shipped to United States	$9,082,581
Domestic gold exported	613,781
Gold imported from foreign countries	10,791,243
Foreign gold shipped to United States	10,010,520
Domestic exports from Alaska	1,141,569
Shipments of domestic merchandise to United States	10,596,060
Merchandise imported direct from foreign countries (free)	752,658
Merchandise imported direct from foreign countries (dutiable)	508,293
Duties collected on merchandise	109,494
Expense of collection	60,000

The value of salmon pack was over $8,000,000.

Original cost of Alaska, $7,200,000.

Tonnage movements, 1904.—Steam vessels: Entered, 148; tonnage, 181,223; cleared, 114; tonnage, 136,903. Sail vessels: Entered, 36; tonnage, 27,893; cleared, 14; tonnage, 7,191.

Value of domestic merchandise shipped from the United States to Alaska.

	1903.	1904.	Increase.
Southeast Alaska	$3,176,619	$3,774,502	$597,883
Southern Alaska	1,493,402	1,767,418	274,016
Bering Sea	3,641,735	4,309,185	667,450
St. Michael and Yukon River	689,449	1,202,892	513,443
Total	9,001,205	11,053,997	2,052,792

Value of merchandise entered for consumption from foreign ports during years 1904 and 1903.

	1904.	1903.
Coal	$337,662	$248,207
Lumber	5,295	10,338
Machinery	206,033	18,605
Provisions	357,533	117,931
Liquors	19,481	10,299
All others	567,549	288,920
Total	1,496,786	691,079

Increase 1904, $805,707.

The chamber will gladly answer any correspondence.

Respectfully,

JUNEAU, ALASKA, CHAMBER OF COMMERCE.

JUNEAU, ALASKA, *October 23, 1905.*

Freight rates to surrounding settlements.—Juneau to Hoonah, Tenakee, Killisnoo, and Sitka, per ton, $5; Juneau to Snettisham, Sumdum, Windham, and Kake, per ton, $5; Juneau to Eagle River and Tee Harbor, per ton, $3; Juneau to Jualin, Haines, and Skagway, per ton, $4.

Appendix G

Mail routes in Alaska, with names of the contractors, rates of pay, and the intermediate offices supplied.

Route No.	Service.	Intermediate offices.	Period and frequency.	Contractor.	Pay.
78038	San Francisco to Nome and St. Michael.	.....	2 round trips, season of navigation, 1905.	Pacific Coast Steamship Co., W. E. Pearce, manager.	a $0.04
78039	Nome to Nome.....	Solomon, Golovin, St. Michael, Nome, Teller, Wales, Deering, Keewalik, Kotzebue.	1 in 10 days, June 10, 1905, to Oct. 15, 1905.	L. H. Gray, agent.....	b 150.00
78040	Seattle to Nome.....	.....	1 round trip, season of navigation, 1905.	.....do.....	a .04
78041	Juneau to Kake.....	Snettisham, Sumdum, Windham, Cape Fanshaw (n. o.).	Once a week.....	Henry Shattuck.....	7,500.00
78042	Seattle to Valdez and Seward.	.....	1 in 20 days.....	Alaska-Pacific Navigation Co., E. E. Caine, president.	b 1,000.00
78043	Catalla to Kayak.....	.....	4 times a month.....	Jack Smith.....	950.00
78045	Nushagak to Nushagak....	Quinhagamut (n. o.), Unalaska (n. o) ...	4 round trips, season of navigation, 1905.	Frank Joaquin.....	c 2,000.00
78049	Nulato to Bettles.....	.....	Not less than 2 nor more than 5 round trips, season of navigation, 1905.	Northern Commercial Co., M. L. Washburn, general manager.	b 300.00
78050	Seattle to Skagway.....	Ketchikan, Petersburg, Douglas, Juneau, Haines.	1 round trip every 10 days, Mar. 1 to Nov. 30, each year.	Humboldt Steamship Co., M. Kalish, vice-president.	b 125.00
78054	Wrangell to Jackson.....	Woedsky, Shakan, Klawock, Sulzer, Coppermount.	2 a month, Oct. 1 to Mar. 31, and 1 a week, Apr. 1 to Sept. 30.	R. C. Turner.....	4,617.91
78055	Skagway to Haines.....	.....	6 times a week, May 1 to Oct. 31, and 3 times a week, Nov. 1 to Apr. 30.	Wm. Layton and Wm. Germain.....	2,000.00
78056	Juneau to Sitka.....	Douglas, Funter, Hoonak, Tenakee, Killisnoo, Rodman.	1 round trip every 6 days.....	Henry Shattuck.....	7,887.87
78058	Tanana to Fairbanks.....	Tolovana.....	3 round trips in May, 6 round trips each in June, July, Aug., and Sept., 1905.	Northern Commercial Co., M. L. Washburn, general manager.	b 250.00
78059	Seattle to Nome.....	.....	17 round trips, season of navigation, 1905.	White Star Steamship Co., M. E. Reed, president.	a .04
78060	San Francisco to Nome and St. Michael.	.....	10 round trips, season of navigation, 1905.	Northern Commercial Co., M. L. Washburn, general manager.	a .04
78061	Teller to Kotzebue.....	Wales, Deering, and Keewalik (n. o.).....	7 round trips, season of navigation, 1905.	Northern Commercial Co., M. L. Washburn, general manager.	b 400.00
78065	Seattle to Skagway.....	Metlakatla, Ketchikan, Wrangell, Juneau, Douglas, and Haines.	4 times a month.....	Alaska Steamship Co., Walter Oakes, president.	b 75.00
78066	....do.....	Ketchikan, Juneau, Douglas, Haines.....	1 round trip every 5 days, Mar. 1 to Nov. 30, and every 12 days, Dec. 1 to Feb. 28, each year.	.....do.....	b 125.31
8071	San Francisco to St. Michael and Nome.	....	10 round trips during season of 1905..	Northern Commercial Co., M. L. Washburn, general manager.	a .04

a Per pound. b Round trip. c Season.

Mail routes in Alaska, with names of the contractors, rates of pay, and the intermediate offices supplied—Continued.

Route No.	Service.	Intermediate officers.	Period and frequency.	Contractor.	Pay.
78072	Seattle to Nome and St. Michael.		6 round trips during season of 1905	Pacific Coast Steamship Co., W. E. Pearce, manager.	[a] $0.04
78073	Seattle to Nome and Teller		16 round trips during season of 1905	Northwestern Steamship Co., limited, J. D. Trenholme, secretary.	[a] .04
78076	Homer to Sunrise	Kussiloff (n. o.), Kenai, Tyoonok, and Hope.	6 round trips, Homer to Sunrise, and 7 round trips, Tyoonok to Sunrise from Apr. 20 to Oct. 31, in each year.	Alaska Commercial Co., M. L. Washburn, superintendent.	[b] 200.00
78077	Ketchikan to Ketchikan	Metlakatla, Niblack, Dolomi, Chomley, Revilla, Loring, Kasaan, and Hollis.	1 a week	Frank H. Knight	5,294.77
78078	Juneau to Skagway	Jualin, Comet (n. o.), Haines	2 trips a week, May 1 to Oct. 31, and 1 trip a week, Nov. 1 to Apr. 30, in each year.	Willis E. Nowell	7,400.00
78080	Seattle to Skagway	Port Townsend, Ketchikan, Wrangell, Petersburg, Juneau, Douglas.	Twice a month	Pacific Coast Steamship Co., Edwin Goodall, secretary.	16,000.00
78089	St. Michael to Teller	Golovin, Bluff, Solomon, Nome	Twice a month, June 15 to Oct. 15, each year.	Northern Commercial Co., Leon Sloss, president.	2,715.52
78090	Juneau to Kodiak	Sitka, Yakutat, Orca, Ellamar, Valdez, Seward, Seldovia, Homer, Kussiloff (n. o.), Kenai, Tyoonok.	1 a month, Apr. 1 to Oct. 31	Alaska Commercial Co., M. L. Washburn, superintendent.	8,003.75
78092	Seattle to St. Michael	Nome	7 round trips, season of navigation, each year.	Northern Commercial Co., Leon Sloss, president.	[b] 470.00
78099	Seattle to Valdez	Juneau, Sitka, Yakutat, Kayak, Nutchek (n. o.), Orca, Ellamar, Fort Liscum.	Twice a month	Pacific Pack and Navigation Co., T. B. McGovern, vice-president.	27,427.31
78100	Valdez to Udakta	Seward, Seldovia, Homer, Kodaik, Uyak, Cold Bay (n. o.), Karluk, Chignik, Unga, Coal Harbor, Sandpoint, Belkofsky (n. o.).	Once a month	do	13,086.20
78104	Eagle to Tanana	Circle, Fort Yukon, Rampart	1 a week, 8 months; 2 a month, 4 months.	Northern Commercial Co., Leon Sloss, president.	45,005.44
78106	St. Michael to Tanana	Unalakleet, Eaton (n. o.), Kaltag (n. o.), Nulato (n. o.).	do	do	39,500.00
78108	Nome to Unalakleet	Solomon, Golovin	1 a week, 4 months; 2 a month 3 months.	John Alva Calkins	12,100.00
78109	Koserefsky to Kaltag (n. o.)	Anvik	Once a month	Northern Commercial Co., Leon Sloss, president.	6,000.00
78110	Valdez to Eagle	Tonsina, Copper Center, Slahna (n. o.), Tetling (n. o.), Franklin, Chicken, Jackwade.	Twice a month	Oscar Fish	36,208.29
78113	Nome to Teller		Twice a month, Oct. 15 to June 30, each year.	M. A. Mahoney	2,466.86
78115	Coppermount to Chomley	Sulzer, Head of Copper Inlet (n. o.), Head of Chomley Sound (n. o.).	Once a week	Jacob Lauth	1,400.00
78116	Chisna to Route 78110		Once a month	John R. Crittenden	1,920.00
78117	Hope to Seward	Sunrise	Once a month from Nov. 1 to Mar. 31	Anton Eide	1,790.00

78118	Bethel to Cold Bay (n. o.)	Dillingham, Nushagak	3 round trips, Dec. 1 to Mar. 31, each year.	Oscar Foote and John Campbell	4,061.75
78119	Haines to Porcupine		Once a week	Michael J. O'Connor	1,490.00
78121	Golovin to Council		Twice a month	Ben F. Nudd	3,300.00
78122	Unga to Apolla		2 round trips a month	Charles A. Fletcher	180.00
78123	Homer to Kenai	Neuelchek (n. o.), Kussiloff (n. o.)	Once a month, Nov. 1 to Mar. 31, each year.	Alexander R. Ryan	[c] 900.00
78124	Fort Yukon to Bettles	Coldfoot	2 round trips a month, except June and October each year.	Adelbert E. Carr	10,000.00
78125	Barrow to Kotzebue	Point Hope (n. o.)	2 round trips during winter each year.	S. R. Spriggs	[b] 750.00
78127	Teller to Igloo		1 a week, June 15 to Oct, 31, and 2 a month, Nov. 1 to June 14, each year.	F. Kleinschmidt	2,200.00
78128	Circle to Mastodon	Central House (n. o.), Miller House (n. o.)	1 a week, June 1 to Sept. 30, and 2 a month, Nov. 15 to Apr. 15, in each year.	Charles M. Stover	1,600.00
78135	Valdez to Tanana	Fairbanks, Chena, Tolovana	Twice a month, Oct. 1 to May 31, each year.	Oscar Foote and Joseph F. Grant	21,945.00
78136	Teller to Wales		Twice a month from Dec. 1, 1905, to Apr. 30, 1906.	Serawlook	[c] 575.00
78138	Valdez to Tanana	Fairbanks, Chena, Tolovana	Twice a month from Nov. 1, 1905, to Apr. 30, 1906.	Valdez Transportation Co., Incorporated, James Fish, president.	[c] 22,360.00
78140	Valdez to Eagle	Tonsina, Copper Center, Slahna (n. o.), Tetling (n. o.), Chicken, Franklin, Jackwade.	Twice a month from Nov. 1, 1905, to Apr. 30, 1906.	....do	[c] 15,000,00
78141	Fairbanks to Circle		Twice a month from Nov. 1, 1905, to Apr. 30, 1906.	Joseph Williams	[c] 2,149.00
78147	Tonsina to Nizina	Stephens Road House (n. o.), Elliott Creek (n. o.), Kuskalina, n. o.), Lochana (n. o.), Kennicott (n. o.), and Dan Creek n. o.).	2 round trips a month from May 15 to Oct. 31, 1905.	James Fish	[b] 150.00
78148	Valdez to Fairbanks		Four times a month from Nov. 1, 1905, to Apr. 30, 1906.	Valdez Transportation Co., Incorporated, James Fish, president.	[c] 24,000.00
78151	Hope to Seward	Sunrise	1 a month from Nov. 1, 1905, to Mar. 31, 1906.	Anton Eide	[c] 500.00
78152	Koserfsky to Bethel	Pimute (n. o.), and Russian Mission (n. o.)	1 a month from Nov. 1, 1905, to Apr. 30, 1906.	George Morgan	[b] 125.00

[a] Per pound.

[b] Round trip.

[c] For period.

Appendix H.

STATEMENT SHOWING VALUE OF MERCHANDISE CONSIGNED TO EVERY PORT OR PLACE IN ALASKA FOR THE CALENDAR YEAR 1904.

United States Customs Service,
Port of Juneau, Alaska, February 1, 1905.

This office last year gave to the public a statement of merchandise received in Alaska from foreign and domestic ports, distributed, as consigned on manifests, to the different ports and places in Alaska. Although not entirely accurate it seemed to meet the demand for information by shippers and transportation companies as to the trend and magnitude of trade of particular places in Alaska. The public appreciation of the report has prompted its continuation from year to year, which will be of more value as comparisons will be shown.

This report gives the value, in dollars, of the imports of Alaska, both domestic and foreign, for the calendar year 1904 under the six heads of "Coal, lumber, hardware and machinery, provisions, liquors, all other." This report shows an increase in domestic products received of $2,052,792, and an increase of foreign importations of $805,707, a total of $2,858,499, or an increase in total receipts over last year of over 29 per cent.

The totals in this report are about $300,000 less than the reports given by the Bureau of Statistics, but as the difference is less than 3 per cent it is believed it will be of sufficient accuracy for practical purposes. The inaccuracies are caused, principally, by errors in manifests and by the omission of merchandise from coasting manifests by the transportation companies. This is being remedied as fast as possible.

The decrease in the imports of Douglas and the great increase in imports of Treadwell in comparison with last year is probably occasioned by giving in last year's report to "Douglas" all merchandise consigned to "Douglas Island." Among shipping men "Douglas Island" indicates "Treadwell," and such consignments were given to "Treadwell" this year.

Fairbanks shows imports $313,732, which is evidently misleading, as a great portion of the imports of St. Michael are eventually sent to Fairbanks. Fairbanks received large shipments of supplies from Dawson. These being foreign goods were entered at Eagle and are credited to Eagle. The amount thus imported at Eagle amounted to $711,316, nine-tenths of which probably reached Fairbanks, although there is no positive way of tracing it from the records here.

It will be noted also that the principal towns in southeast Alaska show a decided increase, and the small places included in "All other places" show a small decrease. This would seem to indicate a more settled state of business and that the towns are becoming depots of supplies for the outlying country.

These reports will be continued from time, to time and in the future they will be more accurate and valuable.

D. H. Jarvis,
Collector of Customs.

Shipments of domestic merchandise from the United States to southeast Alaska.

	Coal.	Lumber.	Machinery.	Provisions.	Liquor.	All other.	Total.
Berners Bay	$30					$188	$218
Blind Point					$11	36	47
Chatam Straits		$30	$2,428	$7,887	200	24,627	35,172
Chilkat	820	1,462	4,431	7,780	220	42,345	57,058
Chilkoot		35	73	683		2,132	2,923
Copper City		124		1,351		426	1,901
Copper Mountain	314	22	20,893	7,877	1,175	6,997	37,278
Coronation Island				39		24	63
Dall Island				264			264
Dolomi	22		2,440	1,344		408	4,214
Douglas	719	2,028	23,369	78,954	33,423	103,132	241,625
Duke Island				207			207
Dundas Bay			6	292		41	339
Eagle River			292	2,183	108	1,451	4,034
Express Southeast Alaska						377	377
Funter Bay	524	238	1,737	2,604		22,108	27,211
Gravina						75	75
Grindall						35	35
Hadley	148	140	70,293	13,861	1,408	10,762	96,612
Haines	2,572	15,937	41,459	47,260	7,930	88,743	203,901
Hattie Camp	215	17	1,581	3,762		1,391	6,966
Hollis	15	474		2,776	75	783	4,123
Hoonah			195	4,053		3,858	8,106

Shipments of domestic merchandise from the United States to southeast Alaska.—Continued.

	Coal.	Lumber.	Machinery.	Provisions.	Liquor.	All other.	Total.
Howkan	.....	$89	$42	$958	.....	$966	$2,055
Hudson Bay	.....	.....	47	1,185	.....	2,461	3,693
Hunter Bay	.....	55	569	350	$14	303	1,291
Juneau	$7,701	4,721	51,155	212,519	37,621	245,260	558,977
Kake	4	76	1,788	2,289	.....	2,384	6,541
Kasaan	.....	63	.....	1,676	.....	846	2,585
Kell Bay	.....	.....	1,889	152	.....	2	2,043
Ketchikan	182	7,823	81,446	136,118	25,308	162,171	413,048
Killisnoo	1,208	2,613	9,043	12,715	100	10,368	36,047
Klawak	978	200	1,729	5,009	27	28,910	36,853
Klinquan	.....	185	29	1,042	.....	560	1,816
Labouchere Bay	2,325	207	6,889	4,039	116	63,518	77,094
Lake Bay	232	154	1,889	1,170	.....	3,384	6,829
Lincoln Rock	.....	75	174	26	.....	466	741
Loring	8,064	2,746	80,499	20,396	79	21,381	133,165
Metlakahtla	.....	320	14,801	7,867	.....	13,166	36,154
Petersburg	15	351	5,015	11,309	1,537	6,896	25,123
Pillar Bay	.....	.....	.....	609	.....	60	669
Pleasant Bay	.....	89	379	4,480	13	1,810	6,771
Point Ellis	.....	375	6,468	3,296	292	24,819	35,250
Porcupine	.....	15	21	1,178	255	155	1,624
Point Astley	.....	230	.....	328	.....	.....	558
Point Dundas (Sax-man)	.....	.....	35	293	.....	420	748
Pybus Bay	50	236	440	1,230	.....	1,254	3,210
Pyramid Harbor	2,730	5,148	9,035	7,815	180	41,665	66,573
Rodman Bay	.....	.....	238	148	.....	35	421
Saganaw Bay	.....	100	564	378	.....	150	1,192
Shakan	219	.....	6,692	3,594	.....	969	11,474
Sheep Creek	150	.....	305	1,910	24	744	3,133
Sitka	1,724	3,052	10,390	57,561	9,277	46,232	128,236
Sitko Bay	.....	6	92	281	.....	82	461
Skagway	1,950	13,059	47,833	239,436	28,245	227,020	557,543
Snettisham	49	.....	1,020	3,215	.....	1,753	6,037
Sulzer	25	125	487	2,075	32	542	3,286
Sumdum	.....	.....	400	.....	.....	73	473
Sunny Point	.....	.....	1,187	2,274	.....	150	3,611
Southeast Alaska light-house station	.....	8,630	15,488	5,968	.....	5,716	35,802
Taku	.....	8	2,112	3,236	.....	2,966	8,322
Taku Harbor	300	88	1,581	3,100	.....	14,279	19,348
Tee Harbor	664	325	.....	1,167	.....	687	2,843
Tenakee	.....	.....	64	5,377	.....	371	5,812
Tonka	326	.....	3,385	4,730	23	4,852	23,316
Treadwell	6,990	4,032	149,613	181,746	512	282,877	625,770
Wrangell	38	1,591	14,635	63,769	15,532	52,774	148,339
Wrangell Narrows	.....	6	94	335	.....	15	450
Windham Bay	.....	81	4,208	1,201	.....	236	5,726
Yes Bay	.....	.....	.....	700	.....	.....	700
Total	41,303	77,381	702,967	1,203,427	163,737	1,585,687	3,774,502

Comparative statement of principal places in southeast Alaska.

	1903.	1904.	Increase.	Decrease.
Douglas	$272,368	$241,625	.....	$30,743
Haines	170,908	203,901	$32,993	.....
Juneau	346,616	558,977	212,361	.....
Ketchikan	360,856	413,048	52,192	.....
Loring	190,669	133,165	.....	57,504
Pyramid Harbor	139,332	66,573	.....	72,759
Skagway	543,741	557,543	13,802	.....
Sitka	107,486	128,236	20,750	.....
Treadwell	239,077	625,770	386,693	.....
Wrangell	86,265	148,339	62,074	.....
All other places	719,301	697,325	.....	21,976
Total	3,176,619	3,774,502	780,865	182,982

Net increase, $597,883.

To southern Alaska from Yakutat to Unalaska and Dutch Harbor.

	Coal.	Lumber.	Machinery.	Provisions.	Liquor.	All other.	Total.
Afognak	.....	.....	$454	$192	$1,328	$335	$2,309
Aurora	.....	.....	230	270	.....	24	524
Alitak	$3,396	$1,782	3,144	6,998	148	20,967	36,435
Apollo	.....	.....	700	45	19	909	1,673
Barnabas	.....	.....	230	270	.....	24	524
Baranoff Station	107	218	187	1,087	.....	1,161	2,760
Belkofsky	.....	.....	.....	98	.....	.....	98
Cape Elizabeth	.....	12	224	450	.....	44	730
Catalla	106	143	4,195	13,646	2,863	8,873	29,826
Chignik	2,223	16,439	17,043	17,071	923	90,674	144,373
Chilkat	.....	.....	.....	226	.....	.....	226
Coal Harbor	.....	1,169	384	1,059	30	419	3,061
Cold Bay	13	541	4,048	3,722	163	2,213	10,700
Cooks Inlet	4,415	5,161	3,363	7,263	108	37,425	57,735
Dora Harbor	.....	153	92	1,105	.....	626	1,976
Dutch Harbor	.....	.....	328	6,420	1,854	4,146	12,748
Ellamar	340	3,615	10,606	16,784	1,571	14,373	47,289
Grace Harbor	.....	.....	208	689	.....	28	925
Homer	.....	.....	44	233	.....	149	426
Hope	7	366	12,355	13,970	2,306	6,504	35,508
Icy Point	.....	141	192	178	.....	74	585
Illiamnia	.....	111	163	1,619	11	1,222	3,126
Innerskin	.....	.....	.....	135	.....	.....	135
Jarvis City	.....	72	223	222	.....	35	552
Kanack	.....	.....	1,753	1,412	.....	876	4,041
Karluk	.....	.....	.....	99	.....	39	138
Kayak	6,331	9,960	40,725	30,447	5,064	99,111	191,638
Kenai	.....	.....	186	2,776	377	3,349	6,688
Knak Kayak	.....	.....	102	1,256	120	724	2,202
Knik	.....	37	1,856	4,920	100	2,223	9,136
Kodiak	800	1,366	3,257	26,322	3,419	24,786	59,950
Kussiloff	.....	.....	114	507	50	.....	671
Latouche	.....	793	4,090	4,586	136	2,399	12,004
Nutchek	.....	.....	13	418	.....	293	724
Odiak	.....	.....	234	600	15	1,327	2,176
Orca	1,800	3,879	3,254	8,304	360	33,468	51,065
Pirate Cove	479	191	132	5,700	.....	4,323	10,825
Sandpoint	103	303	1,705	9,985	3,194	3,007	18,297
Sanak	178	67	140	2,455	.....	2,764	5,604
Seldovia	.....	1,794	1,840	14,725	1,289	4,008	23,656
Seward	211	9,963	133,862	69,776	11,913	55,965	281,690
Sunrise	21	317	1,574	14,570	4,078	3,983	24,543
Tyoonik	.....	93	397	5,124	231	2,623	8,468
Unalaska	.....	462	2,485	18,581	2,271	16,184	39,983
Unga	4,923	.....	2,319	11,295	2,879	5,170	26,586
Uyak	2,408	544	4,270	13,211	561	16,811	37,805
Valdez	7,990	12,167	28,966	152,241	28,517	142,076	371,957
Various places	.....	.....	.....	92,718	.....	.....	92,718
Winchester Station	53	7	44	1,001	.....	793	1,898
Wood Island	.....	.....	.....	117	.....	150	267
Yakataga	.....	219	4,081	13,401	1,420	3,899	23,020
Yakutat	531	2,345	17,095	17,363	429	27,661	65,424
Total	36,435	74,430	312,907	617,662	77,747	648,237	1,767,418

Comparative statement of principal places in southern Alaska.

	1903.	1904.	Increase.	Decrease.
Dutch Harbor	$32,003	$12,748	.....	$19,255
Ellamar	31,640	47,289	$15,649	.....
Kayak	122,623	191,638	69,015	.....
Kodiak	65,553	59,950	.....	5,603
Orca	56,253	51,065	.....	5,188
Sunrise	25,260	24,543	.....	717
Seward	7,741	281,690	273,949	.....
Unalaska	39,123	39,983	860	.....
Unga	41,001	26,586	.....	14,415
Valdez	496,709	371,957	.....	124,752
Yakutat	46,590	65,424	18,834	.....
Yakataga	.....	23,020	23,020	.....
Other places	528,906	571,525	42,619	.....
Total	1,493,402	1,767,418	443,946	169,930

Net increase, $274,016.

To Bering Sea and Artic Ocean, except St. Michael.

	Coal.	Lumber.	Machinery.	Provisions.	Liquor.	All other.	Total.
Bluff City			$102	$999		$9	$1,110
Bristol Bay	$43,767	$126,894	126,520	112,440	$2,237	812,876	1,224,734
Candle City			1,245		10	379	1,634
Cape Prince Wales	449	3,587	4,280	5,999	56	5,610	19,981
Cape York	48	980	14,113	5,026	138	6,403	26,708
Council			6,059	21,177		4,572	31,808
Deering	42		115				157
Dicksen			775	5,644		2,761	9,180
Golovin		2,481	53,129	18,262	111	22,726	96,709
Kenalik		11,233	4,783			2,692	18,708
Koggiung	52	12,039	19,339	16,598		159,965	207,993
Kuskoquim			1,296	2,774		2,118	6,188
Lockanok		2,275					2,275
Lost River		52	970	1,421		1,636	4,079
Nome	20,822	77,075	222,545	800,249	155,222	712,607	1,988,520
Nushagak	4,022	21,958	50,533	36,426	1,688	188,050	302,677
Pauloff		54	20	643		1,287	2,004
Point Barrow	433	1,865	1,131	2,531		1,089	7,049
Point Hope	80	1,844	1,611	2,638	21	1,636	7,830
Solomon	1,672	4,721	27,276	31,068	898	60,833	126,468
St. Lawrence	101	46	606	1,363		1,177	3,293
St. Paul and St. George	4,000	93	616	10,850	429	5,674	21,662
Teller and Clarence	7,092	3,199	8,785	38,439	2,625	35,575	95,715
Tin City	25		816		12	1,082	1,935
Ugashik	2,039	7,423	3,422	4,822	121	27,200	45,027
Unalaklik		58	510	3,109		927	4,604
Various points		1,543		38,394		8,317	48,254
Wainwright		1,840	35	25		80	1,980
White Mountain		7	299	322		275	903
Total	84,644	281,267	550,931	1,161,219	163,568	2,067,556	4,309,185

Comparative statement of principal places.

	1903.	1904.	Increase.	Decrease.
All Bristol Bay places	$1,568,324	$1,780,431	$212,107	
Golovin	135,833	96,709		$39,124
Nome	1,726,242	1,988,520	262,278	
Solomon	89,926	126,468	36,542	
St. Paul and St. George	20,758	21,662	904	
Teller and Clarence	38,854	95,715	56,861	
All other places	61,798	199,680	137,882	
Total	3,641,735	4,309,185	706,574	39,124

Net increase, $667,450.

To St. Michael, Yukon, and tributary valleys.

	Coal.	Lumber.	Machinery.	Provisions.	Liquor.	All other.	Total.
Androfsky				$18,726	$2,294	$1,572	$22,592
Anvik			$148	1,715		818	2,681
Beaumont Landing				208		800	1,008
Bettles			2,750	11,181		3,560	17,491
Chena		$250	32,360	29,055	1,536	10,913	74,114
Circle			2,711	7,394	1,763	9,981	21,849
Eagle		323	3,200	36,917	10,086	9,853	60,379
Fairbanks	$198	1,157	79,910	147,470	35,474	103,382	367,591
Fortymile	15		49	10,560	82	793	11,499
Fort Egbert	32	58	5,930	11,267		20,258	37,545
Fort Gibbon			1,060	8,418		372	9,850
Fort Hamlin						297	297
Fort Yukon			102	2,917	125	1,142	4,286
Graphite						165	165
Kaltag				525			525
Nulato			58			104	162
Osborne Creek			2,538				2,538
Rampart		23	1,963	12,686	4,567	19,250	38,489
St. Michael	6,403	2,756	68,250	235,901	1,104	188,406	502,820
Tanana		198	2,358	11,267	2,993	8,056	24,872
Weare						2,139	2,139
Total	6,648	4,765	203,387	546,207	60,024	381,861	1,202,892

Comparative statement of principal places.

	1903.	1904.	Increase.	Decrease.
Circle	$41,530	$21,849	.....	$19,681
Chena	28,139	74,114	$45,975	.....
Eagle	48,722	60,379	11,657	.....
Fairbanks	53,859	367,591	313,732	.....
Fort Egbert	52,217	37,545	.....	14,672
Fortymile	13,469	11,499	.....	1,970
Rampart	71,305	38,489	.....	32,816
St. Michael	215,371	502,820	287,449	.....
Tanana	30,285	24,872	.....	5,413
All other places	134,552	63,734	.....	70,818
Total	689,449	1,202,892	658,813	145,370

Net increase, $513,443.

RECAPITULATION.

Value of domestic merchandise shipped from the United States.

To—	Coal.	Lumber.	Machinery.	Provisions.	Liquor.	All other.	Total.
Southeast Alaska	$41,303	$77,381	$702,967	$1,203,427	$163,737	$1,585,687	$3,774,502
Southern Alaska	36,435	74,430	312,907	617,662	77,747	648,237	1,767,418
Bering Sea	84,644	281,267	550,931	1,161,219	163,568	2,067,556	4,309,185
St. Michael and Yukon River	6,648	4,765	203,387	546,207	60,024	381,861	1,202,892
Total, 1904	169,030	437,843	1,770,192	3,528,515	465,076	4,683,341	11,053,997
Total, 1903	219,694	304,765	980,195	2,461,492	389,083	4,645,976	9,001,205

Transported in vessels.

Entered	$67,703	$301,568	$1,394,376	$3,186,786	$457,751	$2,953,999	$8,362,183
Under permit	101,327	136,275	375,816	341,729	7,325	1,729,342	2,691,814
Total	169,030	437,843	1,770,192	3,528,515	465,076	4,683,341	11,053,997

Comparative statement of total values.

	1903.	1904.	Increase.
Southeast Alaska	$3,176,619	$3,774,502	$597,883
Southern Alaska	1,493,402	1,767,418	274,016
Bering Sea	3,641,735	4,309,185	667,450
St. Michael and Yukon River	689,449	1,202,892	513,443
Total	9,001,205	11,053,997	2,052,792

Value of merchandise entered for consumption from foreign ports during the calendar year 1904.

	Coal.	Lumber.	Machinery.	Provisions.	Liquor.	All other.	Total.
Ketchikan	$14,392	.....	.....	$488	$707	$15,234	$30,821
Wrangell	1,948	.....	$982	2,388	530	876	6,724
Juneau	151,444	.....	.....	.....	2,783	83	154,310
Skagway	26,780	.....	8,393	2,197	1,938	59,440	98,748
Eagle	198	$5,042	189,124	303,182	11,139	202,631	711,316
Fortymile	57	253	5,344	43,731	1,699	21,667	72,751
St. Michael	401	.....	2,192	5,547	685	7,516	16,341
Nome	89,825	.....	.....	.....	.....	[a] 259,899	349,724
Unalaska	23,382	.....	.....	.....	.....	.....	23,382
Sandpoint	7,020	.....	.....	.....	.....	.....	7,020
Kodiak	3,067	.....	.....	.....	.....	203	3,270
Valdez	8,164	.....	.....	.....	.....	.....	8,164
Sitka	14,215	.....	.....	.....	.....	.....	14,215
Total, 1904	337,662	5,295	206,035	357,533	19,481	567,549	1,496,786
Total, 1903	248,207	10,338	18,605	117,931	10,299	288,930	691,079

[a] Product of whale fisheries. Not included in quarterly statement issued December 31, 1904

The foregoing totals made up as follows:

	Coal.	Lumber.	Machinery.	Provisions.	Liquor.	All other.	Total.
EAGLE.							
Foreign merchandise..	$6	$3,174	$37,747	$78,243	$3,639	$45,202	$168,011
United States merchandise returned ...	192	1,868	151,377	224,939	7,500	157,429	543,305
Total.....	198	5,042	189,124	303,182	11,139	202,631	711,316
FORTYMILE.							
Foreign merchandise..	.....	253	2,171	14,655	553	4,107	21,739
United States merchandise returned ...	57	.....	3,173	29,076	1,146	17,560	51,012
Total.....	57	253	5,344	43,731	1,699	21,667	72,751

Eagle and Fortymile reports for October, November, and December not received.

Comparative statement of values of imports from foreign ports.

	1903.	1904.	Increase.	Decrease.
Ketchikan.....	$8,148	$30,821	$22,673	.....
Wrangell	3,942	6,724	2,782	.....
Juneau.....	135,369	154,310	18,941	.....
Skagway.....	122,544	98,748	.....	$23,796
Eagle.....	177,890	711,316	533,426	.....
Fortymile	65,693	72,751	7,058	.....
St. Michael	40,198	16,341	.....	23,857
Nome.....	113,154	349,724	236,570	.....
Unalaska.....	12,780	23,382	10,602	.....
Sandpoint.....	.....	7,020	7,020	.....
Kodiak.....	203	3,270	3,067	.....
Valdez.....	7,893	8,164	271	.....
Sitka.....	3,265	14,215	10,950	.....
Total.....	691,079	1,496,786	853,360	47,653

Net increase, $805,707.

Value of foreign merchandise entered under bond for exportation to adjacent British territory during 1904.—Skagway, $2,531,029; St. Michael, $86,452; Wrangell, $73,232; total, $2,690,713.

Value of American merchandise in transit from Skagway to American side Lower Yukon River.—1902, $142,694; 1903, $127,150; 1904, $524,473.

Comparative statement of exports from and imports into Alaska for the calendar year 1904.

Shipments of merchandise to the United States:	
Salmon, canned.....	$8,569,698
All other fish products.....	484,116
Furs and fur skins, undressed.....	461,449
Copper ore.....	258,302
All other articles of merchandise.....	812,495
Total shipments to the United States.....	10,586,060
Domestic gold shipped to the United States.....	9,082,581
Domestic exports.....	1,141,569
Domestic gold exported.....	613,781
Total value of exports and shipments of domestic gold and merchandise	21,423,991
Total value of imports, domestic and foreign.....	12,550,783
Excess of exports over imports.....	8,873,208

Receipts by subports.

	Imports.	Tonnage tax.	Fines, etc.	Fees.	All other collections.	Total, 1904.	Total, 1903.
Ketchikan	$4,199	$1,500	$2,850	$1,452	$306	$10,307	$4,210
Wrangell	842	36	260	56	90	1,284	1,909
Juneau	25,313	330	2,650	100	1,818	30,211	7,561
Skagway	8,603	.....	.....	149	725	9,477	6,185
Eagle	59,509	1,125	126	1,008	495	62,263	12,756
Fortymile	4,169	.....	.....	.....	.....	4,169	7,738
St. Michael	315	.....	150	40	100	605	2,518
Nome	9,240	647	200	133	285	10,505	834
Unalaska	1,237	59	.....	23	.....	1,319	120
Sandpoint	1,281	.....	.....	.....	.....	1,281	.....
Kodiak	311	.....	170	.....	.....	481	115
Valdez	607	.....	50	.....	24	681	411
Sitka	2,460	.....	124	9	2,851	5,444	4,179
Total, 1904	118,086	3,697	6,580	2,970	6,694	138,027	.....
Total, 1903	35,600	3,086	2,130	2,508	5,212	.....	48,536

Increase total collections 1904 over 1903, $89,491.

Appendix I.

Custom-House, District of Alaska,
Collector's Office, July 1, 1905.

Sir: I have the honor to submit the following consolidated summary of the transactions of this office for the year ended June 30, 1905, viz:

Vessels entered from foreign ports	376
Vessels cleared for foreign ports	253
Vessels entered from domestic ports	374
Vessels cleared for domestic ports	374
Entries of merchandise for duty	1,814
Entries of merchandise free of duty	847
Entries for export to adjacent British provinces	590
Entries from warehouse for consumption	1
Total number of entries of all kinds	3,252
Entries for consumption liquidated	2,662
Certificates of registry granted	62
Certificates of enrollment granted	17
Licenses for coasting trade granted	58
Licenses to vessels under 20 tons granted	143
Total number of documents to vessels issued	280

Receipts from all sources.

Duties on imports	$116,580.37
Tonnage tax	3,638.91
Fines, penalties, and forfeitures	4,892.60
Head tax	22.00
Miscellaneous customs receipts	3,003.50
Wharfage	2,598.35
Official fees	2,512.42
Total	133,248.15

Expenses of collection

Fees retained by collector or surveyor	$1,500.00
Salaries of collectors, deputies, clerks, inspectors, weighers, storekeepers, etc.	55,207.95
Expenses of weighers and gaugers	2,747.00
Rents	3,932.83
Miscellaneous expenses	6,351.57
Total	69,739.35

PORT OF KETCHIKAN,
Collector's Office, July 1, 1905.

SIR: I have the honor to submit the following summary statement of the transactions of this office for the year ended June 30, 1905, viz:

Vessels entered from foreign ports	204
Vessels cleared for foreign ports	136
Vessels entered from domestic ports	243
Vessels cleared for domestic ports	222
Entries of merchandise for duty	66
Entries of merchandise free of duty	9
Total number of entries of all kinds	75
Entries for consumption liquidated	75
Certificates of registry granted	17
Certificates of enrollment granted	3
Licenses for coasting trade granted	13
Licenses to vessels under 20 tons granted	37
Total number of documents to vessels issued	70

Receipts from all sources.

Duties on imports	$3,880.17
Tonnage tax	1,181.73
Fines, penalties, and forfeitures	50.00
Miscellaneous customs receipts	332.00
Head tax	8.00
Official fees	1,363.02
Total	6,814.92

Expenses of collection.

Salaries of collectors, deputies, clerks, inspectors, weighers, storekeepers, etc	$4,060.97
Expenses of weighers and gaugers	297.00
Rents	300.00
Miscellaneous expenses	253.90
Total	4,911.87

PORT OF SITKA,
Collector's Office, July 1, 1905.

SIR: I have the honor to submit the following summary statement of the transactions of this office for the year ended June 30, 1905, viz:

Vessels entered from domestic ports	4
Vessels cleared for domestic ports	1
Entries of merchandise for duty	5
Total number of entries of all kinds	5
Entries for consumption liquidated	5
Certificates of enrollment granted	1
Licenses for coasting trade granted	1
Licenses to vessels under 20 tons granted	2
Total number of documents to vessels issued	4

Receipts from all sources.

Duties on imports	$224.61
Miscellaneous customs receipts	17.50
Wharfage	2,598.35
Official fees	9.20
Total	2,849.66

Expenses of collection.

Salaries of collectors, deputies, clerks, inspectors, weighers, storekeepers, etc	$1,400.00
Expenses of weighers and gaugers	24.50
Miscellaneous expenses	580.74
Total	2,005.24

PORT OF SKAGWAY,
Collector's Office, July 1, 1905.

SIR: I have the honor to submit the following summary statement of the transactions of this office for the year ended June 30, 1905, viz:

Vessels cleared for foreign ports	7
Entries of merchandise for duty	293
Entries of merchandise free of duty	282
Entries for export to adjacent British provinces	477
Entries from warehouse for consumption	1
Total number of entries of all kinds	1,053
Entries for consumption liquidated	576

Receipts from all sources.

Duties on imports	$9,171.13
Fines, penalties, and forfeitures	65.95
Miscellaneous customs receipts	809.00
Head tax	4.00
Official fees	171.50
Total	10,221.58

Expenses of collection.

Salaries of collectors, deputies, clerks, inspectors, weighers, storekeepers, etc	$10,225.50
Expenses of weighers and gaugers	809.00
Rents	492.00
Miscellaneous expenses	388.97
Total	11,915.47

PORT OF WRANGELL,
Collector's Office, July 1, 1905.

SIR: I have the honor to submit the following summary statement of the transactions of this office for the year ended June 30, 1905, viz:

Vessels entered from foreign ports	14
Vessels cleared for foreign ports	15
Vessels entered from domestic ports	8
Vessels cleared for domestic ports	5
Entries of merchandise for duty	19
Entries of merchandise free of duty	13
Entries for export to adjacent British provinces	108
Total number of entries of all kinds	140
Entries for consumption liquidated	32
Certificates of registry granted	9
Licenses for coasting trade granted	6
Licenses to vessels under 20 tons granted	28
Total number of documents to vessels issued	43

Receipts from all sources

Duties on imports	$715.66
Tonnage tax	26.55
Fines, penalties, and forfeitures	410.00
Miscellaneous customs receipts	90.00
Official fees	51.00
Total	1,293.21

Expenses of collection.

Salaries of collectors, deputies, clerks, inspectors, weighers, storekeepers, etc	$1,868.00
Expenses of weighers and gaugers	90.00
Miscellaneous expenses	7.70
Total	1,965.70

PORT OF ST. MICHAEL,
Collector's Office, July 1, 1905.

SIR: I have the honor to submit the following summary statement of the transactions of this office for the year ended June 30, 1905, viz:

Vessels entered from foreign ports	1
Vessels cleared for foreign ports	17
Vessels entered from domestic ports	4
Vessels cleared for domestic ports	11
Entries of merchandise for duty	18
Entries of merchandise free of duty	13
Entries for export to adjacent British provinces	4
Total number of entries of all kinds	35
Entries for consumption liquidated	31
Certificates of registry granted	9
Certificates of enrollment granted	3
Licenses for coasting trade granted	6
Licenses to vessels under 20 tons granted	2
Total number of documents to vessels issued	20

Receipts from all sources.

Duties on imports	$569.18
Fines, penalties, and forfeitures	150.00
Miscellaneous customs receipts	100.00
Official fees	42.50
Total	861.68

Expenses of collection.

Salaries of collectors, deputies, clerks, inspectors, weighers, storekeepers, etc	$4,195.00
Expenses of weighers and gaugers	100.00
Rents	900.00
Miscellaneous expenses	66.50
Total	5,261.50

PORT OF SAND POINT,
Collector's Office, July 1, 1905.

SIR: I have the honor to submit the following summary statement of the transactions of this office for the year ended June 30, 1905, viz:

Vessels entered from domestic ports	4
Vessels cleared for domestic ports	5
Entries of merchandise for duty	1
Total number of entries of all kinds	1
Entries for consumption liquidated	1
Certificates of enrollment granted	2
Licenses for coasting trade granted	2
Total number of documents to vessels issued	4

Receipts from all sources.

Duties on imports	$538.93

Expenses of collection.

Salaries of collectors, deputies, clerks, inspectors, weighers, storekeepers, etc	$386.66
Miscellaneous expenses	207.50
Total	594.16

NOTE.—Discontinued November 1, 1904.

PORT OF EAGLE,
Collector's Office, July 1, 1905.

SIR: I have the honor to submit the following summary statement of the transactions of this office for the year ended June 30, 1905, viz:

Vessels entered from foreign ports	120
Vessels cleared for foreign ports	46
Entries of merchandise for duty	1,118
Entries of merchandise free of duty	470
Entries for export to adjacent British provinces	1
Total number of entries of all kinds	1,589
Entries for consumption liquidated	1,588
Certificates of registry granted	14
Total number of documents to vessels issued	14

Receipts from all sources.

Duties on imports	$62,259.82
Tonnage tax	1,230.27
Fines, penalties, and forfeitures	173.05
Miscellaneous customs receipts	960.00
Head tax	10.00
Official fees	620.09
Total	65,253.23

Expenses of collection.

Salaries of collectors, deputies, clerks, inspectors, weighers, storekeepers, etc	$7,933.34
Expenses of weighers and gaugers	733.00
Rents	600.00
Miscellaneous expenses	440.12
Total	9,706.46

PORT OF FORTY-MILE,
Collector's Office, July 1, 1905.

SIR: I have the honor to submit the following summary statement of the transactions of this office for the year ended June 30, 1905, viz:

Entries of merchandise for duty	176
Entries of merchandise free of duty	45
Total number of entries of all kinds	221
Entries for consumption liquidated	221

Receipts from all sources.

Duties on imports	$4,634.94
Fines, penalties, and forfeitures	54.60
Total	4,689.54
Amount of refunds and drawbacks paid	39.00
	4,728.54

Expenses of collection.

Salaries of collectors, deputies, clerks, inspectors, weighers, storekeepers, etc	$5,380.00
Rents	480.00
Miscellaneous expenses	935.08
Total	6,795.08

PORT OF UNALASKA,
Collector's Office, July 1, 1905.

SIR: I have the honor to submit the following summary statement of the transactions of this office for the year ended June 30, 1905, viz:

Vessels entered from foreign ports	6
Vessels cleared for foreign ports	6
Vessels entered from domestic ports	15
Vessels cleared for domestic ports	14
Entries of merchandise for duty	8
Entries of merchandise free of duty	3
Total number of entries of all kinds	11
Entries for consumption liquidated	11
Certificates of registry granted	3
Licenses to vessels under 20 tons granted	5
Total number of documents to vessels issued	8

Receipts from all sources.

Duties on imports	$3,395.89
Tonnage tax	120.15
Official fees	34.71
Total	3,550.75

Expenses of collection.

Salaries of collectors, deputies, clerks, inspectors, weighers, storekeepers, etc	$2,071.00
Rents	120.00
Miscellaneous expenses	13.05
Total	2,204.05

PORT OF NOME,
Collector's Office, July 1, 1905.

SIR: I have the honor to submit the following summary statement of the transactions of this office for the year ended June 30, 1905, viz:

Vessels entered from foreign ports	22
Vessels cleared for foreign ports	12
Vessels entered from domestic ports	41
Vessels cleared for domestic ports	38
Entries of merchandise for duty	12
Entries of merchandise free of duty	10
Total number of entries of all kinds	22
Entries for consumption liquidated	22
Certificates of registry granted	1
Certificates of enrollment granted	1
Licenses for coasting trade granted	9
Licenses to vessels under 20 tons granted	19
Total number of documents to vessels issued	30

Receipts from all sources.

Duties on imports	$9,063.36
Tonnage tax	745.59
Fines, penalties, and forfeitures	650.00
Miscellaneous customs receipts	240.50
Official fees	125.20
Total	10,824.65

Expenses of collection.

Salaries of collectors, deputies, clerks, inspectors, weighers, storekeepers, etc	$2,814.99
Expenses of weighers and gaugers	240.00
Miscellaneous expenses	1,429.40
Total	4,484.39

PORT OF KODIAK,
Collector's Office, July 1, 1905.

SIR: I have the honor to submit the following summary statement of the transactions of this office for the year ended June 30, 1905, viz:

Vessels entered from domestic ports	3
Vessels cleared for domestic ports	4
Entries of merchandise for duty	2
Total number of entries of all kinds	2
Entries for consumption liquidated	2
Licenses for coasting trade granted	2
Licenses to vessels under 20 tons granted	2
Total number of documents to vessels issued	4

Receipts from all sources.

Duties on imports	$203.53
Fines, penalties, and forfeitures	50.00
Total	253.53

Expenses of collection.

Salaries of collectors, deputies, clerks, inspectors, weighers, storekeepers, etc	$1,200.00

PORT OF VALDEZ,
Collector's Office, July 1, 1905.

SIR: I have the honor to submit the following summary statement of the transactions of this office for the year ended June 30, 1905, viz:

Vessels entered from foreign ports	2
Vessels entered from domestic ports	9
Vessels cleared for domestic ports	13
Entries of merchandise for duty	9
Total number of entries of all kinds	9
Entries for consumption liquidated	9
Certificates of registry granted	1
Certificates of enrollment granted	1
Licenses for coasting trade granted	3
Licenses to vessels under 20 tons granted	6
Total number of documents to vessels issued	11

Receipts from all sources.

Duties on imports	$665.22
Tonnage tax	72.48
Miscellaneous customs receipts	27.50
Official fees	11.00
Total	776.20

Expenses of collection.

Salaries of collectors, deputies, clerks, inspectors, weighers, storekeepers, etc	$1,400.00
Expenses of weighers and gaugers	27.50
Rents	300.00
Miscellaneous expenses	200.90
Total	1,928.40

PORT OF JUNEAU,
Collector's Office, July 1, 1905.

SIR: I have the honor to submit the following summary statement of the transactions of this office for the year ended June 30, 1905, viz:

Vessels entered from foreign ports	7
Vessels cleared for foreign ports	14
Vessels entered from domestic ports	43

Vessels cleared for domestic ports	61
Entries of merchandise for duty	87
Entries of merchandise free of duty	2
Total number of entries of all kinds	89
Entries for consumption liquidated	89
Certificates of registry granted	8
Certificates of enrollment granted	4
Licenses for coasting trade granted	16
Licenses to vessels under 20 tons granted	42
Total number of documents to vessels issued	70

Receipts from all sources.

Duties on imports	$21,257.93
Tonnage tax	262.14
Fines, penalties, and forfeitures	3,250.00
Miscellaneous customs receipts	427.00
Official fees	84.20
Total	25,281.27

Expenses of collection.

Commissions allowed and paid to collector or surveyor	$1,500.00
Salaries of collectors, deputies, clerks, inspectors, weighers, storekeepers, etc	12,272.49
Expenses of weighers and gaugers	426.00
Rents	740.83
Miscellaneous expenses	1,827.71
Total	16,767.03

Appendix J.

COMMERCE OF ALASKA.

Shipments of domestic merchandise from the United States to Alaska.

Articles.	Twelve months ended June, 1905.	
	Quantities.	Values.
Agricultural implements:		
Mowers and reapers, and parts of		$431
Plows and cultivators, and parts of		2,810
All others, and parts of		1,996
Total		5,237
Aluminum, and manufactures of		171
Animals:		
Cattle, number	1,540	88,357
Hogs, do	616	5,394
Horses, do	764	87,654
Mules, do	70	9,790
Sheep, do	3,089	13,094
All other, including fowls		8,875
Total		213,164
Art works: Painting and statuary		2,180
Bark, and extracts of, for tanning		791
Beeswax, pounds	30	11
Blacking:		
Stove polish		176
All other		656
Bones, hoofs, horns, and horn tips, strips, and waste		150
Books, maps, engravings, etchings, and other printed matter		84,331
Brass, and manufactures of		10,325

Shipments of domestic merchandise from the United States to Alaska—Continued.

Articles.		Twelve months ended June, 1905.	
		Quantities.	Values.
Breadstuffs:			
Barley	bushels	2,375	$1,241
Bread and biscuit	pounds	868,005	49,254
Buckwheat	bushels	.....	.....
Corn	do	1,707	1,322
Corn meal	barrels	2,146	8,683
Oats	bushels	302,353	141,193
Oatmeal	pounds	4,552	136
Rye	bushels	.....	.....
Rye flour	barrels	12	61
Wheat	bushels	5,626	5,081
Wheat flour	barrels	51,847	230,360
Preparations of, for table food		.....	74,646
All other, for animal feed—			
Bran, middlings, and mill feed	tons	754	16,346
All other		.....	3,465
Total		.....	531,788
Bricks:			
Building	M	311	2,773
Fire		.....	2,930
Broom corn		.....	98
Brooms and brushes		.....	11,596
Candles	pounds	481,107	46,225
Cars, carriages, other vehicles, and parts of:			
Automobiles, and parts of		.....	1,200
Cars, passenger and freight, and parts of—			
For steam railways		.....	4,675
For other railways		.....	5,537
Cycles, and parts of		.....	1,987
Wheelbarrows, push carts, and hand trucks		.....	7,696
All other carriages, and parts of		.....	23,042
Total		.....	44,137
Celluloid, and manufactures of		.....	364
Cement	barrels	2,332	5,208
Chemicals, drugs, dyes, and medicines:			
Acids		.....	6,780
Baking powder	pounds	104,535	27,859
Copper, sulphate of	do	.....	.....
Dyes and dyestuffs		.....	13
Medicines, patent or proprietary		.....	43,444
Roots, herbs, and barks, not elsewhere specified		.....	3,795
Washing powder and fluids	pounds	56,792	3,869
All other		.....	80,327
Total		.....	166,087
Cider	gallons	4,025	1,273
Clocks and watches:			
Clocks, and parts of		.....	5,693
Watches, and parts of		.....	953
Coal and coke:			
Coal—			
Anthracite	tons	5	85
Bituminous	do	42,345	187,352
Coke	do	478	4,281
Cocoa, ground or prepared, and chocolate		.....	7,790
Coffee:			
Green or raw	pounds	2,964	408
Roasted or prepared	do	514,577	108,723
Copper, and manufactures of:			
Ingots, bars, plates, and old	do	10,047	2,309
All other manufactures of		.....	4,093
Cork, manufactures of		.....	3,029

Shipments of domestic merchandise from the United States to Alaska—Continued.

Articles.	Twelve months ended June, 1905.	
	Quantities.	Values.
Cotton:		
Manufactures of—		
Cloths—		
Colored ..... yards..	47,810	$4,311
Uncolored ..... do....	3,672	180
Total cloths	51,482	4,491
Wearing apparel	.....	195,013
Waste, cotton mill ..... pounds..	34,035	3,309
Yarn	.....	15,120
All other	.....	152,861
Total manufactures of	.....	370,794
Earthen, stone, and china ware:		
Earthen and stone ware	.....	5,376
Chinaware	.....	22,217
Eggs ..... dozen..	864,825	212,132
Feathers	.....	822
Fertilizers ..... tons..	4	87
Fibers, vegetable, and textile grasses, manufactures of:		
Bags	.....	6,199
Cordage ..... pounds..	395,027	53,937
Twine	.....	28,495
All other	.....	47,077
Total	.....	135,708
Fish:		
Fresh, other than salmon ..... pounds..	.....	.....
Dried, smoked, or cured—		
Cod, haddock, hake, and pollock ..... do....	53,088	3,654
Herring ..... do....	1,540	65
All other ..... do....	875	56
Pickled—		
Mackerel ..... barrels..	192	3,102
All other ..... do....	12	150
Salmon—		
Canned ..... pounds..	36,270	4,136
All other, fresh and cured	.....	4,944
Canned fish, other than salmon and shellfish	.....	8,511
Caviare	.....	328
Shellfish—		
Oysters	.....	25,707
All other	.....	11,290
All other fish and fish products	.....	1,967
Total	.....	63,910
Fruits and nuts:		
Fruits—		
Apples, dried ..... pounds..	119,960	8,784
Apples, green or ripe ..... barrels..	6,548	30,414
Apricots, dried ..... pounds..	59,038	5,588
Oranges	.....	26,907
Prunes ..... pounds..	225,769	8,628
Raisins ..... do....	73,569	4,733
All other, green, ripe, or dried	.....	76,325
Fruits, preserved—		
Canned	.....	106,647
All other	.....	2,905
Nuts	.....	11,377
Total	.....	282,308
Furniture of metal	.....	3,592
Furs and fur skins	.....	13,265
Glass and glassware:		
Window glass	.....	15,300
All other	.....	32,234
Glucose or grape sugar ..... pounds..	3,614	111
Glue ..... do....	84	20
Grease, grease scraps, and all soap stock	.....	1,126
Gunpowder and other explosives:		
Gunpowder ..... pounds..	2,847,950	449,144
All other explosives	.....	116,966
Total	.....	566,110

Shipments of domestic merchandise from the United States to Alaska—Continued.

Articles.		Twelve months ended June, 1905.	
		Quantities.	Values.
Hair and manufactures of		.....	$176
Hay	tons..	6,980	124,897
Hides and skins, other than furs	pounds..	.....	.....
Honey		.....	5,045
Hops	pounds..	5,749	1,575
India rubber, manufactures of:			
Belting, hose, and packing		.....	44,732
Boots and shoes	pairs..	55,011	166,643
All other		.....	22,846
Total		.....	234,221
India rubber, scrap and old		.....	.....
Ink:			
Printers'		.....	347
All other		.....	1,147
Total		.....	1,494
Instruments and apparatus for scientific purposes:			
Electrical appliances, including telegraph and telephone instruments		.....	44,092
All other		.....	36,775
Iron and steel, and manufactures of:			
Pig iron	tons..	195	5,399
Bar iron	pounds..	882,234	22,706
Bars or rods of steel—			
Wire rods	do....	204,509	7,632
All other	do....	139,782	6,947
Hoop, band, and scroll	do....	.....	.....
Rails for railways—			
Iron	tons..	32	1,021
Steel	do....	2,961	109,197
Sheets and plates—			
Iron	pounds..	499,383	19,183
Steel	do....	157,567	5,914
Tin plates, terneplates, and taggers tin	do....	13,000,320	547,983
Structural iron and steel	tons..	97	5,847
Wire	pounds..	35,195	1,083
Builders' hardware, saws, and tools—			
Locks, hinges, and other builders' hardware		.....	53,824
Saws		.....	8,763
Tools, not elsewhere specified		.....	66,708
Car wheels	number..	364	2,062
Castings, not elsewhere specified		.....	24,033
Cutlery—			
Table		.....	2,123
All other		.....	2,980
Firearms		.....	28,905
Machinery, machines, and parts of—			
Cash registers	number..	38	4,870
Electrical machinery		.....	4,633
Laundry machinery		.....	898
Metal-working machinery		.....	124,898
Printing presses, and parts of		.....	3,096
Pumps and pumping machinery		.....	23,025
Sewing machines, and parts of		.....	5,900
Shoe machinery		.....	.....
Steam engines, and parts of—			
Fire	number..	1	330
Locomotive	do....	3	9,000
Stationary	do....	57	44,495
Boilers, and parts of engines		.....	54,923
Typewriting machines, and parts of		.....	11,282
Wood-working machinery		.....	1,998
All other		.....	394,625
Nails and spikes—			
Cut	pounds..	8,050	244
Wire	do....	1,194,514	34,629
All other, including tacks	do....	.....	.....
Pipes and fittings		.....	112,548
Safes	number..	63	7,903
Scales and balances		.....	4,483
Stoves, ranges, and parts of		.....	65,220
All other manufactures of		.....	228,485
Total		.....	2,059,795

Shipments of domestic merchandise from the United States to Alaska—Continued.

Articles.		Twelve months ended June, 1905.	
		Quantities.	Values.
Jewelry, and manufactures of gold and silver:			
Jewelry		.....	$41,001
All other manufactures of gold and silver		.....	90
Lamps, chandeliers, and all other devices for illuminating purposes		.....	12,330
Lead, and manufactures of:			
Pigs, bars, and old	pounds..	587,310	26,185
Type	do....	2,646	1,067
All other manufactures of		.....	14,063
Total		.....	41,315
Leather and manufactures of:			
Leather—			
Sole leather	pounds..	5,252	1,985
Upper leather—			
Kid, glazed		.....	.....
Splits, buff, grain, and all other upper		.....	9
All other leather		.....	2,396
Total leather		.....	4,390
Manufactures of—			
Boots and shoes	pairs..	77,104	174,222
Harness and saddles		.....	21,044
All other		.....	21,623
Total manufactures of		.....	216,889
Total leather, and manufactures of		.....	221,279
Lime	barrels..	1,073	1,244
Malt	bushels..	9,603	7,244
Marble and stone, and manufactures of:			
Unmanufactured		.....	.....
Roofing slate		.....	200
All other		.....	10,606
Total		.....	10,806
Matches		.....	5,733
Musical instruments, and parts of:			
Organs	number..	13	1,037
Pianofortes	do....	48	13,922
Pianolas, and other piano players	do....	.....	.....
All other, and parts of		.....	8,366
Total		.....	23,325
Naval stores:			
Rosin	barrels..	.....	.....
Tar	do....	249	1,431
Turpentine and pitch	do....	74	290
Turpentine, spirits of	gallons..	12,684	7,317
Total		.....	9,038
Nursery stock		.....	264
Oil cake and oil-cake meal: Corn	pounds..	14,840	225
Oilcloths:			
For floors		.....	8,354
All other		.....	17,681
Oils:			
Animal—			
Fish	gallons..	100	43
Lard	do....	1,258	986
Whale	do....	.....	.....
All other	do....	.....	.....
Total animal	do....	1,358	1,029

Shipments of domestic merchandise from the United States to Alaska—Continued.

Articles.	Twelve months ended June, 1905.	
	Quantities.	Values.
Oils—Continued.		
Mineral—		
Crude, including all natural oils, without regard to gravity..gallons..	2,788,356	$92,807
Refined or manufactured—		
Naphthas, including all lighter products of distillation.....do....	605,819	99,091
Illuminating oil.....do....	462,135	92,591
Lubricating and heavy paraffin oil.....do....	55,639	22,639
Residuum, including tar, and all other, from which the light bodies have been distilled.....barrels..	14	83
Total mineral.....	.....	307,211
Vegetable—		
Cotton seed.....gallons..	60	24
Linseed.....do....	11,554	6,770
Volatile or essential—all other.....	.....	1,886
All other vegetable.....	.....	3,687
Total vegetable.....	.....	12,367
Paints, pigments, and colors:		
Carbon black, gas black, and lampblack.....	.....	10
All other.....	.....	43,994
Paper, and manufactures of:		
Paper hangings.....	.....	9,874
Playing cards.....	.....	6,801
Printing paper.....pounds..	12,814	466
Writing paper and envelopes.....	.....	33,139
All other.....	.....	68,236
Total.....	.....	118,516
Pencils, lead and slate.....	.....	287
Perfumery and cosmetics.....	.....	3,601
Plated ware.....	.....	6,203
Provisions, comprising meat and dairy products:		
Meat products—		
Beef products—		
Beef, canned.....pounds..	508,404	46,978
Beef, fresh.....do....	2,585,218	202,413
Beef, salted or pickled.....do....	326,347	22,032
Beef, other cured.....do....	20,838	1,563
Tallow.....do....	55,615	2,883
Hog products—		
Bacon.....do....	1,054,346	147,907
Hams.....do....	1,145,411	152,418
Pork, canned.....do....	.....	.....
Pork, fresh.....do....	332,636	31,356
Pork, salted or pickled.....do....	155,651	14,320
Lard.....do....	593,953	54,361
Lard compounds and substitutes for (cottolene, lardine, etc.).....pounds..	59,018	4,272
Mutton.....do....	415,703	31,260
Oleomargarine, imitation butter.....do....	2,392	349
Poultry and game.....	.....	33,451
Sausage and sausage meats.....pounds..	174,064	17,525
Sausage casings.....	.....	35
All other meat products—		
Canned.....	.....	38,993
All other.....	.....	21,343
Dairy products—		
Butter.....pounds..	1,122,996	283,550
Cheese.....do....	216,394	30,961
Milk.....	.....	242,255
Total.....	.....	1,380,225
Quicksilver.....pounds..	18,773	9,655
Rice.....do....	749,612	28,551
Salt.....do....	11,886,873	36,478
Seeds:		
Clover.....do....	.....	.....
Timothy.....do....	1,100	57
Other grass seeds.....	.....	72
All other.....	.....	981
Total.....	.....	1,110

Shipments of domestic merchandise from the United States to Alaska—Continued.

Articles.		Twelve months ended June, 1905.	
		Quantities.	Values.
Shells			
Silk, manufactures of			$16,480
Soap:			
Toilet or fancy			5,530
All other	pounds	419,067	22,198
Spirits, wines, and malt liquors:			
Malt liquors—			
In bottles	dozen quarts	66,100	99,764
In other coverings	gallons	175,771	52,523
Total malt liquors			152,287
Spirits, distilled—			
Alcohol—			
Wood	proof gallons	734	737
All other (including pure, neutral, or cologne spirits)	do	1,540	3,658
Brandy	do	6,693	18,963
Rum	do	1,708	4,903
Whisky—			
Bourbon	do	34,209	105,035
Rye	do	49,241	131,821
All other	do	22,192	61,965
Total spirits, distilled	do	116,317	327,082
Wines—			
In bottles	dozen quarts	1,573	7,932
In other coverings	gallons	25,806	18,596
Total wines			26,528
Total spirits, wines, and malt liquors			505,897
Starch	pounds	33,579	2,186
Straw and palm leaf, manufactures of			448
Sugar, molasses, and confectionery:			
Molasses	gallons	3,207	1,558
Sirup	do	35,492	29,448
Sugar, brown	pounds	32,233	1,796
Sugar, refined	do	3,864,087	229,938
Total sugar and molasses			262,740
Candy and confectionery			39,937
Tin, manufactures of			181,428
Tobacco, and manufactures of:			
Unmanufactured—Leaf	pounds	10,682	3,137
Manufactures of—			
Cigars	M	5,412	327,792
Cigarettes	M	1,090	6,767
Plug	pounds	156,606	75,029
All other			88,632
Total manufactures of			498,220
Toys			5,246
Trunks, valises, and traveling bags			5,353
Varnish	gallons	1,651	2,338
Vegetables:			
Beans and pease	bushels	12,568	23,714
Onions	do	12,377	19,585
Potatoes	do	155,747	129,761
Vegetables, canned			173,046
All other, including pickles and sauces			105,827
Total			451,933
Vinegar	gallons	12,674	3,136
Wood, and manufactures of:			
Timber, and unmanufactured wood—			
Sawed	M feet	511	7,094
Logs, and other			440

Shipments of domestic merchandise from the United States to Alaska—Continued.

Articles.	Twelve months ended June, 1905.	
	Quantities.	Value.
Wood, and manufactures of—Continued.		
Lumber—		
Boards, deals, and planks.....M feet..	9,536	$132,423
Joists and scantling.....do....	50	925
Shingles.....M..	5,488	8,904
Shooks—Box.....	.....	119,219
Staves.....number..	30,000	500
Heading.....	.....	290
All other.....	.....	24,487
Total unmanufactured.....	.....	294,282
Manufactures of—		
Doors, sash, and blinds.....	.....	27,037
Furniture, not elsewhere specified.....	.....	85,402
Hogsheads and barrels, empty.....	.....	8,852
Trimmings, moldings, and other house finishings.....	.....	5,393
Wooden ware.....	.....	4,112
Wood pulp.....	.....	.....
All other.....	.....	84,039
Total manufactures of.....	.....	214,835
Total wood, and manufactures of.....	.....	509,117
Wool, and manufactures of:		
Wool, raw.....pounds..	.....	.....
Manufactures of—		
Carpets.....yards..	18,173	13,864
Dress goods.....do....	3,101	1,906
Flannels and blankets.....	.....	20,035
Wearing apparel.....	.....	504,744
All other manufactures of.....	.....	57,878
Total manufactures of.....	.....	598,427
Zinc, and manufactures of:		
Pigs, bars, plates, and sheets.....pounds..	20,976	1,085
Manufactures of.....	.....	2,446
All other articles.....	.....	73,592
Total value of shipments of domestic merchandise.....	.....	11,227,619
Carried in American steam vessels.....	.....	9,679,800
Carried in American sailing vessels.....	.....	1,547,819

CUSTOMS DISTRICTS FROM WHICH SHIPPED.

Los Angeles, Cal.....	.....	$1,109
Oregon, Oreg.....	.....	94,419
Puget Sound, Wash.....	.....	9,210,397
San Francisco, Cal.....	.....	1,871,318
Willamette, Oreg.....	.....	50,376

Shipments of foreign merchandise from the United States to Alaska.

Articles.	Twelve months ended June, 1905.	
	Quantities.	Values.
FREE.		
Coffee.....pounds..	13,739	$1,912
Tea.....do....	136,137	35,916
Tin in bars, blocks, pigs, or grain or granulated.....do....	458,618	138,160
All other free articles.....	.....	2,784
Total free articles.....	.....	178,772
DUTIABLE.		
Cement.....pounds..	797,780	5,598
Chemicals, drugs, and dyes.....	.....	325
Coal: Bituminous.....tons..	5,550	29,673
Earthern, stone, and china ware.....	.....	771
Fibers, vegetable, and textile grasses, manufactures of.....	.....	1,127
Fish, cured or preserved.....	.....	343
Fruits and nuts.....	.....	120
Iron and steel, and manufactures of:		
Pig iron.....tons..	41	950
Manufactures of.....	.....	1
Oils: Vegetable—Olive, other than for manufacturing or mechanical purposes.....gallons..	235	216
Provisions: Dairy products—Cheese.....pounds..	779	196
Rice.....do....	167,712	8,619
Spirits, wines, and malt liquors:		
Malt liquors—		
In bottles or jugs.....gallons..	1,404	1,437
In other coverings.....do....	421	511
Spirits, distilled—		
Brandy.....proof gallons..	516	3,033
All other.....do....	3,404	12,989
Wines—		
Champagne, and other sparkling.....dozen quarts..	364	9,758
Still wines—		
In casks.....gallons..	191	501
In other coverings.....dozen quarts..	184	2,903
Total.....	.....	31,132
Tobacco, manufactures of: Cigars, cigarettes, and cheroots.....pounds..	350	1,834
Vegetables:		
Onions.....bushels..	1,073	2,884
All other—		
In their natural state.....	.....	9
Prepared or preserved.....	.....	3,364
All other dutiable articles.....	.....	10,702
Total dutiable articles.....	.....	97,864
Total value of shipments of foreign merchandise.....	.....	276,636
Carried in American steam vessels.....	.....	142,995
Carried in American sailing vessels.....	.....	133,641

CUSTOMS DISTRICTS FROM WHICH SHIPPED.

Bangor, Me.....	.....	$9
Oregon, Oreg.....	.....	14,938
San Francisco, Cal.....	.....	124,250
Puget Sound, Wash.....	.....	137,439
Willamette, Oreg.....	.....	.....

Shipments of domestic merchandise from Alaska to the United States.

	Twelve months ended June, 1905.	
	Quantities.	Values.
Fish:		
Fresh, other than salmon ..... pounds	7,094,608	$196,601
Dried, smoked, or cured ..... do	5,803,412	242,189
Pickled ..... barrels	3,439	26,844
Salmon—		
Canned ..... pounds	92,569,204	8,381,466
All other, fresh or cured	.....	150,831
Canned fish, other than salmon and shellfish	.....	12,158
Total	.....	9,010,089
Copper, furs, fertilizers, etc.:		
Copper ore ..... tons	21,158	440,488
Fertilizers ..... do	371	10,542
Furs and fur skins	.....	494,764
Marble and stone and manufactures of	.....	4,252
Oils—fish ..... gallons	155,470	42,061
Total value of shipments of domestic merchandise	.....	10,698,694
Carried in American steam vessels	.....	5,757,228
Carried in American sailing vessels	.....	4,941,466

Shipments of foreign merchandise from Alaska to the United States.

	Twelve months ended June, 1905.	
	Quantities.	Values.
Total value of shipments of foreign merchandise	.....	$102,752
Carried in American steam vessels	.....	102,752

Shipments of gold and silver from and to Alaska, twelve months ended June, 1905.

Classification.	From United States to Alaska.	From Alaska to United States.
DOMESTIC.		
Gold:		
Ore and base bullion	$505	$2,805,528
Bullion, refined	.....	6,221,057
Coin	415,825	32,438
Silver:		
Ore and base bullion	.....	1,288
Bullion, refined	.....	68
Coin	21,211	6,946
Total domestic	437,541	9,067,325
FOREIGN.		
Gold:		
Ore and base bullion	.....	709,171
Bullion, refined	.....	10,024,664
Total foreign	.....	10,733,835
Total gold and silver	437,541	19,801,160
Carried in American steam vessels	437,163	19,500,585
Carried in American sailing vessels	378	300,575

TONNAGE MOVEMENT IN TRADE WITH ALASKA.

Number and tonnage of vessels cleared from the United States to Alaska.

Vessels and customs districts.	Twelve months ended June, 1905.	
	Number.	Tons.
American:		
Sailing	111	81,207
Steam	350	304,543
Total	461	385,750
From Oregon, Oregon	8	7,879
From Puget Sound, Washington	374	307,834
From San Francisco, Cal	78	68,472
From Willamette, Oreg	1	1,565

Number and tonnage of vessels cleared from Alaska to the United States.

Vessels.	Twelve months ended June, 1905.	
	Number.	Tons.
American:		
Sailing	46	19,591
Steam	344	313,950
Total	390	333,541

Imports into and exports from Alaska in its commerce with foreign countries, twelve months ended June, 1905.

Countries.	Imports.	Domestic exports.
United Kingdom	$58	$500
Quebec, Ontario, Manitoba, etc	1,034,401	1,001,440
British Columbia	327,997	25,638
Japan	.....	36,368
Russia, Asiatic	88,454	9,080
British Australasia	.....	.....
Total	1,450,910	1,073,026

Shipments to the United States from noncontiguous territories.

DOMESTIC MERCHANDISE.

Noncontiguous territories.	Twelve months ended June, 1905.
Alaska	$10,698,694
Hawaii	36,069,109
Porto Rico	15,527,265
Philippine Islands	12,657,904
Tutuila	[a] 40,115
Total	74,993,087

[a] Returns for June not received.

Shipments to the United States from noncontiguous territories—Continued.

FOREIGN MERCHANDISE.

Noncontiguous territories.	Twelve months ended June, 1905.
Alaska	$102,752
Hawaii	42,946
Porto Rico	105,880
Total	251,578

GOLD AND SILVER.

Alaska:	
Domestic	$9,067,325
Foreign	10,733,835
Hawaii, domestic	157,172
Porto Rico, foreign	2,009
Total	19,960,341

TOTAL SHIPMENTS.

Domestic merchandise	$74,993,087
Foreign merchandise	251,578
Total value of domestic and foreign merchandise	75,244,665
Total gold and silver	19,960,341
Total value of domestic and foreign merchandise, and gold and silver	95,205,006

Shipments from the United States to noncontiguous territories.

DOMESTIC MERCHANDISE.

Noncontiguous territories.	Twelve months ended June, 1905.
Alaska	$11,227,619
Hawaii	11,643,519
Porto Rico	13,387,457
Philippine Islands	6,198,384
Guam	463
Midway Islands	16,821
Tutuila	69,670
Total	42,543,933

FOREIGN MERCHANDISE.

Alaska	$276,636
Hawaii	109,661
Porto Rico	586,613
Philippine Islands	2,236
Guam	.....
Midway Islands	2
Tutuila	145
Total	975,293

GOLD AND SILVER.

Alaska, domestic	$437,541
Hawaii, domestic	103,000
Tutuila	18,000
Total	558,541

Shipments from the United States to noncontiguous territories—Continued.

TOTAL SHIPMENTS.

Noncontiguous territories.	Twelve months ended June, 1905.
Domestic merchandise	$42,543,933
Foreign merchandise	975,293
Total value of domestic and foreign merchandise	43,519,226
Total gold and silver	558,541
Total value of domestic and foreign merchandise, and gold and silver	44,077,767

Appendix K.

REPORT OF THE GRAND JURY, SECOND DIVISION, DISTRICT OF ALASKA, ON CONDITIONS IN THE DISTRICT.

We, the members of the grand jury, of the second division of the district of Alaska, duly drawn, impaneled, and sworn to inquire into the commission of crimes within the jurisdiction of this court, the condition of the Federal and municipal offices, and officers, and the conditions affecting the general welfare of this division, beg leave to submit this, our final report, April, 1905, term:

During the session just closed we have passed upon fourteen cases, of which twelve we returned "true bills" and two "not true bills."

Upon concluding our investigations of the criminal cases submitted to us for consideration, we investigated the condition and management of the various offices in this district.

UNITED STATES CLERK OF THE COURT.

In our inspection of the clerk's office we were shown the amount of business and the details of the office were fully explained by Mr Borchesenius. The books show a large amount of business transacted, and everything is in a satisfactory condition.

The quarters of said office are entirely too small and should be enlarged and some means taken to protect the records from fire, as there is absolutely no fire protection at the present time.

Herewith is attached a full statement of the business done from May 1, 1904, to April 30, 1905.

UNITED STATES ATTORNEY'S OFFICE.

We have investigated the office of the district attorney and find the records of said office kept in first-class condition and up to date.

We desire to express our appreciation of the ready assistance rendered the grand jury by United States District Attorney Hoyt and assistants; the length of the session of the grand jury has been greatly shortened by the fact that they have had the witnesses on hand and all matters of the office in such shape that they could give their prompt attention to all matters coming before the grand jury, and we especially commend their vigorous, fearless, and thorough investigation and prosecution of criminal offenses, and we feel assured that the interests of such good government will be carefully guarded by them.

We urgently recommend an increase in the salaries of the district attorney and his assistants.

UNITED STATES MARSHAL'S OFFICE.

We have investigated the office of the United States marshal and find that the business of that office is being well and competently conducted by United States Marshal Thomas C. Powell. The books showing the business of the district are kept in a very methodical and businesslike manner.

We call the Attorney-General's attention to the exorbitant fees charged in the marshal's office for the service of process, which frequently work an injustice and hardship upon litigants.

UNITED STATES JAIL.

The grand jury is impressed with the fact that it is important and absolutely necessary that a better jail be secured than that which is now used by the Government.

There are many reasons why the present jail is unfit for the purposes required; it is inadequate in that there are no quarters suitable for insane persons, some of whom each year have to be cared for by the marshal until the time arrives when they can be conveyed to the outside, to a sanitarium, at the opening of navigation; neither is there any separate place for the custody of women. The jail is insanitary for a variety of reasons.

In the first place, the constant thawing underneath the jail makes it necessary to pump out from underneath quantities of unwholesome matter which drains more and more from surrounding premises as the level of the jail continues to be depressed; this matter has to be placed somewhere and it is impossible to escape unpleasant odors, and the jail is a nuisance and menace to the whole surrounding neighborhood; an example of this condition was experienced during the soft weather of the past winter.

As a result of taking away the stuff which accumulates underneath the jail, the level of the building has been constantly lowering until it is now some 2 feet below the level of the street. This condition is becoming worse and worse all the time. It is absolutely insanitary by reason of the fact that there are no suitable means of proper ventilation nor for properly heating the premises.

In cold weather the upper floor cells must necessarily be kept unduly warm in order to obtain a comfortable degree of heat for the lower cells.

The primary requisite for a jail should be its safety. This requirement is all the more necessary in a place where, by the nature of things, it becomes frequently necessary to keep desperate people for seven or eight months at a time, until a term of court can be held and those convicted transferred to the penitentiary. For this reason Nome should have as safe a jail as it is possible to get.

The premises which are now occupied as a jail are unsafe for a variety of reasons. The cells themselves are constructed of wood instead of metal, and the floors and side walls are far too weak to prevent an outbreak if an intelligent effort were made in that direction; they are now arranged in such a manner that they can not be watched and guarded with a reasonable number of guards. The cells have been further weakened by reason of the sagging of the building in the middle from the thawing which is going on underneath. The floors have become weak from decay, and in all respects the jail must be pronounced unsafe.

For all these reasons we respectfully recommend that a jail be built, to be owned, instead of rented, by the Government. It should be underlaid with a heavy foundation of gravel, laid over the tundra, so as to prevent thawing. It should be situated at a place where the natural drainage conditions are as good as possible and near enough to the beach so that drains could be constructed like the large drain constructed last fall by Mr. Garfield, the collector of customs, in front of the Barracks square buildings, the success of which is obvious to anybody who passes those premises. The building should be arranged upon a plan so that one or two guards could at all times watch all of the cell doors; these cells should be constructed entirely of steel; the building should be heated and ventilated by the best modern appliances.

To repeat once more the urgency and necessity for a new jail at this place at once, for the benefit of Congress or whomsoever it may concern, it is in our opinion only necessary to call attention to the fact that at the present time the seepage water gathering under the building is flooding the floor of the room where the prisoners are confined, necessitating constant pumping by hand and, on occasion, by gas engine, to keep the place in a habitable condition.

In this connection we respectfully recommend that a suitable court-house of a permanent character be constructed by the Government; the present court-house is a confessedly temporary affair, which was built at a time when Nome was supposed to be a mere temporary camp. It is built entirely of lumber and with weak side walls and partitions, so that it is constantly out of shape. There are no safe quarters for the care and custody of public documents. The building and everything in it would become a total loss if a fire should get a few minutes start at any time of the year. In addition to the Government records contained in the building, there are many valuable law books belonging to the Government and officials of the Government.

Both from the standpoint of economy and convenience, the situation calls for immediate construction of a court-house, fitted and adapted to the administration of the court business at this place, which is growing to be of more and more consequence all the time.

The mineral developments which have taken place in the Seward Peninsula during the past year have fixed beyond any possibility of doubt the permanency of Nome as a place of residence and business. The Government land, owned in the middle of the town, and called "Barracks square," would furnish the best possible location for the building of both a court-house and jail, and their locations at that point would best serve the public con-

venience and at the same time afford the safest, most sanitary, and adequate solution of the problem presented.

We therefore recommend and earnestly urge that a united effort be made by all of the officers of the Government to bring about such legislation and departmental rules as may be neeessary in the premises.

UNITED STATES COMMISSIONER'S OFFICE.

We have investigated the offiee of the United States eommissioner and reeorder and examined earefully into the system of indexing and reeording in vogue and find that the books are being kept in a eareful and thorough manner.

From our investigation we have the following recommendations to make:

We find that the number of employees and their salary is governed by the income of the offiee, whieh is derived entirely from fees. This we believe to be detrimental to the best interests of the publie, as the volume of business transaeted in the offiee varies largely during different quarters of the year.

We believe that in order to give the public the best possible service it is necessary that competent and experieneed elerks be employed, and in order to insure such a serviee we recommend that the salaries of this offiee be fixed by the Department, as they are in the office of the elerk of the eourt and the United States marshal, and would strongly recommend that the offiee be ehanged to a salaried one instead of a fee office as at present.

The elerical work performed in the recorder's offiee is mueh the same as that done by the employees of the elerk's offiee, while the salaries paid are mueh smaller. We believe that the same salaries should be paid in this offiee as are paid in other Government offiees here.

We would reeommend to the publie in general that in making out location notices they write plainly and tie the elaim to some natural objeet or permanent monument; this will insure a better record and be the means of avoiding mueh litigation.

We recommend that more spacious quarters be seeured, as we believe that the elerks employed in transeribing instruments should have a room separate and apart from the general offiee, the present quarters being too small to permit of such being done. The commissioner's eourt we eonsider is wholly inadequate to the needs of this precinct, and we find that the same is poorly lighted and ventilated.

MUNICIPAL AFFAIRS.

We have made a thorough and eomplete examination of all offices connected with the munieipality of Nome and find the same in good order. They are run intelligently and in the best interests of the people and good government of the eity.

PUBLIC SCHOOLS.

We have made an examination of the public schools of Nome and find the system of teaeh-ing and diseipline in our schools to be of an excellent character. We recommend that a hot water heating plant be installed in the high sehool building, to replace the present hot blast stoves. We wish to call the attention of the school board to the absolute necessity of a fire escape in the Seward school building.

ESKIMOS.

We recommend that the United States Government take immediate steps for the relief of the Eskimos and to that end suggest the following:

1. A relief fund for the relief of the sick and indigent natives, to purchase medicines and the necessaries of life.
2. Government hospital for natives is an absolute necessity from the standpoint of charity as well as the consideration for the health of the white population.
3. Some measures should be seeured to prohibit native families from living in Nome, and the Government should build small, eomfortable eabins at the larger villages and sueh plaees as the Quartz Creek colony and offer each native family a little home as an inducement to move away from this eamp and other undesirable loealities, where they can not obtain liquors and become demoralized.
4. An Alaskan law which absolutely prohibits individuals from taking Esquimaux to the States for any purpose whatsoever, excepting in the ease of taking such native boys and girls out as may be trained for educational or missionary work among their own people.
5. Making the giving or selling of liquor to natives a felony.
6. Vigorous prosecution of unlawful cohabitation with native women.
7. Requesting the business men of Nome to not give the natives any articles of food or clothing or in any way encourage them to become beggars and vagrants.
8. Introduction of industrial training in all the Esquimaux schools, even if it be only in a very moderate degree.

We would urgently recommend to the Attorney-General that the salaries of all Federal officers and Government employees in the district of Alaska be materially increased, in view of the expense of living and in accordance with the salaries paid in other lines of business.

It is especially desirable that a grand-jury room be prepared and fitted in such a manner as to provide all possible secrecy in the transaction of the business coming before the grand jury.

We would suggest that the petit jurors receive pay continuously from the time they are first required to appear until discharged, and not for those days only upon which they are required to serve.

We recommend to the Attorney-General that some means be adopted by which a certain amount of money be deposited in Nome for the payment of all Federal salaries.

The great difficulty of traveling at this season of the year has made it impossible to extend our investigation to matters and things transpiring in places remote from Nome without incurring great expense and endangering the lives of persons who might be required to attend before us. We were, therefore, obliged to allow some matters of minor importance to await the action of a future grand jury, when the attendance of witnesses can be had more easily.

AMENDMENTS TO THE MINING LAW.

We suggest that the provisions of the mining laws referring to annual labor to be performed for the purpose of holding mining claims, especially placer claims, do not have a tendency to promote or develop the mineral wealth of the country, and in the main have a pernicious tendency, owing to the fact that the burden imposed by the law is too great, and the tendency to evade its provisions lead to perjury in a great many instances. We suggest that in place of this requirement there should be collected from each and every location, or fraction of a location, of 20 acres or less, a sum of money not less than $10 nor more than $15 per annum; and on association claims the same sum for each locator, as a license fee, and that the failure to pay this fee on or before July 1 of each year, shall work a forfeiture of the claim, without any other proof of such forfeiture, and that this fee be paid into a treasury of the mining district, or commissioner's precinct in which the claim is situated, and be expended for the benefit of the district.

We further suggest that the law concerning the location of mining claims in the precinct should be so framed as to require a survey of the same before record by an official surveyor, and that after the first survey of any claim that it be subject to location or relocation thereafter only by reference to the original survey.

In view of the fact that almost the whole of the explored part of Alaska has heretofore in some manner, at least, been located and claimed by prospectors, and that in making their location they have been in a very serious manner handicapped on account of the lack of timber or stack material and other means for the marking of boundaries of their claims, so that a condition of great confusion exists under existing laws, and can not be straightened out except by litigation and court proceedings, we recommend that a tribunal be created having jurisdiction and authority to settle and adjudicate priorities of location and conflict of boundaries, and that all persons claiming such lands be required to appear before the same and submit their controversies, or in default thereof that the ground claimed revert to the public domain. This last suggestion is made on account of the fact that large portions of the richest part of this country have been located in such a loose and indefinite way that to attempt to exploit it or develop its value almost always entails litigation, or the threat of it, and thus the development of the country is seriously retarded.

We believe that in connection with the tribunal referred to a system of surveys of existing locations can be made, so as to fix the exact location of every claim, so that when the proceeding is finally concluded the whole Territory will, for all practical purposes, be surveyed land and further confusion either wholly prevented or greatly minimized.

We further recommend that for all classes of mining claims situated in Alaska, regardless of other recommendations, the time at which claims shall become open to location for lack of payment of license fees, annual labor, or any other cause shall be changed from January 1 to July 1, this by reason of the fact that it would be desirable to escape in future from the unwholesome consequence of pretended discoveries and snow markings.

We report that the license fee suggested in lieu of the annual labor now required will produce a sufficient revenue to fully carry out the provisions of the amendments proposed and leave margin for internal improvements—such as roads, trails, and bridges, and possibly sustain the government of the division.

AMENDMENTS TO THE LAWS AND REGULATIONS.

In view of the fact that the President has recommended that the purely administrative powers and duties now by law imposed upon the district judges should be made to devolve upon the governor of the district, we suggest that while the principle announced is correct

the application of it under existing conditions would be difficult. We suggest, therefore, that in view of the fact that the Territory of Alaska is easily divisible into four grand subdivisions, arising from geographic, climatic, and topographic conditions, that it be so divided for administrative and executive purposes, each portion to have its own vice-governor and its own system of administration, thereby leaving the judges free to devote their entire time to judicial duties and at the same time removing them from a great deal of strife that now embarrasses the judicial office in Alaska.

To this end we believe that each subdivision so created should have its own self-contained government, its own system of audit and disbursement of its funds, such latitude in the matter of expenditure of money as may arise from conditions in each division.

We report that the matter of the auditing, allowance, and disbursement of moneys here is surrounded with obstacles and so hampered with regulations that serve no good purpose that officers and others are subjected to hardships which should be avoided and which could by wise provisions of some kind be made less burdensome to everyone. That the immense distance between this section and the national capital, where all accounts are now audited, makes it possible for our people to be kept out of their just dues during some parts of the year—for eight or nine months at a time—and that this involves great losses and hardships which might be avoided if accounts could be audited, allowed, and paid here.

We therefore recommend that the several divisions be furnished with auditing and disbursing officers, as a part of a self-contained system of government above referred to.

We recommend that an appellate court be created for Alaska, and that the provision of the law creating it require its sessions to be held in each of the judicial divisions of the district.

In our opinion, the jurisdiction of the United States commissioners should be so increased as to give them jurisdiction to hear and determine possessory actions and actions to try title to mining claims, to foreclose liens for labor, and determine all equitable actions arising out of grub-stake agreements; to grant injunctions in all cases where the same may be necessary; in fact, to have all the jurisdiction and powers now conferred upon the district court in all precincts outside the one in which the district judge resides, subject to review and appeal. We believe this court should have general jurisdiction in criminal cases, in order that offenders may be tried speedily in the place where the crimes are committed, so that witnesses may not be compelled to lose the immense amount of time and money necessary in coming from outlying districts to Nome or the other official residences of the district court.

The present fee system by which commissioners are paid is, in our opinion, pernicious. We believe these officers should be paid their salaries out of the Federal Treasury, regardless of whether their officers earn the fees, and that they be not permitted to practice law.

We recommend that United States marshals be permitted to maintain at each of their stations sufficient dog teams and drivers in the same manner as the Canadian mounted police are permitted to do, in order that they may better enforce the criminal law during the winter season.

We recommend such amendments to the laws as will permit home rule to the extent of allowing subordinate officials, wherever the efficiency of the service will not be impaired thereby, to be selected from the people of Alaska, under provisions of law to be enacted permitting the same.

We suggest that each commissioner's precinct or district could be erected into an administrative district, similar in form to counties and townships in the States, and that the public moneys collected in such districts might, within reasonable limits, be expended by supervisors in such manner as would produce the best results to the public.

In view of the fact that Alaska is so far away from the seat of the Federal Government and its needs so little appreciated by the majority of Congress, we recommend that until a Territorial form of government or statehood shall be conferred upon it, that an annual convention of delegates, empowered to advise with Congress as to needed legislation and to recommend a policy of administration of government in Alaska be provided for, and that the expense thereof be borne by the Federal Government.

In view of the fact that there is in the National Treasury a sum of money aggregating at least $1,000,000, which is a net sum left over after paying the purchase price of the acquisition and all expenses of administration to date, we believe that a large amount of that sum could be judiciously expended in internal improvements that would have a tendency to develop the vast resources of the country without in any manner increasing the burdens of the people of the States, and that such expenditure would very sensibly increase the revenues of the Government from the district.

Respectfully submitted.

JOHN S. COPLY,
Foreman of the Grand Jury.

Appendix L.

CATALOGUE OF THE EXHIBITION OF THE DISTRICT OF ALASKA AT THE LEWIS AND CLARK CENTENNIAL EXPOSITION, PORTLAND, OREG., 1905.

Appropriation for the Alaskan Exhibit at the Lewis and Clark Centennial Exposition, Made by Act of Congress April 13, 1904.

"Sec. 3. That the Secretary of the Interior is hereby authorized to aid the inhabitants of the district of Alaska in providing and maintaining an appropriate and creditable exhibit of the products and resources of said district at the said Lewis and Clark Centennial Exposition, and for that purpose he is authorized to appoint one or more persons to supervise the selection, purchase, preparation, transportation, arrangement, installation, safe-keeping, exhibition, and return of such articles as may be exhibited from said district at said exposition; and he is hereby authorized to select so much of the exhibit of the district of Alaska at the Louisiana Purchase Exposition at the city of Saint Louis, in the year nineteen hundred and four, as he may deem necessary for the purpose of making said exhibit at the Lewis and Clark Centennial Exposition, and that the cost of said exhibit of said district of Alaska, including such selection, purchase, preparation, transportation, arrangement, installation, safe-keeping, exhibition, and return of the articles so exhibited, shall not exceed the sum of twenty-five thousand dollars, which sum is hereby appropriated out of any money in the Treasury not otherwise appropriated."

Officials and Assistants for the Alaska Exhibit.

Hon. Ethan Allen Hitchcock, Secretary of the Interior; Hon. Thomas Ryan, First Assistant Secretary of the Interior; Hon. John G. Brady, governor of Alaska, acting executive commissioner from January 1 to August 19, 1905; Prof. William A. Kelly, executive commissioner, appointed August 19, 1905; Joseph B. Marvin, special agent for the Alaska exhibit.

Representatives of the Nome Chamber of Commerce in charge of gold exhibits from Nome.—J. E. Chilberg, J. J. Underwood.

Detailed by the United States Geological Survey to arrange mineral exhibits.—Frank L. Hess.

Employed in securing exhibits from Alaska.—Godfrey Chealander.

Lecturer on Alaska in connection with stereopticon views.—W. A. Reid.

Attendants at the Alaska exhibit.—Harry Pidgeon, L. L. Bales, James Fish.

Foreword.

THE ALASKAN EXHIBIT AND ALASKA.

The exhibit of the products and resources of the district of Alaska, displayed at the Louisiana Purchase Exposition and at the Lewis and Clark Centennial Exposition, has been a cause of surprise to the many thousands of people of the United States who have witnessed it, and has awakened in their minds a desire to know more of that great region. The exhibit has been a revelation, and not only has it caused surprise and awakened interest, but it has excited wonder and admiration because of the variety of Alaska's products, the enormity of its wealth already exploited, and the vastness of its resources awaiting development in the future. The fact that many thousands of eastern people have visited Alaska during the present summer, crowding the steamers to their full capacity, is evidence that the general public has been recently awakened to an interest in and a desire to know more of that great region. It may be added as further proof of this that there is at the present time extensive demand for published statements of facts in relation to Alaska.

Prior to the Louisiana Purchase Exposition Alaska was almost a terra incognita. Comparatively few people knew more of it than that it was a region of cold weather and gold mines, and it has astonished such people to be shown by its exhibits, and to be informed by attendants expounding them, that Alaska is capable of producing cereals and vegetables and fruits common to the temperate regions; that there are fishing banks along its shores yielding salmon, halibut, and cod more extensive than those of any other part of the globe; that the output of its gold mines has already reached the enormous sum of $161,000,000; that the prospecting already done, together with the reconnoissances by the United States Geological Surveys, have demonstrated beyond a doubt that the store of minerals in Alaska is vast beyond comprehension; that its mines contain all varieties of minerals; that there are within its confines quarries of marble of the finest qualities; that it contains coal beds and petroleum ample for its own uses and for supply to the whole northern Pacific region; that to-day there are growing in its valleys extensive forests of valuable timber; that it

contains millions of acres of grasses suitable for stock raising; that it is the greatest fur-producing region in the United States; that there flow within its borders two of the largest navigable rivers in North America; that the inhabitants, even in its most northerly towns, dwell in comfort and prosperity, notwithstanding the coldness of its climate; that the southern portion of the district is more mild in temperature than many other regions of the United States in lower latitudes; that the telegraph reaches from its most southerly to its most northerly limit; that railroads are being constructed from its harbors to its interior regions; that the largest steamers ply its waters; that its scenery compares with the grandest upon the globe; and that the inhabitants of Alaska, both white and native, are provided with common schools and industrial schools equal to those of the same character in the States.

But while knowledge of the products and resources and possibilities of Alaska has not been common to the general public, and immigration into that region has been tardy, the Government of the United States has for many years realized that Alaska was one of its most valuable possessions, and it has not been indifferent to the responsibility and duties which this knowledge has imposed upon it. In purchasing this region from Russia thirty-eight years ago it showed far sighted wisdom. In throwing open this vast possession to settlement by pioneers, in permitting the people of the United States to prospect its mines and exploit its minerals, it has shown magnanimity as well as broad statesmanship. At great cost it has established a revenue-cutter service along its shores; it has stationed army and naval officers with their companies within its borders; the United States Geological Survey has, by its direction, during many years past made explorations and surveys and scientific investigations there; the Department of Agriculture has tested its capacity for agriculture, establishing experiment stations; the bureau of education has established schools; reindeer have been taken there from Siberia to serve as beasts of burden and to supply food in case of necessity; the Signal Service has built telegraph lines across the whole district; light-houses have been erected; provision has been made for the care of its insane; committees of Congress and special agents selected by the President have been sent to ascertain the actual facts in relation to the resources and welfare of the district from personal observation and inquiry; and it should be added, as by no means the least important of its wise measures for the furtherance of the development of Alaska, that by liberal appropriations the Government has secured to its people opportunity to display their resources and products to the inspection of the millions who have visited the two great recent national expositions. Without doubt an object lesson is the most effective method of education. Verbal or written description of an object affords information, but the object itself conveys a more clear and comprehensive idea. It is impressive. The observer never forgets it. An exposition is a microcosm. Whenever an exposition has been held teachers and persons interested in the imparting of information have realized that it is the greatest of educators, and the idea of museums to extend its influence has always suggested itself to them. The first great exposition, held in the Crystal Palace in London, resulted, as a sequence, in the establishment of the Kensington Museum. After the great exposition in Philadelphia in 1876, Philadelphia founded a zoological garden and an art gallery, which have afforded information and pleasure to millions of people. Very many of the exhibits shown at the Louisiana Purchase Exposition were sent at its close to museums in cities or as annexes to universities, and already the citizens of Portland and of the neighboring city of Seattle have realized that as a sequence to the Lewis and Clark Exposition—to continue its educational service—there should be established in one or both of those cities a museum in which should be displayed as many of the exhibits from the Lewis and Clark Exposition as can be secured.

In authorizing the publication of a catalogue of the Alaska exhibit at the Lewis and Clark Centennial Exposition the Department of the Interior, which has had general charge of the elaboration of the exhibit for Alaska, has been influenced by the desire to continue and extend the educational influence as to Alaska afforded by its exhibit and to add somewhat to the literature relating to that district, thus supplying in a measure the demand for more extended information relative thereto; and in preparing the catalogue it has been the endeavor to include the latest data bearing upon its resources and commercial progress. To that end the following authorities are quoted relating to more recent developments.

ALASKA AN EMPIRE IN ITSELF.

Alaska contains almost 600,000 square miles; it is as large as all the United States east of the Mississippi and has more than 26,000 miles of seacoast, which will be dotted with prosperous mining camps from Portland Canal to that point in the far north where the boundary line touches the Arctic.

The possibilities of the future shipping interests of that length of coast line are wonderful. To-day shipping is an infant industry, seeking additional capital to extend its operations and showing every year a remarkable growth. Ten years ago Alaska had but one steamer a month. To-day there are several every week plying between Seattle and southeastern

and southwestern Alaskan ports, and new ones are being built for this growing commerce. They go loaded with domestic manufactures, machinery, and supplies, and come loaded with ore from inexhaustible mines for the smelters of Puget Sound.

In twenty-five years Alaska will have a population of more than 1,000,000, developing mines, catching fish, and cutting timber. Last year Alaska shipped to the United States furs, salmon, codfish, halibut, whalebone, fish oil, copper ore, tin ore, and bullion to the value of $19,655,911. During the same period Alaska bought in the United States foodstuff and clothing to the value of $11,108,004, leaving a balance in Alaska's favor of $8,547,907.—William T. Perkins, of Nome, Alaska, in The World's Work for August, 1905.

PRODUCTS OF THE NORTHLAND.

One who has not visited the Seward Peninsula can have only the slightest conception of its vast possibilities as a producer of mineral wealth. The output of gold has steadily increased since the summer of 1899, when Anvil and Dexter creeks and the gold-laden ruby sands of the Nome beach were first actually operated. From that time until to-day this region has enhanced the wealth of the United States by over $30,000,000, and with ditches and railroads now installed or under construction the country's future is full of promise which will multiply its output many times repeated.

Although payable gold has been obtained from 136 different creeks and gulches located at different points between Kotzebue Sound and Norton Bay, and marvelous developments have taken place on the tundra adjacent to Nome, it is not to placer mining alone that the inhabitants of the peninsula look for future prosperity. Immense reefs of free-milling gold, upon one of which a 20-stamp mill has been pounding out dividends for two years past, have been uncovered; ledges of galena, graphite, quicksilver, and copper have been exposed, and tin has been found in commercial quantities, both in alluvial deposits and in its native matrices. Immense beds of coal discovered in different districts have, to an extent, solved the fuel problem.

Seward Peninsula is 27,600 square miles in extent, and this vast area is still only partially prospected. There are thousands of creeks within its limits, but on only a minor portion of these have shafts been sunk to bed rock.

The peninsula is divided into five districts, as follows: The Cape Nome, Council, Fairhaven, Kougarok, and Port Clarence.

The past year has been a particularly prosperous one. There has not been a single business failure or insolvency filed. The resources of the country have been developed to a marvelous extent, as the first shipment of ivory, furs, and gold has proven. The customs report shows that 43,400 tons of merchandise, 6,715,183 feet of lumber, and 1,847 head of live stock were entered last year at Nome alone. Add to this the amounts received at St. Michael and other points and the people of Seattle will have some idea of what this northern trade means to their city.

Alaska's present developed resources surpass belief, and its future prospects are still more wonderful. With its present producing mines of gold, silver, copper, and coal, its illimitable forests of timber, its seemingly inexhaustible supply of fur-bearing animals, its prospective untold values in the collection of ivory, and the fishery of seal, cod, herring, and halibut, it is indeed a land of promise and one that bids fair to become one of Uncle Sam's most valuable possessions.

Alaska cost the United States $7,200,000. In thirty-five years it has yielded the people of this country $158,999,000, and its development has just been commenced. While other territories have been a source of continual expense and worry, the Northland has been a source of profit, directly and indirectly—profit in the Government Treasury and in the pockets of the people. No other insular possession has done as much for its country as Alaska has done for the United States.—J. J. Underwood, representing the Nome Chamber of Commerce.

PRAISES ALASKA.

I go to Alaska every summer, combining business with pleasure. I believe Alaska to be the grandest country on earth—God's country. Nobody can describe Alaska. Combine all the pictures in natures art gallery, think of all the mountains, all the snow-capped peaks, all the valleys, all the cascades, all the torrential streams rushing tumultuously seaward, all together, and you have a faint glimmer of the wonders, the greatness, the glory and the inexpressible grandeur of Alaska.

In my opinion, Alaska will produce more mineral wealth in the next fifty years than any three States of the Union.—Hon. William Sulzer, M. C.

ACTUAL WORK BEGUN ON VALDEZ RAILWAY.

After years of delay, actual work has been begun on the Valdez-Copper River Railway. A force of twenty men has been put to work on the road, and it is expected they will reach the

summit this season. This road extends from Valdez to Eagle, and taps the Tanana country, thus opening up a large and rich district.—Special dispatch to the Daily Gold Digger of Valdez.

THE SALMON PACK.

From all reports the pack of red salmon in Alaska will be about 1,500,000 cases. The pack at the various canneries is estimated as follows:

Bristol Bay	1,000,000	Carluk	30,000
Chignik	100,000	Alitak	1,000
Orca	35,000	Klawak	30,000
Uyak	30,000	Metlakahtla	10,000
Cooks Inlet	12,000	Loring	80,000
Yakutat	30,000	Shakan	10,000
Dundas	13,000	Barnes' cannery	15,000
Funter Bay	22,000	Tonka	30,000

Very little attention is being paid to pink salmon in Alaska this year, and the pack will probably not exceed 20,000 cases. Bristol bay is the treasury of the Alaska salmon business. The pack there this year will exceed the packs of previous years by at least 200,000 cases.—The Mining Journal.

BRISTOL BAY SALMON PACK.

Official returns of the Bristol Bay red salmon pack for the present season show a total pack of about 1,062,000 cases. Other canneries in this district from Orca west will have a total output of about 250,000 cases. The run was not quite finished at last reports in some places. The Bristol Bay run ended about the last of July.

The Bristol Bay pack is nearly double that of last year and will bring the aggregate of all Alaska's canneries much above last year's total. The Chignik pack will be about 121,000 cases, which is nearly the same as that of 1904. The Karluk will be about 50,000. The fish were still running there a few days ago. The Uyak pack is 31,000; that of Orca about 35,000. The pack of Kusiloff was about 40,000. Besides the pack of salmon, about 8,000 barrels were salted at various places.—From the Alaska Press for August, 1905.

BRIEF NOTES OF PROGRESS—FRAGMENTS OF INFORMATION AS TO THE ALASKA CENTRAL RAILWAY, GATHERED FROM HEADQUARTERS.

The work of laying steel on the Alaska Central Railway began again at the end of the track on last Monday. The steel gang started out with a record of one-half mile a day. This work will continue until the second 20-mile section is completed.

It has about been decided that 300 men will be kept busy on rock work on Turnagain Arm the coming winter. All kinds of supplies are now being shipped there by steamer with that purpose in view. In all likelihood a number of large contracts will be let on the north shore of Turnagain Arm.

Five hundred additional workmen are expected at Seward and on the Arm by the first of August. It is expected that these men will come on a special steamer chartered for that purpose.

Work at all the camps on the completed portion of the line between Seward and Lake Kenai will soon be moved to the summit and located from miles forty to forty-five. Material and supplies are now being forwarded to the places where these camps will be established. Forty men are at work on the wagon road being constructed to Placer River Canyon, and the completion of this means of transportation will facilitate the moving of supplies to a point where heavy work will be carried on. Three thousand of the 6,000 tons of steel rails recently landed at Seattle by the steamer *Dakota* are expected to be sent to Seward on the freight steamer *Edith* at as early a date as possible.

Two new 55-ton locomotives for the railway recently passed inspection by the master mechanic in St. Louis.—Seward Gateway.

ALASKA'S GOLD—YEAR'S OUTPUT WILL REACH $12,000,000.

Twelve million dollars is the estimate of Alaska's placer yield for the year 1905. These figures are arrived at on the following basis:

Fairbanks	$6,000,000
Nome	4,000,000
Circle	1,000,000
Other camps	1,000,000

Of course, the amount is not intended to represent the mineral output of Alaska, for the quartz mines are not considered at all. Moreover, scattered here and there over the wide reaches are a few men steadily engaged in taking out gold. They are not advertising their districts. All they want is to be left alone. No accurate figures can be secured of the gold from these sources. There are also other well-established districts for which no estimates can be made at this time. But from the gold already taken out, it is certain that Alaska will show a net increase of $4,000,000 over last year. The estimated yield at this time is $12,000,000. The output last year was $9,000,000.

The largest increase, of course, will be shown in the Tanana. This district placed but $1,000,000 to the credit of Alaska last year, but will give fully $6,000,000 this year, and some believe it will even run higher. Certainly it will not run below that amount, if the high average of the pay dirt now being taken out is any criterion.

One hundred and seventeen steam hoists were at work all winter taking out dirt, in addition to the numberless hand windlasses, and 800,000 feet of lumber was used for sluice boxes, as against 100,000 feet the previous year. Lack of necessary machinery will make the output less than it would have been otherwise.

But even a gain of $5,000,000 in one year is not considered very bad. Another place which will be heard from next year, if present signs count for anything, is the Delta district, and the gold taken from there will be credited to the Tanana, so that with the development of other creeks already blocked out sufficiently to show that they will pay, the Tanana district will in a very few years exceed the output of the Klondike. In one brief year it has become the greatest producing district in Alaska.

Nome is again booming this year by reason of the recent rich strikes on Portland bench. The estimates for its total production places the sum between $3,000,000 and $4,000,000. Little Creek alone, it is estimated, will produce $1,000,000. The Solomon River country will yield $250,000. It is not possible to get very close figures on the output of the tundra. In any event Nome will show a substantial increase, and the new discoveries made this season will make it a good camp for years to come.

About 185 people wintered in the Koyukuk district, and the output for the year is placed at $150,000. Eighty men have been doing winter work on Nolan Creek, which is the only deep diggings it has been possible to work because of flowing water.

Between 200 and 300 men are scattered over the Delta district, since the first strike made on Tenderfoot Creek this spring. The latter creek has passed the experimental stage and will be among the producers next year.

On Portage Creek the miners are already sluicing from open cuts, and this fall will tell the story. As the pay dirt lies but a foot below the surface, it is the poor man's paradise save for the scarcity of water and wood.

The recent strikes on Redman and Caribou creeks, which empty into the Salchket, promise well and will be proven or disproved by the work now in progress. It is believed that another large town will be in existence in this district in another year.—The Valdez News.

RECENT DISCOVERIES OF TIN ORES.

That tin mining, both placer and quartz, is destined to become one of the most important industries in Alaska is no longer a matter of conjecture. From Cape Prince of Wales to Shismaneff Inlet, and in the surrounding and intervening countries, immense ledges have been discovered. Two of these properties have been sold by their discoverers to mining companies for large sums. These properties have been developed, and the fact that two stamp mills and a concentrating plant are now in course of construction indicate that the development work has proven eminently satisfactory.

The Bartels mine, at Tin City, was developed to a depth of 150 feet last winter, at which level the ledge was crosscut. The vein is 10 feet wide, and assays showed values of from $12 to $800 to the ton. The Bartels mine is fully equipped with electric drills and other labor-saving appliances essential to successful and economical mining. More than 500 tons of valuable tin ore was placed on the dump last winter and will be shipped for treatment this summer.

Crim, Randt, and O'Brien, three Lost River prospectors, assisted by ex-Governor Hutchinson, of Idaho, last summer developed two large stringers of tin. Twenty tons of this ore shipped to the outside for treatment gave a return of over 400 pounds to the ton.

The Seward Tin Mining Company, an aggregation of Nome prospectors, backed by J. D. Thaggard and other local business people, last winter uncovered an immense ledge of tin ore at Tin City. One specimen, weighing 400 pounds, but broken in transportation, was shipped to the Alaska exhibit. An assay of this rock shows 62 per cent tin, an approximate value of 18 cents a pound or $360 per ton.

On the Ears Mountain, about 9 miles from tide water, a large vein 15 feet wide was discovered two years ago. It has been traced for over 3 miles and in one place is exposed in a bluff reaching an elevation of nearly 400 feet. Nature has performed the prospecting

work on this vein, and as the assay certificates show a high percentage of metallic tin, the company which owns it have surveyed and are preparing to build a small railroad in order that the ore may be shipped for treatment. According to the United States Geological Survey the formation of this particular region is very ancient. Rocks have been found there which are so old that it is difficult to classify them. These rocks are black and of extreme hardness.

John E. Benton, a Milwaukee capitalist, last year bonded several claims near Tin City, Cape Prince of Wales. He developed the properties and then organized a company known as the United States and Alaska Tin Mining Company. A 10-stamp mill and a concentrating plant is now in course of erection on these properties. Several tons of the ore shipped to Hamburg for treatment last summer gave very satisfactory returns.

Mr. W. H. Ogilbie, who has had many years' experience in experting tin ores and other minerals, and who for the past two years has acted as manager and engineer for the American Tin Mining Company at Cape York, stated to the writer that the true width of the tin-bearing stratum of placer tin on Buck Creek has not yet been determined. By prospecting with a drilling machine, however, he learned that it is at least 2 miles by 10. Buck Creek is the only stream that has been prospected, but fair prospects have been found on other water ways. On last summer's operations a return of from a few ounces to 25 pounds of tin to the cubic yard was obtained over the area of 20 square miles. The best gravel when sluiced yielded $64 to the yard in tin and $1 in gold. The average value was $8 in tin and 40 cents in gold. Fifty tons of this placer tin was shipped from Buck Creek last fall to Hamburg, Germany, and when smelted yielded $448 per net ton. The concentrates contained 70 per cent metallic tin.

Roughly estimated the tin-bearing area of Alaska comprises 1,200 square miles. Experts estimate over $25,000,000 in sight. Practically all of the tin used in the United States is imported from the Straits Settlements; Cornwall, England, and Mount Birchoff, Tasmania. The United States uses about one-third of the world's product and spends annually $25,500,000 for it. But unless all known geological signs fail and the opinions of the most expert mining engineers count for naught, the time when this vast amount will be expended in Alaska is near at hand.—J. J. Underwood.

ALASKA, LAND OF VAST NATURAL WEALTH.

The Alaska exhibit at the Lewis and Clark Exposition is a compendium. There the intelligent visitor, observing the exhibits and listening to exposition of the same by attendants, may derive more information regarding Alaska in an hour than he can obtain in any other way in weeks or even months.

Upon entering the section of the Government building in which the exhibit is displayed visitors will first be shown a relief map, from which, with the explanation of the attendant, they will learn about the topography of Alaska, the height of its mountains—one of which is the highest in the United States—the depth of the adjacent ocean waters, the length of its great rivers, the location of its cities and towns, the location of its gold and copper mines, the extent of its railroads already completed and of those surveyed, the location of its marble quarries and its coal mines, and of its petroleum wells and tin mines. Turning to a map displayed on the wall near by they will learn that Alaska contains one-fourth the area of the whole United States, that its extent from east to west equals the distance from the Atlantic to the Pacific, and that its extent from north to south equals the distance from the Great Lakes to the Gulf—a region large enough to form seven States equal in size to the average of States in the Union.

Proceeding in the company of an attendant the visitor will be shown one of the most impressive and most significant exhibits, consisting of a gilded cube about 3 feet in diameter, representing the size of a block of gold worth $7,200,000, which is the amount paid by the United States to Russia for Alaska, and beside it they will see a gilded pyramid of blocks representing the amount of gold taken out of the Treadwell mines in Alaska each year since 1882, aggregating in value $21,800,000, a sum which is three times the amount paid for Alaska, taken from one mine. Next, in the main aisle, the visitor will see several thousand dollars' worth of furs brought out from Alaska and representing an immense industry. He will be shown furs of the seal, bear, wolf, mountain sheep, skins of the white, red, blue, and silver-gray foxes, badger, beaver, otter, mink, sable, and ermine. Near this exhibit he will see a pyramid of cereals grown in Alaska, and this will give him his greatest surprise. He will be told by the attendant that the Department of Agriculture has proven, through its experimental stations in Alaska, that all of the cereals and many of the vegetables and fruits grown in the temperate regions may be grown successfully in Alaska. He will be told that southern Alaska is warmed by the Japan currents, and that that region is as mild in temperature as is the temperature of Portland, Oreg., or of Washington, D. C.

Proceeding he will be shown a display of ores, including gold, copper, and tin ores, arranged in geographical order, from Sitka to Nome. He will see a gilded pyramid illustrat-

ing the output of the gold mines of the Seward peninsula during the past six years, aggregating in value $29,000,000. Next comes a display of gold nuggets, including the largest nugget ever found in Alaska, weighing 182 ounces and valued at $3,276. This nugget he will be permitted to lift, and when he goes away he can say that he has hefted a fortune in one nugget. He will also see other nuggets varying in value from $10 to $2,000, and in an adjacent case he will be shown pay dirt from the great mines of Alaska, from which the output varies from $50,000 to $200,000 each year. Looking at this dirt he sees no gold, but a card displayed with each collection conveys the information of its value. Near by there is shown stream tin and blocks of tin yielded by the same, and next to this are quartz tin ores brought from the most northerly part of Alaska, which equal in value the best tin ores in the world. These mines, it is believed by many, are yet to furnish all of the tin required by the United States. The mine from which this quartz is brought has recently been bonded for $5,000,000. It contains a solid ledge of ore of great extent.

Copper ores are shown, some of them containing 99 per cent of copper, coming from various extensive mines in different parts of Alaska. The visitor will be shown specimens of coal, and he will be informed that the Geological Survey has recently published a statement, founded upon the investigations of that bureau, that the known coal fields of Alaska include about 16,000 square miles, and that, as less than one-fifth of the Territory has been surveyed, it is fair to assume that they actually embrace several times this area. It is said the iron age is the greatest from a commercial standpoint. The same may better be said of the coal age, as coal is the one need above all others which will aid most in the development of Alaska. With coal, Alaska can have railroads, steamships, and gold and copper mining facilities at reasonable cost. Almost the same may be said of the petroleum wells which are found in Alaska, from one of which a fine exhibit of petroleum has been brought to the Alaskan exhibit. At the present time petroleum is the fuel most available for the miners on the Seward Peninsula.

In addition to the ores above mentioned, there is shown ore from which mercury is obtained, which is very valuable to the miner, together with ores containing silver and platinum and specimens of jade. In fact, there is no known mineral which may not be found somewhere in the district of Alaska.

In proof that Alaska is progressive, there are shown in the Alaska exhibit specimens of school work from the public and high schools of Alaska, and from its industrial school and its schools for natives, which are a surprise to teachers of the most advanced and up-to-date schools of the States.

The most unique feature of the Alaska exhibit consists of Indian curios and totem poles. These constitute a most interesting display, and, it may be added, they are, and probably will be for some time to come, objects of commercial value. Governor Brady's collection of Indian curios, which is on display, is valued at many thousands of dollars, and the 16 totem poles which are on exhibit outside the building are of much greater commercial value than is commonly supposed, as they probably form the last great collection that will ever be brought from Alaska. The city of Seattle paid the natives of Alaska $1,200 for one totem pole, which is displayed in one of the squares of that city, and the 13 large totem poles adjacent to the wing in which the Alaska exhibits are displayed may be disposed of, if the Alaska commission so desires, for many thousands of dollars, being, as they are, objects of the greatest interest to ethnologists. One of the smaller totem poles on exhibition at St. Louis was sold for $500, and Governor Brady was besieged by agents of universities and museums who wished to purchase other poles at much greater prices. In this connection should be mentioned garments, which are on display in the Alaska exhibit, made by Indians, of squirrel skins and sealskins, together with waterproof coats made from the intestines of animals. There are also shown beautiful baskets woven by the natives, and robes made of eagle down.

In the case which contains the gold nuggets from Seward Peninsula, above mentioned, there is likewise shown a collection of most artistic jewelry, made in Nome, Alaska. This collection includes watch chains made of gold nuggets, and breastpins and stickpins of fossil ivory, rimmed with nuggets. This fossil ivory was cut from the tusks of the mastodon, and have lain buried deep in the earth in the far north for hundreds of years. The ivory during this time has changed to a beautiful brown or variegated tint, and is very rare and beautiful. Other exhibits from Nome consist of walrus tusks handsomely etched with various drawings by white and natives. On one of these tusks there is a very lifelike head of President Roosevelt, etched by a native.

From other Alaskan towns have come fine needlework and interesting articles made in industrial schools. All of the cedar stools on which the birds are mounted were made by the native boys in the industrial school of Sitka, Alaska, in charge of Prof. W. A. Kelly. In a case by themselves, carefully locked, are displayed rare volumes and maps of exploration and early discoveries, from Sitka, sent by Governor Brady as showing the beginnings of the Alaska library.

Some four years ago a committee, consisting of Senators and Members of the House of Representatives, was sent to Alaska by Congress to inspect that region and to ascertain

its needs. Their reports were unanimous in expression of amazement at the great resources of that country, and since that time Congress has been most well disposed toward Alaska. President Roosevelt, who has kept fully advised as to the development of this Territory, has said: "No country has a more valuable possession—in mineral wealth, fisheries, furs, forests, and also in land available for certain kinds of farming and stockraising. It is a territory of great size, of varied resources, and well fitted to support a large population." And he asked Congress to enact such legislation as would best further the development of that region. Congress has, since the report of the committee, been alive to the needs of Alaska, and it may be truly said that the United States Government could hardly have done more for the furtherance of the development of the great rich district of Alaska, with its untold wealth in minerals and its great possibilities in agriculture, than it has done by securing for the people of Alaska an opportunity to display their resources and products to the inspection of those who visit the Lewis and Clark Exposition. The exhibits shown at the exposition have excited the utmost wonder and surprise in the minds of the many witnessing them, who had been in ignorance of the resources of that country, and many thousands are being led by these exhibits to investigate and to seek further information. The effect of the Alaska exhibit will undoubtedly be far-reaching and permanent. Nor can it be doubted that Congress will in the near future supplement this great contribution to Alaska's welfare by legislation which shall secure the one great need of Alaska—inland transportation.—Jos. B. Marvin, in the Sunday Oregonian, Portland, Oreg.

RECENT NOTES FROM THE ALASKA PRESS.

Alaska does more business per capita than any other geographical division of the United States.

Alaska's products from all resources for the year just closed amounted to $21,400,000.

Alaska has furnished during the past year a market for goods, wares, and merchandise to the value of $12,500,000.

The output of gold for the year 1905 will reach $10,000,000. This is a conservative estimate.

The pack of salmon at the various canneries this year will exceed 1,500,000 cases, amounting in value to $6,000,000.

GEOGRAPHY.

Alaska is located in the extreme northwestern portion of the United States, and contains about 600,000 square miles. It is bounded on the north by the Arctic Ocean, on the west by Bering Strait, on the south by the Pacific Ocean, and on the east by the Northwestern Territory. In extent it is about 800 miles from its eastern boundary to Bering Strait, and about 1,000 miles from north to south, not including the Aleutian Islands, which reach from its southwesterly portion westward into the Pacific Ocean about 1,500 miles. It contains one of the highest mountains on the American continent—Mount McKinley—one of the largest rivers on the continent—the Yukon—which is navigable for 2,500 miles, and which runs through the center of the Territory from east to west, emptying into the Bering Sea. Its rivers have numerous tributaries, some of which are navigable. The region is mountainous, but contains extensive river valleys of productive soil which, in their uncultivated state, produce excellent grasses and wild fruits and berries in great quantities.

CLIMATE.

The climate of Alaska is nearly as varied as the Atlantic coast extending from Maine to North Carolina. Southeast Alaska and the Aleutian Islands are tempered by the Japan currents, flowing from west to east along the southern coast. North and west of the coast range of mountains the climate is healthful, invigorating, and dry, and on the Yukon River near the Arctic Circle the temperature ranges from 102 in summer to 70 degrees below zero in winter. In southeast Alaska, where the effect of the Japan currents is felt, the temperature is more mild than in other temperate regions of the same latitude.

POPULATION.

In the year 1900 the population of Alaska, according to the census, was 63,592, of which number 30,507 were whites and 33,085 were natives. Fully 25,000 people spend five or six months in the district every year who are not included in the census of the permanent population.

PUBLIC LANDS.

Mineral lands are located in conformity with the general mining law enacted by Congress in 1872. Timber may be used for home consumption, but can not be shipped out of the Territory. Sawmills are charged a tax of 10 cents per thousand feet.

A bill approved March 3, 1903, provides: "That every person who is qualified under existing laws to make homestead entry of the public lands of the United States who has settled upon or who shall hereafter settle upon any of the public lands of the United States, situated in the district of Alaska, whether surveyed or unsurveyed, with the intention of claiming the same under the homestead laws, shall, subject to the provisions and limitations hereof, be entitled to enter three hundred and twenty acres or a less quantity of unappropriated public land in said district of Alaska."

EDUCATION.

Alaska is well supplied with schools. Those in the incorporated towns are supported by a municipal tax. Schools for the natives are maintained by various missions and by the United States, there being a special appropriation by Congress for this specific purpose. The white schools are graded, and include a number of high schools.

The act of May 17, 1884, establishing a civil government for Alaska, made provision for the education of children of school age in the district of Alaska, and Congress annually appropriated a specific sum for the building of schoolhouses and the maintenance of schools.

Boarding schools for the training of the natives are maintained by the various denominations which have established missions in Alaska.

New laws have been enacted from time to time to meet the needs of the influx of population. The law of 1901 authorized the incorporation of towns of 300 inhabitants or more, and provided for the people to elect a school board, which selects the teachers and fixes their salaries. All the larger towns are incorporated, and their schools are supported from a license tax paid for business carried on in the incorporated towns. Schools in these incorporated towns are well graded, and each has a high school with efficient teachers.

In 1905 Congress enacted a law as follows:

[PUBLIC—No. 26.]

AN ACT to provide for the construction and maintenance of roads, the establishment and maintenance of schools, and the care and support of insane persons in the district of Alaska, and for other purposes. (Approved January 27, 1905.)

SEC. 3. That the governor of the district of Alaska shall be ex officio superintendent of public instruction in said district, and as such shall have supervision and direction of the public schools in said district, and shall prescribe rules and regulations for the examination and qualification of teachers, and shall make an annual report of the condition of the schools in the district to the Secretary of the Interior.

SEC. 7. That the schools specified and provided for in this act shall be devoted to the education of white children and children of mixed blood who lead a civilized life. The education of the Eskimos and Indians in the district of Alaska shall remain under the direction and control of the Secretary of the Interior, and schools for and among the Eskimos and Indians of Alaska shall be provided for by an annual appropriation, and the Eskimo and Indian children of Alaska shall have the same right to be admitted to any Indian boarding school as the Indian children in the States or Territories of the United States.

REINDEER.

The introduction of domesticated reindeer into northwestern Alaska was most timely. This industrial enterprise is under the management of the Bureau of Education, and was adopted as a better way to aid the Eskimos in their strenuous efforts to "keep the wolf from the door," than the system used elsewhere of issuing rations to improvident Indians. The food supply of the Eskimo became well-nigh exhausted, as the whale, walrus, and fur-bearing animals disappeared before the white man's superior methods of taking these animals of both sea and land. The natives were rapidly approaching a condition of starvation, and were suffering for the necessary comforts of life.

From a small beginning with a few of these animals transported from Siberia, the Alaska herds are now numbered by thousands, and the Eskimos have not only learned to domesticate and care for the reindeer, but to use it in place of dogs for teaming and to get milk, meat, and clothing from this useful animal. The reindeer lives chiefly upon wild moss, while dog teams and horses must be furnished with feed; hence the reindeer is the natural draft animal in arctic regions. Under contract with the Post-Office Department, the United States mail has been carried by reindeer teams on four postal routes—between St. Michael and Kotzebue, Eaten and Nome, Teller and Deering, and Kotzebue and Point Barrow.

MINING.

The mineral industry of Alaska is more extensive than any other at present, and is steadily increasing. The gold-mining industry consists mainly of placer mining, but quartz mining is destined to become even more important in the future, as it is the history of all

placer mining regions that gold quartz exists below the surface. It is estimated that the gold product of Alaska aggregates about $149,000,000, most of which has been mined since the year 1888. Nome, Council City, Fairbanks, Coldfoot, Rampart, Nizina, Forty-mile, have all been centers of interest in placer mining. Hydraulic mining is coming more into notice in Alaska each year. There are vast areas suitable for this kind of washing. Mining with dredges and steam shovels is likewise carried on. Smelters for the mining of copper are in operation upon Prince of Wales Island and in the Copper River region. The yield of copper on the properties of these places is undoubtedly destined to influence the copper market of the world. Lead and silver are mined in connection with other ores. Platinum, gypsum, and marble have been located, and mines and manufacturing plants are being organized for their development.

Lead, zinc, and iron are found throughout southeast Alaska, but they have not yet been extensively mined, owing to want of transportation facilities, which is a great drawback to all mining enterprises. Asbestos is found on the mainland, Beadfield canal, also in Kuperanoff Island. Graphite is found in large quantities near Nome, and jade in limited quantities in the Cape York mining district. Uranium is found in small quantities in Baranoff Island. Platinum is found in small quantities in Cape York district.

Stream tin has been found on several streams on Cape Prince of Wales, in the York mining district, and several companies have, for the past two years, been engaged in its exploitation, but very recently ledges of quartz tin ores have been located between Cape Prince of Wales and Shismaneff Inlet and on Cape Mountain, which, it is believed, will prove to be of enormous value. One claim in this region has recently been bonded for $5,000,000, and large tin-mining companies have been formed for the development of the tin mines in this region. It is predicted that these quartz tin mines will soon supply tin for the whole United States.

COAL.

Coal is found in every section of the Territory. In variety it comprises lignite, anthracite, bituminous, and cannel coal, and the principal mines so far discovered are located on navigable streams and near the tide water, thus enabling this industry to be placed on a favorable footing as a competitor with the coal fields of British Columbia.

The best coals of the Territory are the seams of semianthracite found near Controller Bay. Analysis shows them to be far superior to any others in the district, including the best of the British Columbia coals.

The following statements as to the coal fields of Alaska appear in the reports of the Geological Survey for the years 1902–1904.

"Developments have been entirely along waterways, where the coal could be handled cheaply and receive the benefit of water transportation. The southeastern and southwestern Alaska coal fields, as far as developed, are on tidewater along a coast line affording good harbors, which are open to navigation the entire year. They can be mined comparatively cheaply, and while many of them are not equal in quality to the other Pacific coast coals, yet they have found a ready market for local steamboat and domestic use. No developments have been made of the higher-grade coals, which are known to occur in southern Alaska, except in a few localities. The development of the Yukon coals is dependent entirely on their finding a local market. As long as the placer mines of the Yukon basin continue to make a large annual output of gold, these Yukon coal mines will find ready sale for their products.

"The known coal fields of Alaska include about 16,000 square miles, but, as less than one-fifth of the territory has been surveyed, it is fair to assume that they actually embrace several times this area. Geographically, the coal fields fall into four groups—those of the Pacific seaboard, those of Bering Sea, those lying near the Arctic Ocean, and those of the Yukon basin. In addition to these, there are known to be extensive areas of coal-bearing rocks in the Arctic slope region, as well as in other parts of the interior, but as these have only remote commercial value they need not be here considered.

"The coal fields of the Pacific seaboard, though comparatively small in area, are of importance because of their accessibility, and because they include the highest grade coal yet found in Alaska. There are two distinct types of coal in this province, both probably of Tertiary age. The lignitic coals are the most widely distributed.

"The coal fields of the Yukon basin which are at present accessible fall into two groups. The first includes those of the upper river, which are lignitic and occur in relatively small areas. The second group includes a belt of Cretaceous coal-bearing rocks which have been traced for some 200 miles along the lower Yukon. These latter embrace low-grade bituminous coals, which have been found in seams up to 4 feet in thickness. Though they do not compare in quality with the bituminous coals of the Pacific province, yet they have a prospective value for local use.

"In spite of its extensive coal fields and of the fact that Alaska is probably paying $2,000,000 annually for fuel, coal mining has been almost entirely neglected. The total

output of coal reported to the Survey in 1904 was 694 short tons, and 747 tons in 1903. These figures are probably considerably below the actual production, but the total would not exceed 2,000 tons a year."

PETROLEUM

Petroleum is found in many locations, but this industry is yet undeveloped. Oil of superior quality has been found at Kayak and Cook Inlet.

MARBLE.

Marble promises to become an important product of Alaska. Large quarries are located on Prince of Wales Island throughout an area of 400 acres. Gray marble is found on Ham Island and the mainland contiguous. It is exceptionally hard and stands a test of 10,000 pounds to the square inch.

FISHERIES AND CANNING.

Salmon, halibut, and cod fishing are carried on extensively in the fishing season all along the Pacific coast from the eastern extremity of Alaska to Bristol Bay near the point on the coast where it turns northward. Some 80 canneries are established along this coast, one of the principal ones being on Kodiak Island. From 15,000 to 20,000 people are employed in these canneries during the canning season. It is an interesting fact that the rentals paid by the fishing companies to the United States have already paid the United States the amount paid for the Territory several times over. The pack of salmon during the present season will exceed 1,500,000 cases.

FURS.

Great quantities of furs are taken in Alaska, embracing furs of the polar, black, and brown bear; black wolf; white, red, blue, and silver-gray foxes; badger, beaver, sables, and seals. It is known that Alaska has yielded great wealth to this industry, but the extent can not be stated with any certainty, as it has been the policy of the fur trader to conceal his operations, and the conditions of the trade are such that he is able to do so.

STOCK RAISING AND AGRICULTURE.

These industries have been begun on a small scale, but they will undoubtedly become extensive, as Alaska has millions of acres of grasses suitable for stock, and the Department of Agriculture has demonstrated the fact, by experiments, that agriculture is not only possible, but may be profitable in the valleys south of the Yukon River.

The total area of the grass lands of the south Alaska coast approximates 10,000 square miles. Nearly all of this lies between Cook Inlet and Unalaska. Of this total area at least one-half would seem to be capable of utilization. Much of this last is covered with tall and rank grasses, often 6 feet high. The remainder, lying in more exposed situations or at higher elevation, produces grasses that are too short for hay cutting, but furnish splendid pasturage.

Cattle, sheep, and Angora goats have been introduced, and it is believed it is only necsesary to select the breeds which are best adapted to this region to make stock raising a success.

Experiment stations have been established by the Department of Agriculture at Sitka, Kenai, and Copper Center, and Mr. C. C. Georgeson, who has been in charge of these stations for a number of years, claims to have demonstrated by successful experiments that cereals, vegetables, and fruits in great variety may be grown successfully in southern Alaska, and that thousands of acres in that region are suitable for farming.

TRANSPORTATION.

The greatest need of Alaska is railroads. Its harbors are visited by the vessels of great steamship companies; steamers ply the waters of the great Yukon, affording facilities for transportation, both for passengers and freight, and thousands of tourists avail themselves of the facilities afforded, and the number of such pleasure seekers is increasing every year. Alaska is beginning to be known as "the Switzerland of America."

Meanwhile, facilities for transportation into the interior by railroads continue utterly inadequate. The White Pass and Yukon Railroad is the longest at present, but there are only 30 miles of this line within the limits of Alaska, the other 80 miles running through the Canadian Northwest Territory, and the line is owned and controlled by Canadian interests. This line forms a connecting link between the Pacific Ocean and the head of navigation of the Yukon River.

The second railroad was built by a mining company and connects Nome with the rich mining creeks of that section. It is only 8 miles long and is a narrow-gauge road, but it has paid

for itself many times over, being invaluable to the miner, enabling him to transport machinery to the mines. In 1903, 12 miles of railroad were built up Solomon River on the Seward Peninsula, and it is proposed to continue this road to Council City and the rich Ophir mining district, giving that region communication with tide water. This road will open and develop a wonderfully rich region. A railroad has been projected from Valdez, which lies at the head of one of the largest harbors in the world, to Eagle City, on the Yukon River, and work upon it has begun. This road, when completed, will traverse the rich Copper and Tanana valleys and penetrate the territory of Fortymile River, through a country not only rich in minerals, but in the very heart of the richest agricultural lands.

A railroad is now being built from Seward, on Resurrection Bay, to a point on the Yukon River near the mouth of the Tanana River. This road will likewise open up rich mining and farming lands. It is planned to have 100 miles of this road ready for traffic within another year. At Kayak a coal company has built 25 miles of railroad, which makes possible the development of rich anthracite coal mines, connecting them with deep tide water. In this connection it should be mentioned that the Government has constructed telegraph lines reaching from Seattle to Nome, the last section of this line having been recently completed. Following is a list of the railroads in Alaska which have been completed or begun:

The White Pass and Yukon Railroad, 140 miles in operation; the Nome Arctic Railroad, 12 miles completed; the Wild Goose Railroad, 8 miles from Council City; Council City and Solomon Railroad, 11 miles completed; the Tanana Mines Railroad, new road under construction; the Alaska Central Railroad, 25 miles completed; Copper Mountain and Northwestern Railroad, surveys completed.

FORESTRY.

The southeastern part of Alaska, extending as far west as Prince William Sound, is heavily timbered; in fact, it is so heavily timbered (in consequence of the fact of the Japan currents and the rainfall) that the forests of southeast Alaska are like a tropical jungle, and are only penetrated when roads are cut through them. The timber consists mainly of spruce, hemlock, red cedar, birch, and yellow cedar. A number of sawmills have been located in this region. Owing to the lack of transportation, this industry is not extensive. It bids fair to be, in time, a great and profitable business.

GOVERNMENT.

While Alaska is a territorial possession of the United States, it has not yet been accorded a Territorial form of government. Its correct designation is "the district of Alaska." A governor and judges and marshals, United States attorneys, collector of customs, and surveyor-general are appointed by the President. The governor is required to make an annual report to the Secretary of the Interior, and by means of this report, and by reports from the military and other departments located in Alaska, the President and Congress are kept fully advised as to the development of the district.

CITIES AND TOWNS.

Ketchikan.—Ketchikan is the first United States customs port as you enter Alaska from the south. The town is incorporated, hence has its own city officers, its own courts, and its own schools. Ketchikan is electrically lighted and has a splendid water system. There is a sawmill and also a large salmon cannery there. It is the distributing center for the Ketchikan mining district. Like other incorporated towns, it has a chamber of commerce.

Wrangell.—Wrangell is a beautiful town, situated on Etolin Bay, about 750 miles from Seattle, on the direct steamship line; has a moderate climate, never reaching above 70° in summer nor going below zero in winter. The main industries are salmon, halibut, and herring fisheries, and the finest forests of this section of Alaska are contiguous. Six miles from Wrangell is the mouth of the Stikine River, which is navigable 150 miles. Fifty miles upstream, however, the boundary line between the United States and Canada is crossed. The Wrangell mining district is noted for its rich quartz-bearing ores, principally gold and copper. The mainland east of Wrangell is rich in silver and lead ores. This district also boasts of no less than five distinct varieties of marble, besides the finest deposits of bituminous coal. Near Wrangell the largest cauliflower grown in Alaska was produced, and it weighed 10½ pounds, and the largest Irish potatoes, 7 pounds and 3 ounces. Most of the fresh halibut used in the United States are caught in the Wrangell narrows. The city is incorporated.

Sitka.—Sitka, the capital of Alaska, is located on Baranoff Island, along the southeastern coast of Alaska. It was founded by Governor Baranoff, a Russian explorer, in 1799, and is the oldest town in Alaska. The town is noted for its beauty, and boasts of many historic places of interest. The climate at Sitka is remarkably mild. Here also may be found the famous hot springs, whose waters are noted for their wonderful medicinal properties.

Juneau.—Juneau, the metropolis of southeastern Alaska, is located at the headwaters of the Gastineau channel, and is one of the oldest cities in Alaska. It is a mail-distributing center for all points westward, and forms a base of supplies for many of the extensive mining operations in that vicinity. It is a town supported largely by the mines, but here also may be found various industries. The school system of Juneau, like that of several other towns in Alaska, compares favorably with the larger cities along the coast. Large wholesale and retail establishments for the handling of all manner of supplies are located here. One of the public buildings of Juneau, recently completed by the United States Government, cost $60,000. The city is incorporated.

Douglas.—Douglas City is an incorporated city, located on Douglas Island, immediately adjoining Treadwell, with a population of about 1,500. The city is supported largely by the Treadwell mines, furnishing homes for many of the miners and their families. Here is to be found an excellent school system, also a well-organized fire department and various other improvements. Juneau, Douglas, and Treadwell are connected by telephone system, also by a ferry operated hourly.

Treadwell.—Treadwell is located on Douglas Island, across the channel from Juneau; is an incorporated town, with a population of about 1,500. Here are located the famous Treadwell gold mines, the largest low-grade gold mines in the world. The town is strictly a mining town. The population is confined to the employees of the mines. Here are located large machine and boiler shops, car shops, foundry, sawmill, and all other industries which help to make and equip a large mining plant. Treadwell has an excellent water system, electric-light plant, and public school.

Seward City.—Seward City, near Berners Bay, located between Juneau and Skagway, is a new mining town, which promises to rival some of the older towns along the coast because of the richness of the low-grade gold ledges recently uncovered in that vicinity and the great amount of ore in sight.

Skagway.—Skagway, situated at the head of Lynn Canal, is the entrepôt for the Yukon and interior regions of Alaska and the southern terminus of the Yukon and White Pass Railroad.

Yakutat.—This town is located on the west shore of the Gulf of Alaska and is noted for the Yakutat baskets woven there by the natives. It contains a sawmill and a cannery, and is a trading station.

Kayak.—Has a harbor and is the terminus of a railroad about completed to the anthracite coal fields, 25 miles distant. This field has three veins, 16, 8, and 5 feet thick, respectively. Extensive oil fields have recently been developed and the refinement shows a high grade of oil with a paraffine base.

Catalla.—Coal and petroleum are found in this town, which is located on the north shore of the Gulf of Alaska.

Petersburg.—Which is a fishing station for halibut, is located in the southeastern portion of Alaska near Wrangel.

Valdez.—Located on the southern coast of Alaska, near the mouth of the Copper River, is a seaport town, and the proposed terminal of the Valdez and Eagle City Railroad. As a seaport town it has a harbor which General Greeley says will accommodate the navies of the world. It is open at all seasons of the year, and as a railroad terminal Valdez will some day undoubtedly become a town of the greatest importance. It is incorporated.

Seward.—Is located at the head of Resurrection Bay and is the terminal of the Alaskan Central Railroad, a projected railroad extending from Seward to Rampart, opening up an extensive agricultural district. Seward, like Valdez, is a seaport town, with a harbor open at all seasons of the year. The Alaska Central Railroad is now in course of construction and a portion of the road is already in operation.

Seldovia.—This is an outfitting point for big game, moose, caribou, mountain sheep, etc. It is located near the mouth of Cook Inlet.

Homer.—A coaling station and trading post, is located on the east side of Cook Inlet.

Kenai.—Is on the east side of Kenai Lake. It is a trading station and has a cannery.

Tyoonok.—This is a trading station and outfitting post located on the west side of Cook Inlet.

Hope.—A mining camp on the east side of Cook Inlet, near Turnagain Bay.

Sunrise.—A mining camp on the Turnagain Bay.

Iliamna.—This town is the terminus of the overland route from Nome and contains copper mines.

Kodiak.—Situated on Kodiak Island, west of the Gulf of Alaska. The climate of the island is mild and cattle have been successfully raised there. Vegetables are grown in abundance. It is an important trading post. One of the earliest Russian settlements was located here.

Chignik.—Is an old trading post on one of the Aleutian Islands. Several canneries are located here.

Sand Point.—This town is an old trading post, located on Popof Island, one of the Aleutian group. Beach gold is found here.

Unga Island.—There is a gold quartz mine at this station, which is one of the Aleutian group of islands.

Dutch Harbor.—Is on the north side of Unalaska Island and is a coaling station and trading post.

Unalaska.—This is an old trading town and is noted for the mildness of its temperature. It is located on Unalaska Island, one of the largest of the Aleutian group.

Nushagak.—Near the mouth of the Nushagak River. It is a fishing station and a native village.

Kolmakof.—This is a trading post on the Kuskokwim River.

St. Michaels.—Is located on an island not far from the mouth of the Yukon River, serving principally as a terminal for the Yukon River steamers, affording also winter quarters for many of the river steamers. Here are also located the large warehouses of the leading trading companies of Alaska. The transfer to ocean steamers is made at this point.

Council City.—Council City is located on the Niukluk and is the center of a rich mining country. The most productive of its many streams for placer gold is Ophir Creek, which is not equaled in its output of gold by any creek of the Seward Peninsula.

Nome.—Nome is the metropolis of extreme western Alaska and the Seward Peninsula. Placer gold was first discovered here on Anvil Creek in 1898. During the summer of 1899 pay dirt was struck on the beach contiguous to Nome, and for sixteen months along the Bering Sea coast thousands worked the auriferous gold-bearing sands. In the spring of 1900 such a stampede was never known. Now Nome has passed her boom days and is a good, solid, substantial mining center, with interests that radiate to every part of the Seward Peninsula. The city is situated on the coast about 12 miles northeast of the projection of land marked on the maps as Cape Nome, and is the distributing point for the outlying districts. A municipal form of government prevails and a chamber of commerce recently formed has done commendable work in the advancement of the country's interests. That Nome is not the entirely irreligious town it has been depicted is evidenced by the fact that the three churches which it boasts are attended by large crowds each Sabbath. There are several good hotels in Nome which are equipped with most of the modern and up-to-date contrivances and furnishings. The main streets of the city are planked with 3-inch lumber; there is an electric lighting plant, telephone system, many well stocked and up-to-date stores where every commodity civilization affords can be obtained at a slight advance on Pacific coast prices. There is a railroad system, three newspapers, three banks, and a number of varied business enterprises. During the summer the population of Nome numbers about 15,000 and in winter about 2,500. Good schools and an excellent fire department service are maintained by the city government. The city is incorporated.

Solomon.—Is the southern terminus of the Council City and Solomon River Railroad.

Teller City.—Is located on Grantly Harbor and is the center of a growing placer district.

Cape Prince of Wales.—Is the most westerly point in Alaska and is in the Cape York mining district, where placer gold and stream tin are found in limited quantities.

Candle.—A mining camp on the Kiwalik River in Seward Peninsula.

Kiwalik.—This town supplies the Candle Creek section of country in Seward Peninsula.

Deering.—Is at the mouth of the Inmachuk River, which flows into Kotzebue Sound. It is the most northern town on the Seward Peninsula and is the supply point of rich placer deposits.

Point Barrow.—Is the most northern point in Alaska, and here is located the most northern postoffice and signal station in the world. It is a United States Government weather observatory and whaler relief station.

Eagle City.—Located on the Yukon River and the first town in United States territory in coming down the river; contiguous to Seventy Mile and American River mining country; is terminus of the projected Valdez and Yukon Railroad. Here is located Fort Egbert, a 3-company United States post, where commodious barracks have been erected. The town is incorporated.

Fairbanks.—A large mining camp 12 miles from the Tanana River; is the supply point for the rich Tanana mining district. Chena is the port of entry and will probably displace Fairbanks as the mining town of this district. The present outlook for this country is very encouraging. The town is incorporated.

Chena.—Has a population of almost 1,000, with one newspaper and one bank. It is a good live town and destined to grow. It is located on the Tanana River.

Circle City.—Circle City is the supply point for the rich mining camp of Birch Creek and its tributaries.

Rampart.—Is a mining town and furnishes supplies for a large region of country. It contains extensive hydraulic works and has a population of about 300. It is located on the Yukon River north of its junction with the Tanana.

Old Fort Yukon.—Is where the mighty river touches the Arctic Circle and turns its course southwest on its way to the sea. Here the midnight sun is visible and the river is 10 miles wide. Roses and berries grow in great abundance and anyone inclined to romance can gather flowers and berries by the midnight sun.

Bettles.—Bettles is on the Koyukuk River and at the head of navigation. Fifty miles northward is the prosperous mining camp of Cold Foot.

ALASKA ORGANIZATIONS, SOCIAL AND FRATERNAL.

Arctic Brotherhood, branches established at various points throughout Alaska and the Yukon territory; Alaska Academy of Sciences Nome; Society of Ethnology, Sitka; Kegoayah Kogga (Aurora Club), Nome; Alaska Women's Auxiliaries of Sitka, Skagway, Juneau, Douglas, Treadwell, Wrangell, and Ketchikan; Yukon Order of Pioneers; Alaska Club, headquarters, Seattle, Wash.

ALASKAN PRESS.

News, Nome; Nugget, Nome; Gold Digger, Nome; News, Council City; Forum, Rampart; Yukon Valley News, Rampart; News, Fairbanks; News, Teller; Gateway, Seward; News, Valdez; The Cablegram, Sitka; Alaskan, Sitka; Alaskan, Skagway; Dispatch, Juneau; Record Miner, Juneau; Transcript, Juneau; Douglas Island News, Douglas; Sentinel, Wrangel; Mining Journal, Ketchikan.

ACKNOWLEDGMENTS.

In preparing this catalogue of the Alaska exhibit at the Lewis and Clark Centennial Exposition, in compliance with instructions from the Department of the Interior, I have availed myself of the assistance of citizens of Alaska who are personally acquainted with that region, to whom I wish to make acknowledgment.

In preparing statements as to the location and characteristics of the cities and towns of Alaska and as to the industries of Alaska, I am under obligations for matter furnished by Prof. William A. Kelly, for many years superintendent of schools in Alaska, now executive commissioner of the Alaska exhibit. I am likewise indebted to Mr. J. J. Underwood, representative of the Nome Chamber of Commerce, who is in charge of the gold exhibit from Nome, Alaska, at the Alaska exhibit.

In this connection I desire to express appreciation for the valuable services rendered by the attendants at the Alaska exhibit, Mr. Harry Pidgeon, Mr. L. L. Bales, and Mr. James Fish, all of whom are Alaskans, and who have, during the period of the exposition, very greatly contributed to the educational influence of the exhibit by their intelligent explanations to visitors and by the information they have imparted relating to the geography, products, and resources of Alaska.

JOSEPH B. MARVIN,
Special Agent for the Alaska Exhibit.

CLASSIFIED LIST OF EXHIBITS.

MAPS OF ALASKA.

Large relief map of Alaska, modeled from surveys by the United States Geological Survey. Sent by the Department of the Interior, Washington, D. C.

Progress map of Alaska, by division of Alaskan mineral resources. Areas of geologic and topographic surveys, 1898, 1903.

Large comparative map, showing size of Alaska as compared with United States.

Large map of Alaska.

Topographic map of the northern portion of Seward Peninsula.

Topographic map of Nome region.

Map showing explorations in Alaska, portions of Tanana and White rivers.

Geological reconnaissance map of northern Alaska.

Topographical map of Chitina and Copper River regions.

Large geological survey map of the United States.

Map of portions of Koyukuk and Chandler rivers, with geological notes.

Reconnaissance map of northeastern portion of Seward Peninsula.

Topographical map of headwaters of Copper and Tanana rivers.

Reconnaissance map of Fort Yukon to Kotzebue Sound.

Geological survey map of explorations in Alaska, Mount McKinley region.

Military expedition map of Prince William Sound.

Topographic map of Copper and Chistochina River regions.

Map showing explorations in Alaska, Lower Kuskokwim River and Kanektok River.

Reconnaissance map of Fairbanks and Birch Creek districts.

Map showing explorations in Alaska, Middle Kuskokwim River, and part of Bristol Bay.

Topographic reconnaissance map of northern Alaska.

Map showing military expedition in Copper River and adjacent territory.

Map showing explorations in Alaska, Sushitna River and adjacent territory.

Map of Wrangell district, Alaska.

TREADWELL MINE EXHIBIT.

One of the most impressive and significant exhibits consists of a gilded cube about 3 feet in diameter, representing the size of a block of gold worth $7,200,000, which is the amount paid by the United States to Russia for Alaska, and beside it, inclosed in a brass railing, a gilded pyramid of blocks representing the amount of gold taken each year since 1882 from the Treadwell mine in Alaska, aggregating $21,800,000, a sum which is three times the amount paid for Alaska, taken from one mine.

ORES, ETC.

Copper ore.—The copper ore exhibit is very large, filling a glass case 75 feet long and 5 feet high. These ores were classified by an expert mineralogist from the United States Geological Survey, and they include specimens from nearly all the mines in Alaska. Following is a list of the mines from which the ores were collected:

Copper Queen claim, Prince of Wales Island; Kaykan Company's mine, Prince of Wales Island; Yellow Jacket claim, Prince of Wales Island; Mount Andrew mine, Prince of Wales Island; Province mine, Prince of Wales Island; Ellamar mines, Virgin Bay; Ready Bullion Copper Company's mine, Cook Inlet; Bonanza mine, Latouche Island, Prince William Sound; Old Glory lode, Galena Bay, Prince William Sound; Bourke, Hemple & Steele mines, Landlock Bay, Prince William Sound; Niblack mine, Prince of Wales Island; McEwen mine, Cleveland Peninsula; Lost Boat mine, Gravina Island; Portage Mountain Mining Company, Kupreanoff Island; Red Wing mine, Copper City, Alaska; Alaska Copper Company's property, Prince of Wales Island; Kasaan Bay Mining Company, Prince of Wales Island; Mamie claim, Prince of Wales Island; Grove & Dickey mine, Landlock Bay, Prince William Sound; McNaughton mine, Galena Bay, Prince William Sound; Vesuvius group of mines, Galena Bay, Prince William Sound; Spongberg & Simpson, Knights Island; Kennicott mines, Copper River; Gelinean & Bell, Copper River district; Steinmetz, Eagen & Putz, Landlock Bay, Prince William Sound; Nicolai mine, Chitina River district; Mullen group mines, Kotsina River district; Bonanza mine, Chitina River; Gelinean & Bell, Kotsina River district; Bonanza mine, Latouche Island; Poot & Gelinean, Galena Bay, Prince William Sound; Bourke, Hemple & Steele, Landlock Bay, Prince William Sound; Blue Bird claim, Kotsina River district; Mountain Boy mine, Sheep Creek, Kotsina River district; Keefe, Rystrom & Dolan, Landlock Bay, Prince William Sound; Suessdorf & Leslie, headwaters of Copper River; Putz & Steinmetz, Landlock Bay, Prince William Sound; Fidalgo Bay, Prince William Sound; Charles Rua, Boulder Bay, Prince William Sound; Rystrom, Dolan & Keefe, Landlock Bay, Prince William Sound; Keystone claim, Landlock Bay, Prince William Sound; Hugh Murray, Landlock Bay, Prince William Sound; Ellamar mine, Ellamar, Alaska; Elliott & Hubbard Mining Company, Elliott Creek, Alaska; C. G. Debney, Solomon Basin, Valdez Bay; Glacier Island, Prince William Sound; Alaska Commercial Company, Unga Island; Cornell mine, Kodiak Island; Thomas Blakney, Copper River; Chitita Development Company, Nizina River district; A. B. Iles, Copper River; Apollo mine, Unga Island, southeast Alaska; Cornell, Uyak Bay, Kodiak Island; Brady Bullion mines, near Seward; O. E. Wheeler, Copper Mountain, Kougorok district; Iron Creek, Kougorok district.

Native copper.—Chitta Creek, Nizina, Copper River district; McCarthy Creek, Chitina River district; Dan Creek, Nizina River district; Chitita Development Company, Rex Gulch, Nizina River district; copper and silver ore, Ears Mountain, Seward Peninsula.

Nickel ore.—Cobbs Smith & Frasee, Miners Bay, Prince William Sound.

Antimony.—Nizina, Copper River district.

Galena.—Coronation Island; Jack Wallace's claim, Revillagigedo Island; Mammoth mine, Revillagigedo Island; Ears Mountain, Seward Peninsula; W. Ripstein, Landlock Bay, Prince William Sound; James Simpson, near Slate Creek, Copper River, Kougorok district.

Quartz-tin ore.—Ears Mountain, Seward Peninsula; O. Lowell, Cape Prince of Wales; Seward Tin Mining Company, Port Clarence mining district; John E. Burton, Cape Prince of Wales; Crim, Randt & O'Brien's mine, Seward Peninsula.

Stream tin.—American Tin Mining Company, Buck Creek, near Cape Prince of Wales; P. Esch, Cape Prince of Wales; Alaska Tin Mining Company, near Cape Prince of Wales; Miss Emma Steiner, Buck Creek, Cape Prince of Wales.

Cassiterite ore.—Seward Peninsula, Cape Prince of Wales; Crim, Randt & O'Brien, Lost River ledges.

Pig tin.—Smelted from stream tin, American Tin Mining Company.

Metallic tin.—Extracted from stream tin, Miss E. Steiner.

Tourmaline.—Ears Mountain, Seward Peninsula.

Garnets.—Near Wrangell, Alaska.

Ruby sand.—Nome Beach.

Jade.—Seward Peninsula.

Conglomerate.—Ears Mountain, Seward Peninsula.

Gold, gold nuggets, and dust.—A gold brick from Nome, Alaska, loaned by the Miners and Merchants' Bank, weight, 88 pounds, 6 ounces, value, $19,355.77; gold nuggets from Dorie Creek; gold dust from Nos. 11 and 12, Eureka; gold dust from Seattle Junior bench claim; gold dust from Skookum bench; gold dust from Dorie Creek; gold dust from No. 4 Glen Gulch; gold dust from What-Cheer Bar, Pioneer Creek, Rampart district, owned by What-Cheer Bar Company, value, $70; gold specimens from Nos. 11 and 12, Eureka, Rampart district, owned by H. F. Thumm, collection valued at $1,800; one gold nugget, value, $3,276, weight, 182 ounces; one gold nugget, valued at over $2,000; one gold nugget, valued at $1,994, from Anvil Creek, Nome, Alaska, owned by Pioneer Mining Company; 1 ounce gold dust from Kasson Creek, Nome district, owned by O. E. Olebaum; 2 ounces gold dust from Nugget Gulch, Nome district, owned by Nome Chamber of Commerce; 2 ounces gold dust from Anvil Creek, Nome district, owned by Nome Chamber of Commerce; 7 ounces gold nuggets from Candle Creek, Good Hope district, owned by Nome Chamber of Commerce; 2 ounces gold dust from Portland bench claim, Nome district, owned by Nome Chamber of Commerce; 2 ounces gold dust from Lost Creek, Nome district, owned by Nome Chamber of Commerce; 1 ounce gold dust from Dry Creek, Nome district, owned by Denhart, Niebuhr & Nixon, Nome; 2 ounces gold dust from Ophir Creek, Council district, owned by Nome Chamber of Commerce; 2 ounces gold dust from Oregon Creek, Nome district, owned by Nome Chamber of Commerce; 2 ounces gold dust from Ancient Beach streak, Nome district, owned by Nome Chamber of Commerce; 2 ounces gold dust from Solomon River, Nome district, owned by Nome Chamber of Commerce; gold nuggets and dust, valued at $1,224, from Forty Mile district, owned by J. J. Cotter, Portland, Oreg.; rich samples of gravel from Portland bench claim, Nome district, owned by Nome Chamber of Commerce; 3 ounces gold nuggets from Dry Creek, Nome district, owned by Nome Chamber of Commerce; 2 ounces gold dust from Boulder Creek, Nome district, owned by Nome Chamber of Commerce.

Jewelry.—One gold nugget watch chain; one gold nugget bracelet; one gold nugget child's bracelet; one shirt-waist set; three scarf pins; one brooch; one heart-shaped pendant, made of polished mastodon ivory, surmounted by gold nuggets. All the above loaned by A. J. Muller, Nome, Alaska.

Gold ore.—Otto Miller's claim, Prince of Wales Island; Chilcoot mine, Prince of Wales Island; Sunday Sun claim, Prince of Wales Island; Elizabeth mine, Prince of Wales Island; Poor Man mine, Prince of Wales Island; Commander mine, Prince of Wales Island; Lavina claim, Prince of Wales Island; Boston claims, Juneau, Alaska; Nugget mine, Prince of Wales Island; Golden Fleece Claim, Prince of Wales Island; Berners Bay, Alaska; Cracker Jack mine, Prince of Wales Island; Excelsior mine, Prince of Wales Island; Valparaiso mine, Prince of Wales Island; Beauty claim, Prince of Wales Island; Jumbo claim, Prince of Wales Island; Peterson's claim, Prince of Wales Island; Claim No. 1, W. G. M. Company, Gravina Island; Apex mine, Gravina Island; Freeman property, Prince of Wales Island; San Francisco mine, Gravina Island; Jack Kimen's claim, Revillagigedo Island; Colonel Strunbar's property, Ketchikan, Alaska; Sealevel mine, Revillagigedo Island; Keystone mine, Revillagigedo Island; Laskawonda claims, Revillagigedo Island; Hattie Camp, Woedsky Island; Alaska Snettisham Gold Mining Company, Snettisham, Alaska; Pearce claims, Admiralty Island; Ebner Mining Company, Juneau, Alaska; Perseverance Mining Company, Silver Bow Basin; Eagle River Mining Company, near Juneau, Alaska. Treadwell mines, Douglas Island; Fawn claim, Prince of Wales Island; Elephant's Nose mine, near Wrangell; Jualen Mines Company, Berners Bay; Devil Club claims, near Juneau; Ruby Quartz claim, Bluff City, Alaska; Bullion Group of claims, near Juneau; Alaska Treasure Consolidated Mines Company, Douglas Island.

Impure graphite.—P. Esch, Higluaik Mountains, near Nome.

Graphite pebble.—P. Esch, Higluaik Mountains, near Nome.

Slate wall.—Hunah quartz mine, Seward Peninsula.

Cinnebar ore.—H. J. Deiter, Kuskokwim River.

Pay dirt—Nome district.—Juanita and Lucky Two bench claims, Dry Creek; Denhart, Niebuhr & Nixon, bench claim on Dry Creek; Wild Goose Mining Company, Lena claim, Nakkila Gulch; Southword & Kettelson, specimen gulch; Kelly & Ginnivan, Target bench claim, ancient beach line; J. C. Brown, Claim No. 1, Little Creek; Pioneer Mining Company, Anvil Creek bench; Pioneer Mining Company, Portland bench, on Little Creek; Corwin Company, head of Moonlight Creek.

Pay gravel.—Johnson Bros., Independence bench claim.

Portion of bedrock.—Pioneer Mining Company, Portland bench.

Marble.—Section of marble from Ham Island, showing compression test of 10,000 pounds to the square inch, W. F. Woodbridge, Wrangell, Alaska; marble from Fort Wrangell, showing compression test of 6 tons to the square inch, donated by E. Miller; monuments, pillars, and slabs from the American Coral Marble Company, Prince of Wales Island.

Talc.—Talc schist, from Talcum King mine, Council City, Alaska, owned by Froebese & McDonald; Crude magnesium talc, from Talcum King mine, Council City, Alaska; Mag-

nesium talc from Talcum King mine, Council City, Alaska; panels in talc and picture of talc mine, painted in talc by F. E. Froebese.

Coal.—Lignite coal from Kugruk River district, Chicago Creek coal mine; Semi-anthracite coal from Controller Bay, Alaska Anthracite Coal Company.

Peat.—Jorgen E. Berg, Wrangell, Alaska.

Mineral water.—Zarembo Mineral Springs Company, incorporated, Zarembo Island, Alaska.

Oils and guano.—Guano, from the Alaska Oil and Guano Company, Killisnoo, Admiralty Island, Carl Spuhn, manager; crude and refined petroleum, from Kayak, from the flowing well owned by the company locally known as "The English Company;" refined petroleum, from Kayak, V. M. and P. naphtha, gravity, 60½° Beaumé; redistilled light naphtha, gravity, 75° Beaumé; crude naphtha, gravity, 64.9° Beaumé; crude gasoline, 66–63½° gravity, average gravity, 64.8°; seepage oil, from Cold Bay, Alaska; paraffin gum, as found in the open, Cold Bay, loaned by J. H. Costello, Cook Inlet; crude petroleum, from Cook Inlet; crude scale wax, from Alaska, melting point, 123½°; crude red oil, gravity 23.5°, flash 335; crude light paraffin oil, gravity, 26.7°, flash, 330°; illuminating oil, fire test 110° F., gravity, 42 1° Beaumé.

Forestry.—Section of spruce log from Montague Island, Prince William Sound; section of tree showing blaze made ninety-seven years ago; stairway made of red and yellow cedar from Alaska.

PAINTINGS AND PHOTOGRAPHS.

Photographs of President Theodore Roosevelt; Hon. E. A. Hitchcock, Secretary of the Interior; Hon. Thomas Ryan, First Assistant Secretary of the Interior; Governor John G. Brady, acting executive commissioner Alaskan exhibit.

Life-sized portrait of Peter the Great, loaned by Mr. L. Nabokoff, found in Alaska at the time of the purchase by the United States. A very rare picture.

Framed pictures, loaned by The White Pass and Yukon Route, "Totem Pole route," Pacific Coast Steamship Company.

Paintings by Theodore J. Richardson, "Netley Corners," Minneapolis, Minn.: Scenes of Alaska; Native Interior; Old Russian Trading Post; Left by the Tide; Switzerland in Alaska; Chilkat Range from Skagway; Old Sitka; Totems at Fort Wrangell; Deserted Village, Kasaan; Taku Glacier; Muir Glacier; St. Elias Alps; Beach at Sitka; Huge Berg, Taku; Warm Afternoon at Sitka; Way to Indian River; End Section of Muir; Russian Block House; Old Russian Market; Cloudy Morning; Silver Bay; End of Native Village; Covered Canoes; Out in the Mist; Blue Berg—Channel; Section Braking; Beached in the Rain; Old Sitka; Silvery Morning; Muir from Mount Wright; Icebergs; Marble Berg; Golden Glow; Glacier Bay at 11 P. M.; Baronoff Mountains; Windom Glacier; Snap Shots; Phantom Bergs; Spokane and Ice Front; Bark Hut; Drying Skins; End of Taku; Pink Twilight; After Sunset; Evening; Near Killisnoo; Taku Ice.

Paintings of Alaska scenery by Mrs. Rowena Nichols Leinss: A scene in Wrangell Narrows; Scene in Kell Bay (Cannery and Foliage Mountain); The Artist on the Headwater of the Yukon (Tent, Self, Dog, and Pupil, Jas. When); Placer Mining.

Photographs loaned by the Women's Auxiliary of Skagway: Keelar, Money King of Alaska; Episcopalian Church; Interior of Church; Electric Light Plant; R. R. Shops; Reservoir; Skagway; Mount Dewey; Dewey Falls.

Paintings loaned by the Women's Auxiliary of Inman: Mount Edgcomb (water color), by Mrs. Kate Terrell; Greek Church (water color), by Mrs. Kate Terrell; Totems at Wrangell (water color), by Mrs. Kate Terrell; Shady Bend (water color), by Mrs. J. P. Jorgensen; Dick Harris (oil), by C. Krogh; Joe Juneau (oil), by C. Krogh; A Spruce Tree Bow Knot; Sea Eggs.

Photographs from Women's Auxiliary of Skagway: Garden Dahlias; Flower Garden; Tea Roses; Sideboard, Interior; Skagway River, looking south; Falls, near Skagway; Flowers; Home and Garden; Skagway River; Dining Room; Parlor; Hedge of Sweet Pines; Residence; Interior of Residence.

Oil paintings loaned by Mrs. E. Rund: Alaskan Violets; Alaskan Marsh Marigolds; Alaskan Scene near Haines, Alaska.

Photographs loaned by the Women's Auxiliary of Skagway: Picture of Grandchildren of Mr. and Mrs. Broemser; Two Pictures of Baby Rudd, six months old; Henry Dedman; Lester Moyer; Home of Mrs. Webster; Tony Deterio.

Photographs of Sitka, Alaska: Totem poles at Indian River; Fourth of July at Sitka; Interior of W. R. Mills's Home; Governor Brady's Home and Children; Miss Patton's Exhibit of Children's Agricultural Efforts; Indian River Point; Interior Industrial Training Work Shop; Interior Industrial Training Shoe Shop; Interior Industrial Training School; Members of the Alaska Band; Episcopal Church; Interior of Greek Church and Exterior Greek Church; Interior B. Hurst's Store; George Barrons's Home; Vista Indian River; Walk, Indian River; Raft of Logs; Russian Orphanage; Sleighing Party; Native Village; The Common—Marine Barracks, Officers' Quarters; Tay-he-vouch; Russian

Block House on Fort; Evening; Night; Raft of Wood; Sitka from Russian Cemetery; Fishing; Salmon; Dried Herring Eggs; Main Street of Sitka in Winter.

Paintings by Mrs. Kate Terrell, Juneau, Alaska: Mount Edgcomb (water color); Greek Church at Sitka (water color); Totem Poles at Wrangell (water color); View of Sitka Harbor (water color).

Paintings by Camilla Rund, Skagway, Alaska: Alaska Cowslips; Alaska Wild Violets and old Indian Baskets; Rainbow Mountain, view from Haines, clearing for Fort Seward in foreground.

Oil paintings by A. Burr, Valdez: Valdez Glacier; Columbia Glacier.

Oil paintings by F. C. Montgomery Davis, Juneau: Squaw Selling Curios; Alaska Miners Going Through Dyea Canyon to the Yukon; Alaska Curios.

Paintings and photographs, loaned by E. Cunningham, Seattle, Wash.: Young American Eagles; Young Moose in Forest.

Oil paintings by Miss Florie Hirst, Sitka: Anemonie Japonica and Virginia Creeper; Violets and Cowslips.

Picture of Talc Mine, painted with talc paint, by F. E. Froebese, Council City, Alaska.

Photographs: Cable Ship and Cable Office, loaned by James Fish, Valdez, Alaska.

Photograph of Three-Ton Copper Nugget.

Photograph of Slate Creek and Millers Gulch, loaned by C. H. Kramer, Valdez.

Four pictures of Artic Brotherhood, Valdez, Alaska.

Three photographs of Flower Gardens in Valdez.

One album of Alaskan Views, loaned by Douglas Tancred, Kent, Wash.

One photograph of Camp Comfort.

Framed photograph of first white child born in Valdez, loaned by Mrs. Barrie, Portland, Oreg.

Picture of Valdez Transportation Company stage leaving for Fairbanks, loaned by J. Fish.

Photograph of McKinley Hall, Valdez, Artic Brotherhood Lodge Rooms, from Valdez Chamber of Commerce.

Photograph of Arctic Brotherhood Lodge Rooms, Camp Valdez, No. 10, from Valdez Chamber of Commerce.

Photograph of Slate Creek, Copper River Valley, owned by Debney & Poot, Valdez, Alaska.

Photograph of Salmon Berries, loaned by P. S. Hunt, Valdez, Alaska.

One album of Alaska Views, loaned by P. S. Hunt, Valdez, Alaska.

Photograph of Valdez Hospital, loaned by Miss Dean.

Six photographs showing interior views of residence of S. Blum, Valdez.

Large picture of Inspiration Point on White Pass and Yukon route.

Twenty-one Eskimo pictures, loaned by B. B. Dobbs, New York, N. Y.

Picture of Family Group, loaned by L. L. Bowers, Kodiak, Alaska.

One large framed picture of Camp Nome, No. 9, Arctic Brotherhood, from Nome Chamber of Commerce.

Photographs from Governor John G. Brady, Sitka, Alaska: Old Baranoff, first Russian Governor of Alaska; Salmon, weight 53 pounds; Indians Going to Potlatch; Mountains near Sitka; Herring and Roe; Russian Blockhouse; Summer Scene; Raft of Logs; Indian River, No. 34; Indian River B; Presbyterian Mission Buildings; St. Peters by the Sea; Interior Greek Church; Mr. Barrons's Home; A Picnic Party; Industrial Training School Group; Interior View Sheldon Jackson Museum; Store in Sitka; Room in W. R. Mills's Home; Seven pictures of Point Hope Scenes; Two painted pictures, Scenes of Indian Potlatch.

Copy of first Alaska newspaper.

Photographs from C. L. Andrews, Eagle, Alaska: Shipping on the Yukon; Towing Scows on the Yukon; Winter Mail Team on Yukon; Going Out of Ice in Yukon; Alaskan Game, "Ovis Dalli;" Alaskan Wild Flowers; Alaskan Light and Shadow; An Alaskan Lake; Alaskan Glaciers; Rotary Snow Plow; Summit of Face Mountain; Scows Drifting Down Yukon.

Scenes in Alaska photographed by Harry Pidgeon, Wrangell, Alaska: Stone's Mountain Sheep, "Ovis Stonei" (specimen now in the United States National Museum); White sheep, "Ovis Dalli" (specimen from the Kenai Peninsula); Scene in the Wild Sheep Country; Mountain Goats, photographed from life; Method of Putting a Pack on a Dog; Indian Cache for Storing Meat; Camp at Timber Line, Kenai Peninsula; Sheep Hunters on a Mountain Lake; Scenes on Mountain Sheep Trail; Mountain Sheep Pasture; Forrester Island from Port Zazan; Landing on Forrester Island; Scene on Forrester Island; Rocks on Forrester Island; Cliffs, Forrester Island; Gulls, Forrester Island; Gull's Nest; Young Gull; Tufted Puffin; Nests of the Crested Cormorant; Cape Muzon; Wrangell from the Mountains; Wrangell from the Bay; Gastineau Channel, with Juneau and Treadwell; Government Buildings, Sitka; Old Russian Blockhouse, Sitka; Scene in the Alaskan Woods; Le Conte Glacier

near Wrangell, Alaska; Iceberg, Le Conte Bay; Snow Slide, Stikine River; Stratheona on the Stikine River; Snow Bridge; Natives in Bidarke, Cook Inlet; Russian Church, Sitka; Interior Russian Church at Sitka; Madonna from Russian Church, Sitka; Interior of Russian Church at Kenai; Door in Russian Church at Kenai; Priests of the Russian Church; Indian Grave at Kasaan; Hydah Burial Pole at Kasaan; Totem Over Grave at Wrangell; Eagle Totem, Wrangell; Grave of Dr. Skahowa "Scow," Medicine Man of the Henega Tribe; Witch Doctor's Grave near Klawock; Totems at Tuxekan, Alaska; Totem in Tuxekan (since removed and exhibited at St. Louis and Portland expositions); Indian Burial Ground, Howkan; Old Hydah House, Klinkwan; Interior Totem, Klinkwan; Interior of Ruined House, Klinkwan; Old Hydah House, Howkan; Deserted Village near Wrangell; Kadeshan's Totems, Wrangell; New Metlakatla, or Port Chester; Scene in Kasaan; Totem at Kasaan; Totems of Chief Scowl, Kasaan; Flashlight Photograph of Keke Indians Holding a Ceremonial Dance; Keke Indians Raising a Totem Pole; Thlinget Totem at Wrangell, showing the legend of the creation of the world; Hydah Totem at Klinkwan, showing characters from the legend of the creation of the world.

Sixty-eight photographs illustrating mining and other industries and domestic scenes loaned by J. J. Underwood, Nome, Alaska.

Twenty-three photographs of Alaskan scenery, loaned by A. B. Kinne, Council City, Alaska.

Ten photographs of scenes in Alaska, loaned by Mr. Carlyon, Wrangell, Alaska.

Thirteen photographs of scenes in Alaska, loaned by L. L. Bales, Alaska.

Photograph of Seward, loaned by George Sexton, Seward, Alaska.

TRANSPARENCIES.

Descriptive title list of subjects from which transparencies have been made for use in the Alaska building.

IN COLORS

Tonka Salmon Cannery. One of the principal salmon canneries of the North, located at north entrance of Wrangell Narrows.

The Storm King in Alaska.

Pack Train Transportation. A present day popular method of transportation; awaiting the advent of proper railway facilities. This scene shows the pack train bound for the rich Copper River district.

Hawkins Point, on the White Pass and Yukon Railway, the popular route into the rich Klondike. This is the most expensively constructed railway of its length in the world.

The town of Valdez. The entrepôt of the Copper River district and proposed southern terminus of a railroad 500 miles long to the Yukon River.

Summer trail to the White Pass.

On Nicoli Creek. Miners' cabin on Nicoli Creek below the Nicoli Copper Claim in the Copper River district.

Sitka Harbor.

Camp Comforts. An Alaskan road house, on the Valdez, Yukon Military Trail.

Down the Yukon. The steamer *Louise* towing barges down the second longest river in the world.

Sunset at Nome.

The Great Treadwell Mine. This is one of the greatest gold mines in the world, and is located on Douglas Island, opposite the city of Juneau.

Fort Liscom. This is a military post on Valdez Bay.

Fire Department at Circle City.

Taku Glacier. This is located on Taku Inlet, near Juneau.

At the Bonanza Copper Mines. This is one of the richest copper strikes in Alaska, and is located about 250 miles inland from Valdez.

Sunrise at Nome.

Miles Canyon. This is one of the upper stretches of the Yukon River and was traversed by the thousands on their stampede to the Klondike in 1896 and 1897. Here was lost hundreds of thousands of dollars' worth of merchandise through the inexperience of those trying to navigate these swift waters.

Sluicing on Anvil Creek, Nome. This is one of the richest gold creeks in Alaska, and has made millionaires of many poor prospectors.

IN BLACK AND WHITE.

Pioneers' Home and Garden. This is the home of a contented German pioneer and his wife in Valdez, Dr. A. Von Gunther, who started the first telephone exchange in Valdez in 1901.

On Elliott Creek. A rich copper creek in the Copper River district.

Carrying United States Mail in Alaska. A scene on the United States Mail Trail between Valdez and the Yukon.

Along the Keystone Canyon. This shows a rocky pass alongside the canyon leading into the Copper River country.

Tonsina Crossing. This shows the bridge across the Tonsina River built by the United States Government on the trail to the Yukon.

Interior Alaska Vegetable Garden. The garden in which was raised the finest turnips, beets, onions, cabbages, pease, and vegetables of all kinds; located about 100 miles from the Valdez coast.

A Native Iglo. A typical winter habitation.

Circle City. This shows the news of President McKinley's death reaching Circle City twenty-four days after it had occurred and Seattle newspapers selling at $2 per copy. Since this picture was taken this point has been connected by telegraph with the outside world.

Star City Post-Office on the Yukon.

Ptarmigan and Duck. The result of two hours' shoot near Nome by two men (with a dog).

Crossing Copper River. This is on the route to the rich copper claims of the Copper River district.

Three little Eskimos. This was made at St. Michaels, near the mouth of the Yukon.

Native Industry. This shows some Point Barrow Eskimos making shoes from reindeer hide and cribbage board from walrus tusks.

Camp Fire Yarns. This is a typical prospectors' evening camp in Alaska.

Sunset on the Yukon. This shows a steamer coming up this mighty river to Dawson the capital of the Klondike district.

Swimming the Kotsina. This is one of the branches of the Copper River.

Nome City, July 4, 1900.

SCHOOL EXHIBITS.

Juneau public school.—First, second, third, fourth, fifth, sixth, seventh, and eighth grade and high school work, illustrating their work in literature, grammar, writing, geography, science, physical geography, arithmetic, geometry, drawing, painting, etc.

Valdez public school.—First, second, third, fourth, fifth, sixth, seventh, eighth, and ninth grades, illustrating their work in spelling, drawing, language, arithmetic, writing, geography, algebra, Roman history, etc.

Eagle public school.—First, third, fourth, and ninth grades, illustrating their work in grammar, arithmetic, spelling, pressed wild flowers, etc., very attractively arranged in birch-bark covered books.

Seward public school.—Consisting of pressed wild flowers, banners, drawing, number work, geography, relief maps, and regular school work.

Petersburg Government school.—Consisting of pressed wild flowers, needlework, drawing, etc.

Unalakleet public school.—Consisting of work in drawing.

Sitka Presbyterian Mission Industrial Training School.—One chiffonier, 1 baby dress, 3 pairs shoes, 1 blouse waist, 1 gingham dress for child, 2 shirt waists, 1 white lawn apron, 9 dolls, 1 bead belt, 1 bead chain, 3 pieces showing patchwork, 3 pieces showing darning work, 3 pieces showing different stitches, 1 little apron, 1 pair small mittens, 1 sachet bag, 1 needle cushion, 2 rubber balls with crochet covers, 2 beaded bottles, 1 pair of stockings.

Nome public and high school.—Album containing work of first, second, and third grades; album containing pictures of first and second grade classes, drawings and regular school work; album containing drawings, pictures, and regular class work of third and fourth grades; album containing work in geography, arithmetic, grammar, etc., of fifth and sixth grades; album of high school work, pictures, drawings, paintings, Latin, algebra, physics, botany, etc.; burnt leather covered drawing book of Nome public schools.

Skagway public school.—Photographs of classes, pictures of interest, first, second, third, fourth, fifth, sixth, seventh, and eighth grades, illustrating their work in grammar, language, drawings, pen-and-ink work, arithmetic, etc.

Wrangell public school.—Public school exhibit, kindergarten work, drawing, language, arithmetic, geography, etc.

Sitka public school.—Kindergarten work, first, second, third, fourth, fifth, sixth, seventh, and eighth grades and high school, algebra, grammar, geography, relief maps, drawing, kindergarten and regular school work.

Table and case containing Eskimo school work, Cape Prince of Wales, Dr. Sheldon Jackson School work, mixed government and mission work, as follows: Photograph of Dr. Sheldon Jackson, president Indian school, Sitka, 1888; photographs of Eskimo children, schools, churches, residences; photographs of Point Barrow Presbyterian Mission house; photographs of teachers in Alaska; photographs of Juneau public school, Juneau Presbyterian Mission, Moravian Mission, Episcopal Mission, Baptist Mission, Holy Cross Mission, Swedish

Evangelical Union Mission; public school, Unga (Aleuts); kindergarten work, Sitka, Alaska; free-hand drawing, School No. 1, Sitka, Alaska; grammar, seventh and eighth grades, Sitka, Alaska; arithmetic, third, fourth, fifth, sixth, seventh, and eighth grades, Sitka, Alaska; algebra, first year high school, Sitka, Alaska; Kodiak, Alaska, United States public school, pen-and-ink work, drawings; photographs, Valdez pictures.

CEREALS AND GRASSES.

The commission has been very fortunate in securing for the Alaska exhibit a very fine collection of samples of grain, raised at the experiment stations in Alaska, consisting of grain in the straw and threshed grain, including wheat, rye, barley, and oats. These samples are handsomely displayed, some of the grains and straw being tastefully arranged on the walls, covering a space 10 by 40 feet, and the balance in a pyramid some 10 feet high and 8 feet in diameter. The threshed grains are displayed in glass jars.

These grains and grasses were collected by Prof. C. C. Georgeson, special agent for Alaska in charge of the experimental stations of Alaska for the United States Department of Agriculture. This display of cereals and grasses is one of the most important, instructive, and surprising to visitors of any display in the Alaska building, for it demonstrates the fact that agriculture is possible in Alaska, and that seekers after the treasures of the mines may always feel sure of subsistence. Without agriculture Alaska would be what it is popularly supposed to be, but with agriculture it becomes one of the most attractive and promising regions for development by the pioneer.

The following are some of the varieties grown: Oats, common, grown in Rampart, Alaska; oats, Zhelanni, Kenai; oats, Swedish Select, Haines; oats, Burt's Extra Early, Sitka; oats, White Russian, Sitka; oats, Sixty Days, Sitka; oats, Early Rust Proof, Rampart; oats, Swedish Select, Sitka; oats, Black Finnish, Sitka; barley, Mansbury, Sitka; barley, Sisolsk, Sitka; barley, Mansuary, Hope; barley, Royal, Copper Valley; barley, Trooper, six-rowed, Copper Valley; barley, Beartown, Kenai; rye, Giant French Winter, Sitka; wheat, spring wheat, Ronanow, Afognak; timothy hay, tundra moss, moss berry bushes, hemp.

VEGETABLES AND FRUITS.

Vegetables and fruit from Alaska, loaned by Mrs. L. L. Bowers, Kodiak, Alaska: Cranberries, moss berries, huckleberries, green pease, kostianeka jelly, molina jelly.

Wax models of vegetables, from the Department of Agriculture, exact models of vegetables raised in Governor Brady's garden at Sitka, Alaska: Rutabaga turnip (weight 31 pounds), turnips, potatoes, horseradish, beet.

Loaned by Roll Brothers, Hope City, Alaska: Cultivated red currants.

Loaned by A. R. McIntosh, Haines, Alaska: Marsh huckleberry.

Preserved fruits, loaned by the Women's auxiliary, of Sitka: Yakutat strawberries (wild), red raspberries, black currants, huckleberries, salmon berries, strawberries (cultivated), wild cranberries.

Preserved wild fruits, loaned by the Women's Auxiliary of Juneau: Apple jelly, cranberry jelly, gooseberry jelly, wild crab-apple jelly, blue huckleberry.

Loaned by Mrs. L. L. Bowers, Kodiak Island: Alaska cranberry (moss berry Vaccinicum vitas-idasa).

Loaned by C. P. Coe, Wood Island: Aleut wild crab-apple jelly.

Loaned by Mrs. L. L. Bowers, Kodiak Island: Alaska cranberries.

Loaned by Roll Brothers, Hope City: Alaska thimble berry (wild).

Loaned by Mrs. Wagonner, Klawock: Wild red currants (ribres rubrum).

Loaned by Kenai Experiment Station: Salmon berry (Rubus spectables).

Loaned by C. P. Coe, Wood Island: High-bush cranberries (Viturnam panciflorum).

Loaned by Mrs. L. L. Bowers, Kodiak Island: Wild Molenia berry wine.

Loaned by Mrs. C. A. Bratton, Valdez, Alaska: Lagoon berries.

Loaned by William Cook, Wrangell, Alaska: Red raspberries, black currants, gooseberries, strawberries, blueberries, red salmon berries, yellow salmon berries, rhubarb.

Loaned by Mrs. J. L. Steele, Valdez, Alaska: Salmon berries.

PRESSED WILD FLOWERS.

Loaned by the Women's Auxiliary of Sitka: Anemone Narcissiflora, Gentiana sp., Fragaria sp., Streptopus amplexifolius, Rubus parviflorus, Helianthus sp., Cassiope stelleriana, Fritillaria kantsahatcensis, Lathyrus maritimus, Apargidium boreale, Lupinus unslachenis, Aruncus aruncus, Phyllodice aleutica, Potentilla ancerina, Campanula lansdorfiana, Aconitum delphinifolium, Geum cattlefolium, Viola glabella, Ledum latifolium, Dodecatheon frigidum, Eriogyna pectinata, Caltha leptosepala, Geranium erauthum, Tellima grandiflora, Mimulus langsdorfi, Saxifraga oppositiflora, Cladonia, Primula, Tiarella trifoliata, Moneses uniflora, Aster peregrina, Oxycoccus oxycoccus, Rubus chamaememorus

Loiseburia procumbens, Alnus glutinosa, Aquilegia canadensis, Trifolium repens, Montea Sibericum, Ranunculus coolegii, Rubus spectabilis, Romanzoffia sitchensis, Ribes bractiosum, Ribes parsiflorum.

Forty varieties of pressed wild flowers of Alaska, nicely mounted on cardboard, sent by Women's Auxiliary of Juneau: Snap Dragon, wild rose, Trientalia artica, Vaccinium uliginosum, Castilleia parviflora, Andromeda polifolia, Tofieldia, Viola palustris, Roschinachia glabra, Kalmia glauca, Linniorchis Linniorchis, Copia asplenifolium, Menyanthes cristagalli, Saxifraga noltena, Pinguicula vulgaris, Cornus canadensis, Soldiago, Cochlearia, Coptis trifolia, Ranunculus nelsonia, Columbine, Cowslip, Buttercups, Solomon's Seal, Rice Flour, Marsh Marigold, Wild geranium, Anemone, Larkspur, Sweet pea, Wild dandelion, Blue Bell.

N. W. T., from Dawson: Cowslip, Columbine, Buttercup, Anemone, Wild rose, Wild geranium, Yellow violets, Wild forget-me-nots, Thimble berry, Wild celery, Rice flower, Fire flowers, Solomon's Seal, Wild heliotrope, Sand flower, Wild pea, Cyclamen, Double buttercups, Monk's Hood, Garden heliotrope, Maiden Hair fern, Bunch berry.

One framed picture of real wild flowers, pressed by Mrs. F. J. Mielke, Nome, Alaska.

Wild flowers of Alaska, pressed by Lucilla Cameron and Ledlie Smith, Eagle, Alaska; nicely displayed in a birch-bark covered album.

Wild flowers from Rampart, Alaska, collected by Gertrude Spiers Rader, latitude 65° 30′, longitude 150° 15′. This collection contains 76 specimens, which are probably not more than one-third of the varieties found in the North Yukon Valley. Eighteen different varieties of flowering plants in full bloom have been found at one time in a space not 100 feet square. A few specimens of this collection were found north of the Arctic circle. The others were collected within one degree of the circle.

ETHNOLOGY.

TWENTY TOTEM POLES AND TWO NATIVE HOUSES AND ONE WAR CANOE LOCATED ABOUT THE ALASKA BUILDING.

The totem poles in the Alaska exhibit come from different places on Prince of Wales Island and from two different tribes. At an old village called Tuxekan four were obtained. These represent the totem or heraldic sign of each family, and the back part of the totem was excavated to receive the charred bones of friends and ancestors of the man who raised it. The Thlingits were in the habit of burning their dead, but carefully preserved all the charred embers from the funeral pile. These totem poles were always erected on great occasions, and the bones were usually carefully wrapped in a new blanket and incased in the back part of the totem. One of the totems, when taken down, had the remains of a child in the butt end of the pole, which was in the ground. Four feet of it was sawed off and put back in the hole. A Thlingit at Klawock, named "Chief Tom," presented one of the poles, elaborately carved. It had contained remains also. One of these Thlingit poles was given by Yennate, who is now a very old man. He said he made it in honor of his mother. This is the one with the big raven, the head downward. His mother belonged to the Raven clan. Under this a bear (the brown bear is the totem of the Kokwonton tribe). The woman's husband could be of the Kokwonton tribe, and doubtless was. Underneath this bear is an Indian with a canoe. This represents the brother of the woman, Yennate's uncle, who was a very noted Indian doctor or sorcerer in years gone by. The two faces of masks underneath the doctor represent two slaves owned by the doctor.

The large poles are from the Hydah villages. Three were obtained from an old village called Sukkwan, one from Klinkwan, two from Onhonklis, south of Howkan, and three were obtained from a place on the southeast side of Prince of Wales, called Kasaan. These Hydah carvings are really folk-lore stories carved in wood. The Hydahs did not burn their dead, but buried them, usually in the butt of a great cedar tree raised on end, but sometimes the remains were buried at the base of a totem pole. In fact, when some of these poles were obtained the remains of two or three persons were found and reinterred. All these poles, together with two native houses and a large war canoe, and the carvings on the inner posts of the houses, were gratuitously donated by the natives. By the aid of the officers and crew of the revenue cutter *Rush* they were dug out and lowered, and transported to places where they could be shipped on regular steamship lines to Seattle. The steamship companies very kindly aided the Alaska exhibit commission in transporting all exhibits from Alaska free of cost to Seattle. This is the first time that such an exhibition of these curious and interesting works of our northern tribes has been shown to any considerable mass of people.

FISH.

Norwegian herring, from Golovin Bay Mission, near cape Nome.

RAW FURS, HIDES, WALRUS TUSKS, ETC.

List of Alaska furs, etc., exhibited by C. T. Wernecke, Seattle, Wash.: Four brown bear skins, 6 black bear skins, 3 moose hides, 2 wolverine skins, 1 fisher skin, 3 mink skins, 6 beaver skins, 3 white fox skins.

Belonging to Department of the Interior: One lynx skin, 1 wolverine skin, 5 red fox skins, 6 cross fox skins, 1 black fox skin, 3 silver grey fox skins, 6 bear skulls, 4 pairs walrus tusks.

MOUNTED HEADS.

Loaned by H. H. Hildreth, Seward, Alaska: One moose head.

Loaned by Mr. Swan, Juneau, Alaska: Two moose heads.

Collected for the Department of the Interior: Two moose heads, 7 mountain sheep heads, 2 caribou heads.

MOUNTED ANIMALS.

Collected for the Department of the Interior: Two Kodiak brown bear cubs, 1 Alaska spider crab, 1 sea otter pup, 1 black bear, 1 Sitka deer, 1 mink, 1 female moose.

FANCY NEEDLEWORK.

Loaned by Mrs. Alvah Eames, Valdez, Alaska: Two bead chains.

Loaned by Mrs. J. L. Steele, Valdez, Alaska: Two embroidery pieces.

Loaned by Miss Dean, Valdez, Alaska: Two daisy bead chains.

Loaned by Mrs. E. G. Ames, Valdez, Alaska: Three embroidered sofa pillows, 1 pincushion.

Loaned by Mrs. William R. Mills, Sitka, Alaska: One lace cover, 2 lace collars, 1 embroidered piece.

OLD RUSSIAN RELICS.

Loaned by Capt. W. F. Kilgore: Old Russian gun and carriage, found in Alaska at time of purchase by the United States.

Loaned by George Kastrometinoff, Sitka, Alaska: Part of armor worn by Baranoff, the first Russian governor of Alaska.

Loaned by Camp Nome, No. 9, Arctic Brotherhood: Russian bell, from old Russian mission; Russian dagger, found in interior; Russian officer's sword, found on Sledge Island.

BASKETRY.

Loaned by Mrs. C. R. Johnson, Nome, Alaska: Two Attu baskets, 5 Yakutat baskets, 1 Port Clarence basket, 1 Stikine basket, 1 Yakutat bottle, 1 Yakutat dish, 5 birch baskets.

Loaned by Mrs. J. B. Marvin, Portland, Oreg.: Twenty-two Yakutat baskets.

Loaned by Mrs. A. C. Goss, Kodiak, Alaska: Three Atka covered baskets, 1 Atka cigar case, 4 Attu baskets, 1 Yakutat basket.

CURIOS.

Part of J. S. Romig collection, sent from the Department of the Interior: Fur coat of the Elowatok family, fur cap, extra fine; pair men's fancy boots, pair mittens and 1 chew box, native violin, 2 Kachima axes, model Kachima and dolls, fire machine, set squirrel snares, bundle willow bark net twine, fishhook and line, pair native goggles, small stone adz, small stone fish knife, ivory pipe, water bottle, drinking cup, story knife, oil lamps, old stone pot, pair grass socks and grass mats, wolf-head ammunition bag, reloading tool and bullet mold, 2 ladles or wooden spoons, 2 skin scrapers.

A very large and interesting collection of Indian curios, loaned by Hon. John G. Brady, governor of Alaska, numbering 1,360, consisting of masks, carved totem poles, spoons, swords, etc.; fur coat, shoes, gloves, boats, bows and arrows, shields, carved pieces, baskets, bead work—belt, bags, etc.; medicine charm.

Loaned by J. R. Heckman & Co., owners: One wooden bowl, 1 carved spoon.

Exhibit of W. S. Flanagan, from forks of Buckland River, Alaska: Two ivory knitting needles, ivory fire-making drill, ivory tomcod hook, bone pike hook, ivory fish knife, ivory paper cutter, ivory man, ivory sleds, bone image, bone comb, bone spear point, bone sal-

mon spear, bone malamute head, bone gauge, 2 ivory buttons, 2 ivory white whales, ivory seal, ivory hunter, dog and seals, snuffbox (wood), ivory chain.

Mr. D. W. Fales' private collection, Juneau: Indian hat, whale killer; 4 paddles, burnt wood, southeast Alaska; stone totem pole, 2 halibut fishhooks (wood), 5 wooden spoons, cap and ball pistol.

Loaned by Camp Nome, No. 9, Arctic Brotherhood, Nome, Alaska: Native curios from Seward Peninsula, lamp, skin-cleaning tool, death mask, fur knife, Russian bell, from old Russian mission; net-making implement, 3 flints, piece jade, 3 tools, 1 toy, spearhead, spear holder, polar bear tooth ornament, 2 seal spearheads, labret, 2 net-making implements, spearhead, trinket box, labret, ornament, polisher, bullet mold, ornament, labret, ornament, 2 pieces jade, needle for nets, 2 labrets, net-making tool, ornament, scraping knife, spearhead, buttons, floats for fishing, sinkers, spear-point holder, spearheads, shuttle, net-making implement, native letter, snuffbox, mouthpiece, necklace, spearhead, trinket box, scraping tool, pick, knife, drilling tool, breast drill, snow glasses, braining club, mallet, adz, drill bow, spearhead, throwing sticks, fishing outfit, native pipes, native belt, headdress, scraping tools, Russian dagger, found in interior; Russian officer's sword, Sledge Island; native ice scoop, snowshoe walking stick, fish net.

Loaned by F. L. Henshaw, Nome, Alaska: Seventeen ivory napkin rings, 11 ivory hearts, 2 ivory marbles, 1 ivory razor, 1 pair snowshoes, 40 ivory buttons, 1 ivory cigarette holder, 2 ivory toothpick cases, 1 ivory cigar holder, 12 ivory charms, 1 ivory safety pin, 1 ivory watch and chain, 1 ivory knife and chain, 2 ivory jackknives, 8 ivory toothpicks, 6 ivory fishes, 1 ivory jackknife, 1 walrus whisker chain, 1 ivory thimble, 1 ivory snuffbox, 5 ivory rings, 1 ivory doll, 4 ivory emblem buttons, 3 mastodon watch charms, 7 ivory animals, 1 ivory ice pick, 1 ivory spearhead, 3 ivory sinkers, 1 walrus tooth, 9 walrus old pieces, 1 walrus ice pick, 1 walrus combination knife and fork, 9 walrus spearheads, 2 walrus pieces (old), 3 walrus mallets, 1 pair small mukluks, 2 ivory small masks, 1 ivory handle, 1 ivory cartridge reloader, 2 ivory needlecases, 4 ivory bydarkees, 1 ivory match holder, 1 ivory doubleseal button, 1 ivory spearhead, 1 ivory large needle, 6 ivory saws, 4 ivory picks and shovels, 1 ivory pick, 1 ivory scissors, 1 ivory whale, 1 mastodon ivory cribbage board, 1 whalebone cup, 1 bead earring and necklace, 1 ivory desk and table, 1 ivory gavel, 3 ivory small cribbage boards, 9 ivory sets of markers for cribbage boards, 4 ivory axes, 1 ivory pipe, 1 ivory cup, 3 ivory pipes, 1 Eskimo pipe, 2 ivory axes, 2 small parkies, 1 ivory seine needle, 1 ivory sled, 4 ivory corks, 2 large masks, 2 tomcod hooks, 1 ivory harpoon, 1 ivory penholder, 1 ivory graining knife, 1 ivory gavel, 1 ivory boat, 1 ivory tusk, 2 ivory cups, 1 ivory paper weight, 1 ivory tomahawk, 1 ivory fish-net spool, 1 ivory carved piece, 1 ivory knife, 1 ivory harpoon, 1 tomcod fish line, 1 drilling machine, 3 small parkies, 5 tobacco pouches, 1 bone steeple and chisel, 1 bow and arrows, 1 fur mat, 1 bone cabin, 4 pieces mastodon ivory, 1 ptarmigan spear, 1 ivory sled, 2 ivory bucksaws, 1 ivory meat saw, 2 ivory Eskimo hat pins, 18 ivory knives, 1 ivory match and ash tray, 17 ivory cribbage boards, 1 mastodon ivory cribbage board, 1 ivory bumblebee, 1 ivory reindeer and sled, 1 bone reindeer, 1 mastodon tooth.

Loaned by H. T. Harding, Nome, Alaska: One mastodon jawbone, 1 native basket, 1 native parkie, 1 native football, 1 small kiak, 1 fur pouch, 2 omiak and implements, 1 pair sealskin mukluks, 1 pair reindeer-skin mukluks, 1 pair snow glasses, 1 whetstone, 1 spear point, 1 cork, 1 lead, 1 stove, 1 lamp, 2 pieces crockery, 2 bird slings, 3 harpoons, 1 walrus tusk, sinkers for fish net, 1 wooden utensil, 2 paper cutters, 1 hatchet, native snares, 1 stone mouth ornament, 4 jade axes, 1 slate axe and handle, 1 ivory axe, 1 ivory pipe, Siberia; 3 wooden pipes, 1 tomcod pole and whalebone line, 2 bone handle knives, 2 bone spear points, 2 ivory spear points, 3 spear-point heads, 1 ivory net hook, 1 snuffbox, 1 skin hair shave, 1 grass comb, 2 stone skin knives, 1 native top, 1 ear ornament, 1 straw mat, 1 straw cup, 4 ivory tusks, 28 ivory curios, 1 native flint and steel, 1 cribbage board.

Loaned by O. E. Wheeler, Nome, Alaska: 1 Auroch horn.

Loaned by N. H. Chance, Tacoma, Wash.: One tooth of mammoth.

Loaned by E. Engelstad, Portland, Oreg.: One green jade adz, 2 carved ivory spearheads, 2 jade knives, 4 jade ornaments, 3 pieces jade.

Loaned by O. Siedenberg, Nome, Alaska: 1 lot whalebone.

Loaned by J. E. Stanley, Seattle, Wash.: One shoulder blade of whale.

Loaned by A. E. Boyd, Nome, Alaska: One Indian mask, 1 Eskimo meetinghouse, 2 Eskimo spears.

Loaned by Mrs. C. S. Johnson, Nome, Alaska: Attu mat, 2 pokes, bead bag, Yukon River; Eskimo bag, horn spoon, ivory cross, native work; 2 horn spoons, belt buckle, 4 wooden dishes, mail sled, dog sled, 2 canoes, 2 pair snowshoes, reindeer boots, 4 pair small mukluks, dress of Laplanders, ivory buttons, bracelet and earrings, horn bowl, needlecase, napkin ring, skin knife, eagle robe.

MISCELLANEOUS EXHIBITS.

Loaned by St. Elias Hotel, and Debney & Poot, Valdez, Alaska: Three samples of United States cable in use between Valdez and Seattle.

Loaned by Dr. L. S. Camicia, Valdez, Alaska: Weather report.

Made and loaned by Ed. C. Morse, Portland, Oreg.: Burnt wood design, "The Muse of Alaska;" two paddles, burnt wood.

Loaned by Asle Seppala, Nome, Alaska: Pair Norwegian skis.

Sent by Governor John G. Brady, Sitka, Alaska: Copy of first Alaska newspaper.

Loaned by W. A. Reid, Portland, Oreg.: Copy of fourth newspaper published at Fort Gibbon, Alaska; copy of first newspaper published at Kaltag, Alaska.

Property of Alaska Library, sent by Governor John G. Brady: Capt. James Cook's Voyage to the Pacific Ocean, consisting of three volumes and one portfolio of pictures, published in 1785; Vancouver's Voyage, consisting of three volumes and one atlas, published in 1798; Meares's Voyages, consisting of one volume, 1788–89; Portlock's Voyages, 1785, 1786, 1787, 1788, one volume.

THE CHILKAT BLANKET.

In the early days of exploration, Vancouver found the Chilkat chiefs wearing on ceremonial occasions this famous totemic blanket. It is their tribal insignia, or ensign, and is worn only by chiefs and persons of high caste, and then only on ceremonial occasions.

These blankets are woven by hand on a primitive loom, from the long fleece of the mountain goat.

The Chilkat blanket is woven by an expert weaver in each of the Thlingit tribes, and also by the Hydahs, of Prince of Wales Island. The art of weaving is fast dying out, and the mountain goats are gradually disappearing.

The blankets are about 2 yards in width and 1 yard in depth, and are bordered at the ends and across the bottom with a deep fringe. The totemic designs woven in these blankets are their clan symbols, fraternal emblems and mystic belief. The eye is the symbol of humanity and of totemic protection.

The colors of the blanket are white, black, yellow and blue. The yellow is made from the moss on the rocks and trees, the blue is made by boiling copper and seaweed together, and hemlock bark gives the base for the black.

The price of a blanket ranges from $65 to $100. It takes a woman several weeks to weave a Chilkat blanket on her primitive loom.

Two Chilkat natives, Mr. L. V. Shotridge and wife, from Haines Mission, Alaska, are giving illustrations at the Alaska Exhibit of the method of weaving the above-described blankets.

MOUNTED BIRDS.

Collected for the Department of the Interior, Washington, D. C.: Ten bald eagles, 1 Canada goose, 4 mallard ducks, 1 pintail duck, 1 American scaup duck, 4 American Golden-eye ducks, 1 bufflehead duck, 2 harlequin ducks, 2 old squam ducks, 2 white-winged scooters, 2 surf scooters, 4 American merganser, 7 birds not classified, 3 cormorants, 5 herring gulls, 2 Bonapart's gulls, 1 loon, 1 holbells grebe, 4 magpies, 1 owl, 1 ptarmigan, 1 grouse.

Loaned by Capt. W. F. Kilgore: Six ducks, 1 eagle.

BIRD SKINS.

Loaned by H. T. Harding, Nome, Alaska: One diver duck, 1 spotted breast goose, 1 white swan, 1 brant, 1 eider duck, 1 empress goose, 1 sprig duck, 1 winter ptarmigan, 1 spring ptarmigan,

Loaned by Harry Pidgeon, Wrangell, Alaska: One horned masking puffin, 1 tufted puffin.

MAP OF ALASKA

DEPARTMENT OF THE INTERIOR
GENERAL LAND OFFICE
HON. BINGER HERMANN, COMMISSIONER

Compiled from the official Records of the General Land Office U.S. Coast & Geodetic Survey U.S. Geological Survey, Canadian and other sources
under the direction of
HARRY KING, C. E.,
Chief of Drafting Division G.L.O.

1898

Scale 1 Inch = 72 Miles

FROM JUNEAU TO FORTY MILE CREEK

Scale 1 inch = 36 Miles

DISTANCES.

(APPROXIMATE.)

Yukon or All-water Route

Chilkoot Pass (Over) Route

White Pass (Skaguay) Route

Chilkat Pass or Dalton Route

Taku River Route

Stikine River Route

Legend.

- Capital Surv. Gen'l's Office
- Land Offices
- Reservations of small areas for School and various other purposes
- Routes to the Interior by water and overland
- Rail Roads proposed
- Isothermal lines
- Timber Limits
- Regions of reported Gold Deposits
- Silver
- Copper
- Coal
- Rail Roads

E. Mission		Episcopalian Mission
C		Congregational
S.E.		Swedish Evangelical
R.C.		Roman Catholic
G.C.		Greek Catholic
M		Moravian
M.E.		Methodist Episcopal
Q.		Quaker
B		Baptist
P		Presbyterian
Ch of E.		Church of England

Land District Boundaries

Mail Route

From San Francisco

Monthly Mail Route

Weekly Mail Route

Continuation of ALEUTIAN ISLANDS

Compiled and Drawn by H. Hodge

REPORT OF THE GOVERNOR OF ARIZONA.

REPORT OF THE GOVERNOR OF ARIZONA.

OFFICE OF THE GOVERNOR,
Phoenix, Ariz., August 26, 1905.

SIR: In compliance with your instructions, I have the honor to submit to you the following report of the affairs of Arizona for the fiscal year ended June 30, 1905:

INTRODUCTORY.

I am pleased to report the general prosperity of the Territory. Population is increasing at a rapid rate; all the various industrial interests are developing at an accelerated ratio, and a buoyant and hopeful feeling pervades our people.

Arizona presents so many unique features, so many difficulties that can not be appreciated by the inhabitants of the older communities of the country, that it is almost hopeless to attempt to present within the limits of an official report either the conditions to be met or the splendid developments that have been attained notwithstanding those difficulties. It is difficult for the resident of the Eastern States to realize that the products of the soil of the greater part of Arizona are only possible with the artificial application of water to the land; that the hay and the grain, and the fruits, are only obtained from irrigated lands.

The average eastern or middle western farmer would think it almost a prohibitive tax upon his industry to have to pay $1, $2, $3, or even more, per acre per year merely to supply his land with the water sufficient to sustain and promote the growth of his crops; but on lands of the fertility of ours and with a climate like that of our valleys such an apparent imposition is trivial when compared with the results. The conditions of soil and climate of those countries inhabited by the Anglo-Saxon are generally such that the artificial application of water for the cultivation of crops seems to him anomalous. In a vague, indefinite way we may know that a very large proportion of the inhabitants of the globe obtain their food supply from irrigated lands, but it is only in the comparatively newly settled arid parts of the United States that the significance of the fact is brought home to our realization. The American, with his accustomed energy, genius, and audacity, is just entering upon the contest with the desert. The subject is a new one to him; yet the intricate problems are being solved with characteristic promptness and upon lines entirely consistent with his notions of justice and individual freedom and independence.

The National Government is engaged in an interesting experiment in the reclamation of the arid lands. It is an interesting experiment from many points of view—from the social, the political, and the economic, as well as from the engineering standpoint.

Briefly stated, the Government has appropriated the proceeds of the sales of public lands in certain of the States and Territories to be used for the construction of dams and other works for the storage

and diversion of water for the reclamation of arid lands. In any given project the cost of the works is added to the Government price of the lands supplied with water by it and repaid in annual installments. In the event that lands already in private ownership are included within the area of service by the projected works, the Government may grant a water right to the owner upon terms to be fixed by the Secretary of the Interior. In either case the entire cost of the works is eventually returned to the Government and may be used by it in the construction of other works. The lands so reclaimed are worthless without the water. Eventually, when the Government has been reimbursed for the cost of construction, the works become the property and subject to the management of the associated landowners. This plan avoids the vice and evil tendencies of subsidy by the Government, for the relation between the Government and the owner of the reclaimed land is essentially that of creditor and debtor and not that of patron and pensioner. The Government simply takes the money it receives from the sales of certain of its lands to construct works to render other of its lands habitable and profitable, and consequently marketable, where it has been that individual or private corporate effort was inadequate. The Government gets back the money expended, and the settler retains his self-respect. It would be an unfortunate policy for the American Government to adopt that any of its citizens should become mere gratuitous beneficiaries of its bounty.

I advert specifically in later portions of my report to the projects now under way in this Territory under the provisions of the national irrigation act.

I am pleased, too, to note that there has been a perceptible growth in the civic pride of our people. It is so usual to associate the fact of Territorial government with crudity, lawlessness, laxity of morals, want of stability, and indifference to business faith and integrity that great injustice is often done us. It is true that in a new country there is at least a greater disregard of the conventionalities than in our older communities, but it does not necessarily follow that there is more real lawlessness, less of probity and integrity, or even a greater laxity of morals. Arizona has been made the subject of many careless criticisms by indifferent, incapable, and thoughtless observers. Many profess a profound shock of their moral sensibilities, while they are willfully or ignorantly blind to vices at home that would not be tolerated in "wide-open Arizona." I do not attempt in any degree to palliate any matter of just criticism, but the criticism should be just and the critic should know something of the conditions. That conditions are different here from those in the older communities is not evidence, as it is often assumed to be, that they are therefore worse here. This would suggest itself to those not wholly provincial, and Arizona can not be charged with provincialism. I think I can safely assert that life and property are safer in Arizona than in many, if not in most, of the States. Nowhere, I am sure, can a man who respects himself and his neighbor and his neighbor's rights, with reasonably strict attention to his own business, go about with more freedom and with greater confidence of personal safety than he can in Arizona. Locked and barricaded doors are in most parts of Arizona a novelty. The professional thief, as he is

known in the older and more thickly populated communities, is almost unknown in Arizona.

I have had occasion in my report to call attention to many things that may provoke instant criticism—the mere statement of some of them suggests it. But it is my opinion that fair criticism is not harmful, but on the contrary productive of good. It is a matter of common observation that most of the evils of the administration of public affairs arises from an indifference of the people. This indifference is chiefly because of a want of knowledge by the people of the evils, other than in a general way. As long as there is no publicity there is encouragement and opportunity for the growth of these evils. If the statement of these matters which are the subject of criticism shall call attention to them, it will also suggest the remedy.

The rainfall during the year has been far in excess of the normal. Its immediate effect was to renew the grasses on the ranges and to relieve the conditions threatening disaster to the live-stock interests. The streams relied upon to supply water for irrigation were replenished, and an abundance of water has been available for that purpose. Springs and streams in the mountains, which had for a long time, owing to the continued drought, been dead, are again living. The indirect results are reflected in all industries, doing much to revive hope and promote confidence in the development of the resources of the Territory. The good effected by the copious rains was not wholly unmixed with injury, however. Floods in the various streams were numerous and inflicted considerable damage to property. Railroad bridges and embankments were washed away; dams for diverting water for irrigation were destroyed, and canals were to a greater or less extent seriously damaged. In Apache County the damage to irrigation works was, proportionately, particularly heavy, dams and reservoirs which were the sole dependence of large cultivated areas having been destroyed. The aggregate of good, however, greatly outbalanced the ill that was done. Arizona had experienced a series of droughts extending over a period of six years. Each seemed more serious than the one preceding.

In his report of last year the governor reported that, as noted at the station at Phoenix, there was a deficit for the year of rainfall below the normal of 3.97 inches. For the year ending June 30, 1905, there was an excess over the normal of 12.33 inches. This condition is one full of encouragement.

The mining industry is being prosecuted with more energy than ever. A persistent and sensible effort is being made to take mining in Arizona out of the category of the purely speculative—"gambling"—pursuits. Intelligence, ability, and special scientific training and processes are being applied to the business in a greater degree than ever before, with the effect, naturally to be expected, of making it a more certain and less hazardous one. In times past much misdirected energy and many wasted thousands of dollars have been expended in the business. Better methods now prevail, with consequent better and more certain results.

The copper product is increasing enormously. If the ratio now prevailing shall continue Arizona will easily be the first copper-producing country in the world, if she has not in fact already attained that distinction.

The production of gold and silver is also increasing, but naturally at not so great a ratio as the baser metal.

Railroad construction has been almost continuously in progress throughout the year, opening up to the markets new or hitherto difficult sources of our natural wealth. Some of the new lines constructed constitute real scenic routes, and the achievements of the engineer and the courage of the builder challenge the wonder and admiration even more than the rugged difficulties encountered and overcome.

Harvests have been abundant, the ranges prolific, the mines productive beyond any previous record, and the people of Arizona are full of hope and courage for the greater and accelerated development sure to follow.

HISTORICAL AND DESCRIPTIVE.

The Territory has an area of 113,020 square miles.

The origin of the name Arizona is not definitely known. Bancroft the historian and some others have insisted that the name is from a supposed Pima Indian word "Arizonac," although Bancroft admits that the "aboriginal meaning of the term is not known." That historian treats as "extremely absurd" the suggestion that the name is of Spanish derivation, and he apparently bases that conclusion upon the fact that there is no similar word in the Spanish language. But it seems possible that "Arizona" may have had its derivation in the Spanish words *arida zona* (arid zone). The well-known tendency of uneducated speakers of the Spanish tongue to elide the last syllables of words ending in vowels, and their tendency to "run words together" would easily transform *arida zona* into "Arizona."

From 1851 to 1854 Arizona was a part of New Mexico and was theoretically divided into five or six counties—that is, the boundaries of the New Mexican counties extended west to California. But Bancroft points out that as Arizona—north of the Gila River, the only part then belonging to New Mexico or the United States—had no settlements there existed hardly a semblance of county jurisdiction. By an act of Congress, August 4, 1854, the Gadsden purchase (all of that portion of Arizona lying south of the Gila River) was added to New Mexico; and by an act of the legislature of that Territory, January 18, 1855, it was attached to Donna Ana County, a part of which it remained until 1863. But during that period, from 1855 to 1863, the existence of Arizona as a part of Donna Ana County was only nominal. The records of the time show, as the only indication of county rule, the occasional sending of a criminal to Mesilla, N. Mex., for trial. There were justices of the peace at Tucson, and perhaps elsewhere. From the beginning there was much complaint that the country was not and could not be properly governed from Santa Fe, and there were many petitions for a separate Territorial organization. A convention was held at Tucson on August 29, 1856, which resolved not only to send a memorial to Congress urging the organization of a Territory of Arizona, but to send a Delegate to Washington. The memorial was signed by some 260 names, and Nathan P. Cook was in September elected Delegate. He was not admitted to a seat, but his mission was brought before the House in

January, 1857. The Committee on the Territories reported against the Territorial organization, solely because of the limited population, but recognized the unfortunate condition of the people in the matter of their distance from the seat of government in New Mexico, and recommended a bill to organize a judicial district south of the Gila, to appoint a surveyor-general, and to provide for representation at Santa Fe, as well as for the regulation of land claims and mining titles. Such a bill was passed by the Senate in February, but was not acted upon by the House.

The President, in his messages of 1857 and 1858, recommended a Territorial government; Senator Gwin, in December, 1857, introduced a bill to organize such a government for the Gadsden purchase under the name of Arizona; the legislature of New Mexico, in February, 1858, passed resolutions in favor of the measure, though recommending a north and south boundary line on the meridian of 109; several favorable petitions were received from different parts of the Union, and in an election held at Tucson in September, 1857, the people had prepared a new petition and elected Sylvester Mowry as Delegate. The Delegate was not admitted, and Gwin's bill was not passed. In the following years Mowry continued his efforts with much zeal, but no success, being reelected as Delegate, and the people of Arizona held their meetings and sent more memorials, to which little attention was paid.

In 1860, from the 2d to the 5th of April, there was held at Tucson a constitutional convention, which proceeded to "ordain and establish" a provisional constitution to remain in force until "Congress shall organize a Territorial government, and no longer." The new Territory included all of New Mexico south of latitude 33° 40′, and was divided by north and south lines into four counties. A governor was elected in the person of Dr. L. S. Owings, of Mesilla; three judicial districts were created, the judges to be appointed by the governor, as were also an attorney-general, lieutenant-governor, and other officials; a legislature of 9 senators and 18 representatives was to be elected and convened at the governor's order; provision was made for organizing the militia; an election of county officers was called for May; the general laws and codes of New Mexico were adopted, and the records of the convention, constitution, and the governor's inaugural address were printed at Tucson in what was the first book ever published in Arizona.

Nothing was done under this nominal government beyond the election and appointment of officials. In November, 1861, Edward McGowan, district judge under the new régime, was elected Delegate to Congress. The New Mexican legislature the same year passed new resolutions in favor of a division, and also by act of February 1 created a new county, called "Arizona," from the western portion of Donna Ana County, with Tucson as county seat, but no attention was paid to this act, and it was repealed two years later. In December a bill came up in Congress to organize the Territory, but without success.

Finally, in March, 1862, the Arizona bill was again introduced and discussed in Congress. Unlike former bills, this adopted a north and south boundary on the meridian of 109, and named Tucson as the capital. Watts, the New Mexican Delegate, strongly advo-

cated the measure. It was urged on behalf of the measure that the white population of Arizona were entitled to protection and a civil government as citizens of the United States, which they had not received and could not receive under the Territorial rule of New Mexico. The bill passed the House on the 8th of May, 1862. In the Senate, after debate, the bill was postponed from June to December, but came up finally in February, 1863, when, under the championship of Senator Wade, and the clause fixing Tucson as the capital being removed, it was passed by a vote of 25 to 12 on the 20th and became a law on the 24th.

I have quoted thus freely from Bancroft, not only because of the peculiar interest attaching at this time to the question of again joining Arizona to New Mexico, but to controvert the assertions often expressed in the statehood debates last winter that the creation of the Territory of Arizona was the result of "political deals" in Washington, and not because of the merits of the proposition. It is clearly established that from the first the people of Arizona found their position as citizens of New Mexico intolerable, because of the vast distance that separated them from Santa Fe.

The Territorial act having been passed by Congress in February, 1863, and officials appointed by President Lincoln in March, the new Territorial government was formally organized by Governor John N. Goodwin and the other appointees, at Navajo Springs, on the 29th day of December, 1863. The flag was raised and cheered; a prayer was said by H. W. Reed; the oath of office was taken by the officials and a proclamation was read by the governor, in which the vicinity of Fort Whipple, established only a month earlier, was named as the temporary seat of government; and here all arrived on January 22, 1864. In May the fort was removed some 20 miles southwest, and near it, in July, the town of Prescott, the temporary capital, had been founded.

By proclamation of April 9 three judicial districts were created and the judges assigned; the marshal was instructed to take a census. At the election held July 18 there were chosen a council of 9 members and a house of 18; also, a Delegate to Congress in the person of Charles D. Poston. The legislature was in session at Prescott from September 26 to the 10th of November. This body adopted a mining law and a general code of laws, prepared by Judge Howell, called in his honor the Howell code, being based mainly on the codes of New York and California. It also divided the Territory into four counties, under the aboriginal names of Mohave, Pima, Yavapai, and Yuma.

There are now 13 counties in the Territory, as shown by the table below.

Counties of Arizona.

County.	Organized.	Area.	County.	Organized.	Area.
		Sq. miles.			*Sq. miles.*
Apache	1879	10,736	Navajo	1895	9,826
Cochise	1881	6,147	Pima	1864	9,424
Coconino	1891	19,322	Pinal	1875	5,324
Gila	1881	4,542	Santa Cruz	1899	1,212
Graham	1881	6,500	Yavapai	1864	7,863
Maricopa	1871	8,816	Yuma	1864	9,787
Mohave	1864	13,421			

Topographically the Territory presents two great divisions (vide Mr. F. W. Hodge, of the Smithsonian Institution, in the Encylopædia Americana): A plateau region in the north, made up of approximately horizontal strata, and the mountainous region in the south, consisting of uplifted strata plicated and folded with mineral rocks and intrusive veins. These mountain ranges are numerous and have a general northwest and southeast trend, with intermediate broad valleys often 20 to 30 miles wide. The chief mountain masses are the Castle Dome, Big Horn, Eagletail Chocolate, Dome Rock, Palomas, Harquahala, and Harcuvar in the southwest; the Aquaries and Colorado in the west; the great plateaus rising in what are sometimes called the Northside Mountains in the northwest; the San Francisco, Bradshaw, and Black in the north central; the Carrizo, Lukachukai, and Tunicha in the northeast; the Zuni, White, Mogollon, and Apache in the east; the Gila, Peloncillo, Pinaleno, Dragoon, Galiuro, Santa Catalina, Huachuca, and Baboquivari in the southeast and south. The isolated volcanic San Francisco Mountain, above Flagstaff, is the highest of all, rising in its greatest height to 12,794 feet, and in Humphrey Peak to 12,562 feet. The other important peaks in the Territory are Thomas, 11,496; Escudillo, 10,691; Graham, 10,516; Ord, 10,266; and Greens, 10,115 feet, while many other exceed 5,000 feet. To the south the surface falls abruptly to low ridges, mostly volcanic; thence by terraced mesas to a great desert plain little above sea level, cut by gullied stream beds drawing the occasional rainfall to the broad valley of the Gila.

The great northern plateau, or series of plateaus, range in altitude from 5,000 to 7,500 feet. Rising from them are numerous mountain spurs, buttes, and the cones of extinct volcanoes, while the Colorado River has cut through 6,000 feet of strata, exposing formations down to the Carboniferous and Tertiary marine strata, underlying Tertiary lake sediments and later alluvium; indeed, it has been said that every period of the world's history since the dawn of life is represented in the geology of Arizona. The surface of the land as it lies was formed by a huge Eocene uplift, the water action afterwards cutting the gorges and shaping the mesas and buttes. Another upheaval took place in the Miocene period with eruptive volcanoes. Near Holbrook, Navajo County, is a wonderful forest of fallen petrified trees, with trunks 4 feet thick, cracked into exquisitely colored blocks. Everywhere a feature of the landscape in the northern sections are great isolated mesas of sandstone with scarped and pinnacled sides, often more than 1,000 feet in sheer height. Most of the stream courses are dry, save in the rainy seasons. The largest river is the Colorado, which flows generally southwest from Utah for 200 miles through the famous Grand Canyon of Arizona, one of the wonders of the world, then turning south, forming the western boundary of the Territory until shortly before it reaches the Gulf of California. Its chief affluent in the Territory is the Gila, which flows entirely across its southern portion; other tributaries are the Virgin, the Colorado Chiquito, or Little Colorado, in the north, and Bill Williams Fork in the west. The most important tributaries of the Gila are the Salt and Verde rivers from the north and the San Pedro from the south. The Salt River, below its junction with the Verde, carries generally a volume of water larger than that of the Gila.

POPULATION.

I estimate the population of Arizona at this date (September 1, 1905) to be somewhat in excess of 170,000. The Director of the Census estimated on June 1, 1905, that the population of the Territory was 140,276, but the estimate furnished me does not explain how the conclusion was reached.

The figures at which I estimate the population are arrived at by basing calculations upon the increase in the number of votes cast and the increase of school population.

The Federal census of 1900 gave Arizona a population of 122,931. That census was notoriously incomplete. It was taken in the summer time, when hundreds of people were at the seashore and other places outside of the Territory, and it is known that a number of remote mining camps and settlements distant from the centers of population were not visited at all by the enumerators.

But for the purpose of making a conservative estimate I have accepted the census of 1900 as correct.

While citizens of Arizona do not vote for President, they take more interest in elections in Presidential years. There is no more reliable method of estimating the population than by taking the votes cast at the Territorial elections of 1900 and 1904 (both Presidential years) and the school census, noting the increase thereof, and taking the ratio of increase as the true ratio at which the general population has increased.

The total registered vote of the Territory in 1900 was 21,061. The registered vote for the election of 1904 was 31,806, an increase of 10,745 in four years, or 51 per cent. Were the registered vote to be taken for the purposes of comparison, it would show a population considerably in excess of the above estimate. The census population of 122,931 in 1900 being represented by a registered vote of 21,061, the registered vote of 31,806 in 1904 would indicate a population of 185,648. But as the registration books are not always entirely accurate, I have thought it best not to lay stress upon the registered vote for the purposes of comparison.

In the year 1900 there were 16,620 votes cast for Delegate to Congress. In the year 1904 there were 21,427 votes cast for Delegate, an increase of 4,807, or 28.92 per cent. In the five-year period from May, 1900, to May, 1905, the number of children of school age increased from 20,833 to 29,290, a gain of 8,457, or 40.59 per cent.

Thus it is seen that the votes cast increased at the rate of 7.23 per cent per year, while the school population increased at the rate of 8.11 per cent per year. Taking the percentage of the increase in the vote cast and the percentage of increase in the school population together for a basis of comparison, it is found that the two increased at the average rate of 7.67 per cent per year.

In five years, at this rate, there would be an increase of 38.35 per cent. And as five years have elapsed since the Federal census of 1900 was taken, it is altogether conservative to estimate that the population of the Territory has increased at the rate of 7.67 per cent each year, or 38.35 per cent since the census was taken.

An increase of 38.35 per cent would give an increase of 47,144 in the population of the Territory since 1900, or a total population at this time of 170 075.

It is a matter of the utmost public concern to know the character of the population of Arizona, and here again unimpeachable figures show that a grave injustice has been done to the Territory by writers and statesmen who have insisted that a dangerously large portion of our population is illiterate. During the statehood discussion in Congress assertions have been frequently made that "nearly 30 per cent of Arizona's people are illiterate," and the figures presented in the census reports have been brought forward in proof. Unfortunately for the Territory, however, these figures have never been analyzed.

Carefully, it would seem, the fact has been overlooked that the Indians, Chinese, and Japanese were included in the census returns of Arizona's illiterate population. The census of 1900 showed that there were 26,480 Indians, 1,419 Chinese, and 281 Japanese in the Territory.

The total number of illiterates in the Territory was given as 27,307. Of this number 16,659 were Indians, Japanese, Chinese, and negroes, leaving 10,648 as the number of "white" illiterates.

Of the 10,648 "white" illiterates 7,552 were foreign born; of the 3,096 illiterates remaining 1,830 were of foreign parentage. This would leave an illiterate native "white" population of but 1,266.

It should be remembered also that our citizens of Mexican descent are all classed as "white," and it is safe to say that of the 1,266 native "white" illiterates practically all were of Mexican descent.

For the purpose of depreciating Arizona's claims to statehood, a favorite argument is always found in the alleged illiteracy of her population, but the very census returns to which appeal is made for the purpose of sustaining these arguments firmly establish the Territory's claim to rank with the very best sections of the Union in the matter of low percentage of illiteracy. And for the purpose of showing the scantiness of her population emphasis is laid upon the fact that the census returns of 1900 include the Indians, while for the purpose of proving the illiteracy of Arizona's people the Indians are always forgotten.

Indeed, it is my observation from a long residence in the Territory, and from a fair knowledge of the population of many of our States, that Arizona has a smaller percentage of illiterate Americans than any other subdivision of the Union. I do not believe that there are 50 illiterate Americans in all Arizona.

Not only are our people not illiterate, but they are alertly intelligent and well informed. They read not only the local newspapers, but many thousands of the dailies that are published in the large cities of the country. The leading magazines and reviews have a large circulation in the Territory.

The quality of Arizona's citizenship will bear comparison with that of any State. It is of the best American type. Our people are law-abiding and law-upholding. There is a criminal element in the population, to be sure, and there are many crimes of violence, as must always be the case in a Territory which is not only on the frontier, but bordering on a foreign country—especially a Territory in which new mining camps are springing up and which offers attractions to adventurers. But crime is rigorously punished. The prompt and vigorous punishment of crime is due in a large measure to the efficiency of

our courts, of course, but the courts would be ineffective unless loyally sustained by the people. There has not been a lynching in the Territory in the past twenty years.

Of the 92,903 white persons returned by the census of 1900, 38,137 were of foreign birth or of foreign parentage. Of that number 12,002 could not speak English—a fact which of itself demonstrates that the illiteracy was practically wholly confined to our foreign-born population, for of the 12,002 who could not speak English there was but a small percentage that could read and write their own language. The census figures segregated into two groups the 12,002 persons above 10 years of age who could not speak English—"Italians," 186; "all other, Mexicans principally," 11,816.

Of the 38,137 persons of foreign parentage, 24,233 were born in foreign countries. The following table, made up from the census figures and now published for the first time in available form, shows the countries of their birth:

Foreign-born population, Arizona, 1900.

Country of birth.	Number.	Country of birth.	Number.
Austria	298	Japan	281
China	1,293	Mexico	14,172
Bohemia	16	Norway	123
Canada	1,269	Poland	22
Denmark	199	Russia	107
England	1,561	Scotland	399
France	253	Sweden	342
Germany	1,245	Switzerland	199
Holland	23	Wales	136
Hungary	22	Other and born at sea	415
Ireland	1,159		
Italy	699	Total	24,233

IMMIGRATION.

The only noteworthy feature of the immigration into Arizona from the various States of the Union was the marked increase in the number of miners who came from the Rocky Mountain States. The labor disturbances in Colorado induced several hundred miners to leave that State and take up their abode in this Territory. Aside from the mining States, the immigration was chiefly from the States of the Middle West—Ohio, Indiana, Illinois, Iowa, Missouri, Kansas, Nebraska, and Texas.

The immigration from foreign countries was not of large volume. According to a statement furnished me by the Director of the Bureau of the Census of the Department of Commerce and Labor, the total number of aliens admitted at all ports from July 1, 1904, to June 30, 1905, who gave Arizona as their destination, numbered 854. This total does not include the immigrants from Mexico, as no record concerning them was kept. It is impossible to estimate accurately the number of immigrants from Mexico, but all the facts at hand seem to warrant the statement that the number of Mexican immigrants did not exceed a few hundred, and of these a large proportion were, as usual, but temporary sojourners. Mexican laborers are in the habit

of coming into Arizona from the neighboring State of Sonora for the purpose of seeking employment, and when their employment is ended they return to their homes. They are employed on the railroads as section hands, around the mines and smelters as surface workers, and to a considerable extent are employed in the mines.

In the tables printed below will be found interesting statistics of foreign immigration into Arizona during the fiscal year, as furnished by the Director of the Census:

FOREIGN IMMIGRATION.

Aliens admitted from July 1, 1904, to June 30, 1905, giving Arizona as their destination, distributed by race and occupation.

BY RACE.

Nativity.	Number.	Nativity.	Number.
Bohemian and Moravian	20	Italian (south)	34
Bulgarian, Servian, and Montenegrin	52	Japanese	70
Chinese	5	Lithuanian	4
Croatian and Slovenian	37	Polish	4
Cuban	11	Portuguese	2
Dalmatian, Bosinian, and Herzegovinian	23	Russian	11
Dutch and Flemish	8	Scandinavian (Norwegians, Danes, and Swedes)	39
East Indian	1	Scotch	22
English	216	Slovak	5
Finnish	6	Spanish	56
French	29	Spanish-American	1
German	47	Syrian	3
Greek	4	Turkish	3
Hebrew	3	Welsh	1
Irish	22		
Italian (north)	115	Total	854

OCCUPATION.

Occupation.	Number.	Occupation.	Number.
Actors	4	Millers	1
Clergy	5	Miners	220
Editors	1	Painters and glaziers	2
Electricians	1	Saddlers and harness makers	1
Engineers (professional)	15	Shoemakers	1
Lawyers	1	Stonecutters	1
Literary and scientific persons	2	Tailors	1
Physicians	2	Tinners	3
Bakers	3	Weavers and spinners	3
Barbers and hairdressers	1	Wood workers (not specified)	1
Blacksmiths	5	Other skilled	5
Brewers	1	Bankers	1
Butchers	1	Draymen, hackmen, and teamsters	1
Carpenters and joiners	8	Farm laborers	67
Clerks and accountants	22	Farmers	27
Dressmakers	1	Laborers	228
Engineers (stationary) and firemen	5	Manufacturers	1
Iron and steel workers	5	Merchants and dealers	28
Jewelers	1	Servants	30
Machinists	2	Other miscellaneous	4
Mariners	5	No occupation (including children under 14 years of age)	110
Masons	23		
Mechanics (not specified)	1	Total	854
Metal workers (other than iron, steel, and tin)	2		

FINANCIAL CONDITION OF THE TERRITORY.

The Territory is in better financial condition than ever before in its history. Its bonds are selling at a high premium and are eagerly sought by investors. At the close of the fiscal year the cash on hand in the Territorial treasury to the credit of the various funds amounted to $272,676.14, by far the largest sum that was ever before held by the treasury at the close of a fiscal year. The unexpended balance in the general fund was $67,335.63, the largest sum ever found in that fund at the close of a fiscal year. The increase over the previous year was $46,486.78.

The receipts from all sources amounted to $675,504.85, and the disbursements $593,071.48.

The aggregated bonded indebtedness of the Territory on June 30, 1905, was $3,108,275.29. Of this sum $2,075,302.86 represented the funded debt of counties and cities for which bonds of the Territory had been exchanged, leaving the net debt of the Territory proper at $1,032,972.43. These figures show an increase of $20,000 in the Territorial debt for the year, made necessary by the issue of bonds for improvements at the Territorial university and at the asylum for the insane—obligations incurred under an act of the twenty-second legislative assembly.

Territorial debt June 30, 1905.

Bond issue.	Account on which bonds were issued.	Time.	Interest rate.	Amount.
		Years.	*Per cent.*	
July 1, 1885	Asylum for the insane	20	7	[a] $10,000.00
Jan. 15, 1888	Territorial indebtedness	25	6	78,000.00
July 1, 1892	Territorial exhibit at World's Fair	20	5	30,000.00
July 15, 1892	Territorial and county and city indebtedness	50	5	2,000,000.00
July 15, 1896	Territorial and county indebtedness	50	5	300,000.00
June 1, 1898	Construction, capitol building	50	5	100,000.00
Jan. 2, 1902	Improvements, University of Arizona	20	5	25,000.00
Jan. 15, 1903	Territorial exhibit Louisiana Purchase Exposition	20	5	30,000.00
Do	Territorial and county indebtedness	50	5	92,000.00
Do	Indebtedness Pima County railroad bonds	50	3	318,275.29
July 15, 1904	Territorial and county indebtedness	50	5	94,000.00
Jan. 1, 1904	Improvements, asylum for the insane	50	5	20,000.00
Mar. 1, 1905	Expenses, university experiment station	20	5	11,000.00
	Total bonded indebtedness			3,108,275.29
	Deduct county and city funded debt			2,075,302.86
	Net debt of the Territory			1,032,972.43

[a] Paid July 1, 1905.

The indebtedness, June 30, 1905, funded by the issuance of fifty-year 3 and 5 per cent Territorial bonds under act of Congress approved June 25, 1900, and amendments thereto, is shown as follows:

County and city.	Rate.	Amount.	County and city.	Rate.	Amount.
	Per cent.			*Per cent.*	
Apache County	5	$43,473.50	Pinal County	5	$136,138.08
Coconino County	5	159,000.99	Yavapai County	5	338,740.07
Gila County	5	44,731.86	Yuma County	5	88,791.11
Graham County	5	147,364.70	Santa Cruz County	5	31,000.00
Maricopa County	5	281,636.43	Prescott	5	91,261.90
Mohave County	5	105,363.29	Tombstone	5	13,812.38
Navajo County	5	38,000.00	Tucson	5	27,423.71
Pima County	5	210,240.05			
Do	3	318,275.29	Total		2,075,302.86

Money received by the treasury during the fiscal year ending June 30, 1905.

Fund for which money was received.	Amount.	Fund for which money was received.	Amount.
General fund	$144,189.17	Normal school building fund	$16,375.27
Building fund, asylum for insane	21,877.90	Ranger fund	21,035.41
Interest fund, asylum for insane	42,962.20	Industrial school fund	22,034.21
Bond redemption, asylum for insane	10,491.02	Territorial interest fund	160,637.41
Improvement fund, asylum for insane	4.26	Prison fund	54,126.76
Interest fund, asylum for insane, act 73, 1903	1,141.13	Prison improvement fund	4.97
Capitol building fund	2,808.80	Territorial school fund	43,068.93
Capitol interest fund	5,278.32	University interest, par. 3663, 1901	2,101.00
Interest St. Louis Exposition bonds	1,499.83	University fund	25,631.75
Interest World's Fair bonds	1,594.26	University interest, act 47, 1903	815.20
Northern Arizona Normal School fund	16,809.46	Agricultural college fund	25,000.00
Normal school fund	31,833.54	License and inspection fund	14,184.05
		Northern Arizona dormitory fund	10,000.00
		Total	675,504.85

Money disbursed by the treasury during the fiscal year ending June 30, 1905.

Purpose for which disbursement was made.	Amount.	Purpose for which disbursement was made.	Amount.
General fund	$100,849.46	Normal school fund, Tempe	$17,058.97
Building fund, asylum for insane	20,890.52	Ranger fund	22,697.73
Interest fund, asylum for insane, act 73, 1903	500.00	Industrial school fund	22,377.46
Interest fund, asylum for insane	41,126.78	Territorial interest fund	137,073.26
Bond redemption, asylum for insane	10,021.09	Prison fund	53,518.31
Improvement fund, asylum for insane	1,599.71	Prison improvement fund	4,800.85
Capitol building fund	6,823.86	Territorial school fund	41,894.63
Capitol interest fund	4,950.00	University interest fund, par. 3663	1,250.00
Interest St. Louis Exposition bonds	1,500.00	University fund	23,888.46
Interest, World's Fair bonds	1,500.00	Agricultural college fund	20,000.00
Northern Arizona Normal School fund	14,186.88	License and inspection fund	13,733.70
		Northern Arizona dormitory fund	196.30
		Tempe normal dormitory fund	116.62
		Total	593,071.48

TAXATION.

The subject of taxation is as perplexing in Arizona as elsewhere. To devise and put in practice a system properly apportioning the burden of the cost of government is a problem attended here with difficulties much greater than those in the older States. Many conditions exist here that are influential in determining these questions which are hardly appreciable in the maturer communities. The Territory, for Territorial purposes, has two distinct important sources of revenue.

1. A direct levy upon real and personal property, subject only to certain species of exemption, proportioned to its value.

2. Fees exacted of corporations.

For county and municipal purposes the exaction of license fees for designated occupations is an additional important source of revenue. Certain fines and forfeitures are made to inure to the benefit of the schools, in addition to their other revenue.

Under an act of Congress the board of supervisors of the several counties are authorized to lease for limited but successive terms the lands embraced in the sixteenth and thirty-sixth sections of the public surveys. These sections were, by an earlier act of Congress, reserved from entry and sale to vest later in the future State for

educational purposes. The revenues derived from this source are devoted to the maintenance of the public school system.

There is also levied a poll or per capita tax of $2.50 upon each male inhabitant of the Territory over 21 and under 60 years of age, except upon members of the fire departments, of the National Guard, the Rangers, paupers, insane persons, and Indians not taxed. This revenue is also devoted to the maintenance of the public schools.

The exemptions from property taxation are: The property of the Territory, county, or municipal corporations; hospitals, asylums, poorhouses maintained without purpose of pecuniary gain; churches and chapels; public cemeteries; property of widows or orphan children to an amount not exceeding $1,000 where its total assessed value does not exceed $2,000.

By acts of the local legislature, from time to time, new railroads, beet-sugar factories, irrigation works, and works for the development of water power for the generation and transmission of electric power have been exempted from taxation for specified periods of time.

All property—except, of course, that exempted—must be assessed at its full cash value. The term "cash value" is expressed by statute to mean "the amount at which the property would be taken in payment of a just debt due from a solvent debtor."

Lands and the improvements thereon are required to be separately assessed.

Shares of stock in corporations other than those whose business is to loan money or "to make money by the use of money," are not assessable for taxation, it being held that the stock of such corporation has no value above the value of the property of the corporation for which it stands. Shares of stock in corporations loaning money or whose business it is "to make money by the use of money," are assessable in the county where the corporation does business, at a valuation to be fixed by the assessor.

The valuation of all property for the purposes of taxation is made once each year. Valuations of all property, except that of railroads, are made by the assessors of the several counties, each of the property in his county. Irregularities of assessment are adjusted by the board of supervisors of each county, which sits as a board of equalization. The powers of equalization of these boards are confined to property within their respective counties. A Territorial board of equalization is provided for, in which is lodged the power, among others, of examining into the various assessments, so far as regards the Territorial tax, and equalizing the rate of assessment in the various counties whenever they are satisfied that the scale of valuation has not been adjusted with reasonable uniformity by the different assessors and county boards of equalization.

The value of railroad property in the Territory, including lines and equipment, for taxation, is fixed by the Territorial board of equalization, and is apportioned to the various counties according to the extent of mileage within them, respectively.

The values of property for municipal taxation are fixed by the various municipalities.

The rate of taxation for Territorial purposes is fixed each year by the Territorial board of equalization, and is by it certified to the board of supervisors of the several counties. The boards of supervisors of the several counties fix the rate of taxation each year for

county purposes, and as well for local school purposes. The various municipal governments fix the rates of taxation for their own use. All taxes, though not levied until August, attach as a lien on property on the 1st day of February next preceding.

The statement of these rules seems very simple, but in application they become difficult.

In a new country like this real-estate values naturally fluctuate between wide limits. Every year success in some cases, and in others failure, are demonstrated, while the history of a single year may not be repeated, and in any event does not always afford a safe guide for the future. Population, as a rule, is increasing, and with it there is an increase in values of real estate, but as this increase is not uniform and not always permanent, so values must fluctuate. A large proportion of the wealth of the Territory consists in cattle, horses, and sheep. What their numbers are no one can know. They roam almost at will upon the uninclosed and mountainous ranges, and are never or are seldom within the view of even their owners. The assessors must depend for the number upon the lists made by the owners. That the owner ever overestimates the number of either he has is hardly to be supposed; the rule is that there will be an estimate short of the actual number. There seems from year to year no diminution in the number returned for taxation, yet from other sources it appears that the consumption in the local and foreign markets exceeds any fair estimate of natural increase, based upon the returns for taxation.

The proper taxation of railroads is a question of difficulty. The theory of our local system, as it should be of all, is that of uniformity and equality. If all property were brought within the view of the assessor, and its actual cash value ascertained, the purposes would be effected. In the case of railroads in this Territory, one or two, or perhaps three, results must be reached involving necessarily inequality.

In considering the question of taxation the railroads of the Territory may be divided into three classes.

1. Those wholly exempt from taxes.

2. Those upon which an arbitrary tax has been fixed, independent of value, and which it is not within the power of the Territory to affect.

3. Those whose valuation are to be fixed by the Territorial board of equalization.

Of those exempt from taxation for stated periods, under acts of the local legislature, there is a relatively large proportion of all the railroad mileage in the Territory.

In the second class is the Santa Fe Pacific Railroad, extending across the Territory from east to west, a distance of 390.99 miles. This road constitutes a part of the transcontinental line of the Santa Fe. By an act of Congress it is provided that it shall pay to the Territorial treasurer the sum of $175 per mile in lieu and in full of all taxes leviable for Territorial or county purposes. This flat rate is arbitrary, and must in every instance be greater or less than the rule of equality would impose. At a 3 per cent rate of taxation (which is probably less than the actual rate) this would fix the valuation of one of, if not the most, valuable railroad lines in the Territory at

$5,833.33 per mile. And this must be assumed to be a valuation fixed, inferentially, by Congress. It would seem, therefore, unequal to assess a railroad of no greater actual value at a higher rate, just as it destroys every notion of equality to assess arbitrarily 390.99 miles of a total of 1,837 miles at $5,833.33, or approximately that, and wholly exempt another 558 miles of the total mileage from any taxation. At best, if the railroads were the only property upon which taxes were to be levied, it would seem fair that those having no greater value than the one whose valuation is, inferentially, fixed at $5,833.33 per mile should not be assessed at a higher rate than that, and that roads of less real value should, for the purposes of taxation, be assessed at less than $5,833.33 per mile. But the railroads are not the only property upon which taxes are to be levied, and hence, if a valuation upon them is to be fixed at a proportionately lower rate than upon other taxable property, an inequality arises that is unjust to the owners of other property than railroads.

The statute attempts to fix a standard by which "cash value" may be measured. Its language is that cash value means "the amount at which the property would be taken in payment of a just debt due from a solvent debtor." As the cash value at which a creditor would take property from a solvent debtor in discharge of his debt is so wholly dependent upon the mere caprice of the creditor, and the motive so to do, if he does so, more influential than the mere wish to have his debt discharged, this rule affords no standard at all. As a creditor has a right to have money in discharge of his debt, he likely would not take property at even its market value, even if that value were well established and not variant, and his willingness to take property in discharge of his debt will depend upon his whim or the advantage he may derive from discounting its value. There being, therefore, no practical standard fixed by the statute, only the approximate relative values of the several kinds of property is to be expected. Such a rule would not, fairly applied, affect or impair the rule of equality and uniformity of taxation. But such a rule is not apt to be fairly applied, although it is a usual one, not only in Arizona, but in most of the other States and Territories.

When a departure from a standard of real values is permitted the measure becomes uncertain, and too much is left to the caprice of the assessor or to the wish of the particular community to evade its just portion of the taxes. In many instances of considerable importance I find the valuation of property for taxation at less than a fourth of the real value; again as high as a third, a half, or even three-fourths of the fair cash value; and again I find many instances, exceptional perhaps, but considerable, where property has been assessed up nearly to its fair market value. There will be, as there always has been in any system, some irregularities and consequent injustice. In some investigations I have had to make into this subject I am led to the conclusion that, in the aggregate, real and personal property, other than mines and railroads, are assessed in this Territory at from 35 to 40 per cent of their fair market value. To say that this ought not to be is a just criticism, but is relived somewhat of its severity when we find that it applies not alone to Arizona.

The fair and just taxation of mines presents more difficulties than does that of any other property. In many instances the title to the

mines is still in the United States, the operator holding possession under the mining laws permitting him to exploit the mine, extract the ores, and convert them to his own use. This right of possession is exclusive so long as the operator complies with the laws as to assessment work, which involves only a nominal expenditure. The interest of the operator in such a mine, as well as the mine itself, is called a mining claim, as distinguished from a mine the title to which has passed to the claimant by patent from the Government. The only substantial difference between the rights of the owner of a mining claim and the owner of a mine is that the right of the former is defeasible upon neglect to do the annual assessment, while that of the latter is absolute and indefeasible. The right of either is a proper subject of taxation in this Territory. The somewhat precarious right of the owner of a mining claim, however, under any law for the enforcement of the taxes is practically ineffective, because before it can be finally enforced the owner may voluntarily suffer a forfeiture of his claim, and the mine reverts to and becomes a part of the public domain which is, of course, not taxable. In connection with the mine itself, and as appurtenant to it, whether patented or not, machinery and apparatus of various kinds are necessary for the carrying on of mining operations. This kind of property is subject to taxation, either as improvements upon real estate, in the case of the patented mines, or as personal property in the case of mining claims. The value of such property, however, intrinsic or relatively, for the purposes of taxation is very largely dependent upon the fact whether or not the mine, for the operation of which the machinery was supplied, is productive, and upon the extent of its productiveness.

The first cost of mining machinery and the cost of its installation upon a nonproducing mine, or upon one that has become nonproductive, is not a very important element to be taken into consideration in determining its value. It is often wholly valueless, and is always greatly depreciated below its first cost.

In the very nature of things it is almost impossible to arrive at the real value of a mine. It is almost pure speculation to say what is in advance of the drill. The quantity of ore in a mine is never accurately ascertained until it has all been extracted, and the mine thereby exhausted and rendered of no further value. The quality of the unextracted ore is a matter of more or less intelligent surmise. Of course, it can be determined of every mine that it has, or it has not, some value. It can often be safely said of a mine where its contents have been so exposed, and with reasonable certainty its quality ascertained, that it may be estimated with considerable accuracy that it is worth at least so much money—but there may be, and often are, great values beyond that. I recall an instance of a statement of a mine owner in this Territory that in his mine he had by exploration exposed and made known the existence of ore in quantity sufficient to require the full capacity of his reduction works for a term of fifty years. This statement was made ten years ago, and events have fully justified his statement. Possibly there may be others in which similar predictions have not been fulfilled.

It has been fairly well established that copper mines are more extensive in respect to their ore deposits than are gold and silver mines, and while not permanent are yet much longer lived.

During the year 1904, from the best evidence to which I have had

access, the product of copper from Arizona mines was 202,298,772 pounds. Estimating copper at 12 cents (the average price at New York for the year was 13.01 cents) this would give the value of the copper production of Arizona for 1904 as $24,275,852.64. With unimportant exceptions this entire output was produced at a profit. Of gold there was, according to official estimates, 161,750 ounces, which, at $20.78 per ounce, makes $3,361,165. Of silver there were 2,754,134 ounces, which, at 55 cents per ounce, makes the value of that product $1,514,773.70. Thus it would appear that the entire product of the copper, gold, and silver mines of the Territory for 1904 was $29,151,791.34.

For the year 1904 the total valuation of all property in the Territory for the purpose of taxation, including the mines, was $45,069,545.32. Of this total valuation, mines and all improvements thereon constituted only $4,443,255.70. From the best information I can find the dividends paid by copper-mining companies for that year, 1904, amounted to at least $6,000,000. It is quite evident upon investigation, too, that a considerable part of the profits of mining is absorbed by railroads which have been constructed by persons interested in the copper companies. Just how much of the profits are thus diverted I have no means of knowing, and the Territory has not conferred upon the governor or any other Territorial officer any inquisitorial powers in the matter. The history of copper mining in the Territory shows that there has been a steady increase of production. The best authorities on the subject predict a very large increase for the year 1905. The development of new mines, the extension of old ones, and the constant improvement in methods of treatment of the ore seem to justify this prediction.

In the discussion of the subject of the taxation of mines, another consideration must be borne in mind—a matter that must be kept in view, too, in discussing the matter of the taxation of the lumber industry in the Territory, to which I shall later advert.

Whether a mine is short or long lived, its continued operation will sooner or later result in its exhaustion. When the ores have all been extracted the mine is of course valueless. In this Territory the lands either occupied by the mine or under which the ores are found are practically valueless, except for the very purpose of mining, or adventitiously as the place of abode of laborers employed in mining and those who are engaged in vocations directly dependent upon the profitable operation of the mine. The product of the mines is just so much subtracted from the capital stock of the Territory, and there is no possibility of reproduction. An ounce of gold or silver or a pound of copper once taken from the mines is gone, and it will never be reproduced. The products of the culture of the soil is added wealth. The operation of cultivating the soil appreciates the value of the soil. The continued operation is one of reproduction. Where a ton of hay, a hundredweight of wheat or barley can be produced, other tons of hay and hundredweights of wheat or barley can be reproduced with no diminution of the capital stock. It is well established that for nearly three hundred years crops of grain have been produced from the Gila River lands by the Pima Indians, and that those lands are just as productive now as at the beginning. But mines must become exhausted and cease to be productive. It is the most

persuasive argument advanced by mine operators that mines may become, possibly in the next year, exhausted and consequently valueless, and that therefore they should not be valued high for purposes of taxation.

I entertain no doubt that the mines of Arizona will, as they have heretofore done, go on increasing their production in even an accelerated ratio, but notwithstanding that they will sometime become exhausted. It is to be hoped, and reasonably expected, that that time is many decades off. In the meantime, however, the cost of government—Territorial or State, county, and municipal—has to be borne, and the question is, What is the just proportion the mines should contribute of that cost? As I have before stated, the law provides for the valuation of property for taxation once each year. This is no doubt because of fluctuation in value from year to year. It suggests that the legislature had in mind the instability of values of lands and of mines in a new country. In many of the older States lands are valued for the purposes of taxation at intervals of several years—five or ten years, or even longer intervals. If in Arizona such a rule were applied, the difficulty of a proper or fair valuation of mines would be practically insuperable. It would seem that a mine, or given extent of land devoted to agriculture, or for the support of a house, as in towns, ought to be worth in any year at least the value of its product either of copper, gold, or silver in the one case, of hay, grain, etc., in the other, or its rent in the last. In the case of agricultural lands it is several times that, and so of lots in a town, and the value in this Territory is so fixed for taxation. Upon this basis no injustice could be done the mines if they were assessed for taxation on the basis of their actual product for the year precedent the one in which the tax is levied. This is easily ascertained, and it eliminates from consideration the question of the permanence or instability of the value of the mine. If it would vary from year to year in product, so too would the exaction for the support of government vary, and in just the like proportion. Certainly any less rate, taking all things into consideration, is manifestly and grossly unjust to other classes of property.

The lumber interests I find, too, have been inadequately taxed. As that business has been carried on it has made direct inroads upon the capital of the Territory. The cutting away of the forests where nothing would be left but barren wastes does not develop the resources of the Territory—it simply exhausts them. As with the products of the mines, the larger portion, practically all of it, is transported and permanently remains out of the Territory. The product serves very little to enhance the wealth of the Territory.

Nearly every governor of the Territory in his annual report has taken occasion to call attention to the gross undervaluation of mines for the purposes of taxation. The fault has been not so much in the law as in the disregard of it by the local taxing officers. It is conceded by estimates made by the most conservative experts that the mines of Arizona have not heretofore been assessed in the aggregate at 5 per cent of their value. At the recent meeting of the Territorial board of equalization (August 14–21, 1905) an attempt was made in the direction of remedying this palpable evil. So careless or ignorant in the discharge of their duties have been the local taxing offi-

cers that gross inequalities are found in the assessment of the mining properties. It would appear that because of this disregard of duty any step taken to rectify the inequality in the valuation of such properties may work hardships in individual cases. These cases, however, are not numerous. It is a usual result where those charged with the administration of law are ignorant, habitually careless, or corrupt that an attempt to return to a fair administration of it is temporarily followed by apparent hardships upon some.

The attempt of the board to rectify the undervaluation of mines has resulted in the addition of $9,115,141.43 to the valuation of taxable mining property, making the total valuation of mines and improvements $14,440,689.31. That many of the mines are yet greatly undervalued is recognized. It is hoped that in the near future these discrepancies will be remedied.

As shown by the last annual report of the governor, the total valuation of the property in the Territory for taxation was $45,069,545.32. For this year it is returned at $57,920,372.84, showing an increase of $12,850,827.52. Aside from the increase in valuation made by the board of equalization, the increase over the preceding year is $3,867,115.31, as against $1,981,504.70 increase last year over the then preceding year.

Notwithstanding this notable increase in the assessed valuation of property in the Territory, the board of equalization deemed it advisable to leave the tax levy for Territorial purposes at 95 cents on each $100 assessed—the same rate as last year—in order to safely meet the extraordinary expenditures made necessary by special appropriations and tax levies of the Twenty-third legislative assembly, and the fact that a 2 per cent levy for bond redemption was overlooked last year. There is no doubt, however, that the addition to our taxable wealth will result in lower taxes for county and other local purposes; it certainly will if a policy of careful economy is observed by the boards of supervisors of the several counties.

The tax rate prevailing in each county for all purposes in the calendar years 1904 and 1905, including the levy of 95 cents for Territorial purposes above mentioned, is shown in the following table. The tax rate for 1905 was fixed in each county on Monday, August 21, after the respective boards of supervisors had received the report of the Territorial board of equalization.

Rate of taxation, by counties.

County.	Total tax per $100.		County.	Total tax per $100.	
	1904.	1905.		1904.	1905.
Apache	$3.80	$3.80	Navajo	$3.60	$3.95
Cochise	3.20	2.90	Pima	3.00	2.625
Coconino	3.00	2.90	Pinal	3.75	3.75
Gila	3.95	3.25	Santa Cruz	3.85	3.95
Graham	3.50	3.75	Yavapai	4.00	4.00
Maricopa	2.25	2.50	Yuma	4.41	4.50
Mohave	4.00	4.00			

Territorial tax levy for 1905.

Fund.	Per $100.	Fund.	Per $100.
General fund	$0.1803	Ranger fund	$0.05
Interest World's Fair bonds	.003	Redemption fund	.0225
Interest St. Louis Exposition bonds	.003	Tempe Normal School fund	.05
Asylum for insane interest fund	.10	Do	.025
Do	.0025	Do	.015
Capitol interest fund	.012	Tempe Normal School building fund	.055
Interest fund	.13	Territorial school fund	.03
Industrial school fund	.04	University fund	.06
Northern Arizona Normal School fund	.03	University interest fund	.005
		Do	.0017
Northern Arizona Normal School dormitory fund	.015	Total	.95
Prison fund	.12		

BOARD OF EQUALIZATION.

The Territorial board of equalization completed its equalization of the valuation of all the taxable property in the Territory August 21, 1905, its action being based upon the returns made by the boards of supervisors of the several counties.

The following tables show in detail the valuations fixed by the board:

APACHE COUNTY.

Property.	Number.	Valuation.	Increase.
			Per cent.
Cultivated land, acres	2,948	$25,899.00	
Improvements		6,715.00	
Uncultivated land, acres	95,638	45,654.75	
Improvements		9,082.50	
Railroad land, acres	788,522.37	157,704.46	
Town and city lots		12,477.00	
Improvements		40,440.75	
Horses:			
Range	1,686	16,860.00	
Work	435	17,400.00	38
Saddle	453	9,060.00	
Stallions	2	125.00	
Mules	43	1,505.00	40
Asses	126	882.00	
Cattle:			
Range and stock	6,016	72,192.00	
Milch cows	295	7,375.00	25
Sheep	73,631	147,262.00	
Goats	505	1,010.00	
Swine	33	91.00	
Railroad, standard gauge (Santa Fe Pacific), miles	54.48	255,509.21	
All other property		147,813.54	
Total		975,058.21	

COCHISE COUNTY.

Cultivated land, acres	43,354	$153,696.41	
Improvements		50,510.00	
Land grants, acres	56,931	263,979.30	
Improvements		2,000.00	
Patented mines	634	3,568,295.52	1,500
Improvements		173,947.01	
Unpatented mines, improvements		9,900.00	1,000
Town and city lots		1,226,697.69	
Improvements		1,569,243.60	
Horses:			
Range	1,501	15,010.00	
Work	1,505	60,200.00	19
Saddle	1,337	26,740.00	31
Stallions	14	1,400.00	
Mules	145	5,363.00	

COCHISE COUNTY—continued.

Property.	Number.	Valuation.	Increase.
			Per cent.
Asses	54	$290.00	
Cattle:			
Range and stock	32,575	325,750.00	
Beef	191	3,145.00	
Milch cows	707	20,760.00	
Bulls	408	23,800.00	
Sheep	200	375.00	
Goats	4,176	8,365.00	
Swine	272	724.00	
Railroad, standard gauge, miles	231.05	1,157,459.24	
Side track, do	24.47	61,175.00	
All other property		3,215,653.87	
Improvements, railroads		265,083.67	
Total		12,209,563.31	

COCONINO COUNTY.

Cultivated land, acres	40,620	$144,260.00	
Improvements		25,025.00	
Railroad land, acres	118,650	569,531.16	
Land grants, do	285,034	70,870.50	
Improvements		1,700.00	
Patented mines		5,800.00	
Improvements		5,050.00	
Town and city lots		141,148.00	
Improvements		330,985.00	
Horses:			
Range	1,858	18,580.00	
Work	723	28,920.00	
Saddle	783	19,573.00	
Stallions	3	300.00	
Mules	16	560.00	17
Asses	250	1,290.00	
Cattle:			
Range and stock	33,032	341,881.20	
Milch cows	172	4,300.00	
Bulls	27	1,520.00	
Sheep	143,929	287,858.00	
Goats	750	1,500.00	
Swine	62	310.00	
Railroad, standard gauge, miles	25	36,758.00	
Railroad, standard gauge (Santa Fe Pacific), do	108.37	632,176.00	
All other property		1,124,346.08	
Total		3,794,261.94	

GILA COUNTY.

Cultivated land, acres	5,229	$23,220.00	
Improvements		11,715.00	
Patented mines	67	1,226,500.00	400
Improvements		395,620.00	
Unpatented mines, improvements		55,680.00	
Town and city lots		219,850.00	
Improvements		287,460.00	
Horses:			
Range	822	8,220.00	
Work	657	26,280.00	59
Saddle	1,365	27,305.00	
Stallions	9	405.00	
Mules	578	20,230.00	40
Asses	240	1,200.00	
Cattle:			
Range and stock	34,181	341,810.00	
Milch cows	972	2,430.00	
Bulls	7	175.00	
Sheep	120	240.00	
Goats	21,136	42,276.00	
Swine	342	1,032.00	
Railroad, standard gauge, miles	32.24	88,660.00	
All other property		413,890.28	
Total		3,194,198.28	

GRAHAM COUNTY.

Property.	Number.	Valuation.	Increase.
			Per cent.
Cultivated land.....acres..	55,191	$489,897.25	----------
Improvements	----------	378,566.40	----------
Railroad land.....acres..	25	500.00	----------
Patented mines	234	2,697,663.30	400
Improvements	----------	688,730.00	----------
Town and city lots	----------	110,143.50	----------
Improvements	----------	241,033.00	----------
Horses:			
Range	1,031	10,310.00	----------
Work	1,196	47,840.00	----------
Saddle	1,997	49,925.00	----------
Stallions	5	790.00	----------
Mules	169	6,760.00	----------
Asses	92	920.00	----------
Cattle:			
Range and stock	40,528	405,280.00	----------
Beef	27	270.00	----------
Milch cows	842	21,050.00	----------
Bulls	33	660.00	----------
Sheep	510	1,020.00	----------
Goats	12,471	28,942.00	----------
Swine	346	1,038.00	----------
Railroad:			
Standard gauge.....miles..	124.96	425,969.00	----------
Narrow gauge.....do....	26	67,050.00	----------
Side track.....do....	----------	1,000.00	----------
All other property	----------	762,998.63	----------
Railroad improvements	----------	59,025.35	----------
Narrow-gauge side track.....miles..	----------	9,000.00	----------
Total		6,502,381.43	----------

MARICOPA COUNTY.

Cultivated land.....acres..	293,388	$3,569,977.00	----------
Improvements	----------	482,725.00	----------
Patented mines	14	7,000.00	----------
Improvements	----------	5,250.00	----------
Improvements, unpatented mines	----------	11,500	----------
Town and city lots	----------	2,397,790.00	----------
Improvements	----------	1,874,185.00	----------
Horses:			
Range	1,807	18,070.00	----------
Work	3,560	142,400.00	60
Stallions	25	2,625.00	----------
Ostriches	1,103	55,150.00	----------
Mules	267	9,345.00	29
Asses	10	820.00	----------
Cattle:			
Range stock	17,843	178,430.00	----------
Calves	2,675	13,375.00	----------
Milch cows	5,696	142,400.00	----------
Bulls	318	8,135.00	----------
Sheep	4,615	9,230.00	----------
Goats	1,608	2,410.00	----------
Swine	3,817	8,533.00	----------
Railroad, standard gauge.....miles..	97.19	647,436.11	----------
All other property	----------	1,279,649.19	----------
Less exemptions ($228,015.00)	----------	----------	----------
Total	----------	10,638,420.30	----------

MOHAVE COUNTY.

Cultivated land.....acres..	1,070.5	$3,915.00	----------
Improvements	----------	97,824.00	----------
Railroad land.....acres..	42,445.03	8,489.00	----------
Patented mines	133	746,375.00	400
Improvements on patented mines	----------	120,217.00	----------
Improvements on unpatented mines	----------	25,980.00	----------
Town and city lots	----------	36,792.00	----------
Improvements	----------	76,290.00	----------

MOHAVE COUNTY—continued.

Property.	Number.	Valuation.	Increase.
Horses:			*Per cent.*
Range	674	$13,480.00	
Work	326	16,300.00	
Saddle	508	17,780.00	
Stallions	1	50.00	
Mules	6	210.00	1
Asses	36	210.00	
Cattle:			
Range and stock	9,324	93,240.00	
Milch cows	110	2,750.00	22
Sheep	8,125	16,250.00	
Goats	1,350	2,700.00	
Swine	42	210.00	
Railroad, standard gauge ..... miles	107.881	[a]471,979.38	
All other property		96,110.80	
Less widows' exemptions ($11,326.00)			
Total		1,835,826.18	

NAVAJO COUNTY.

Cultivated lands ..... acres	2,382	$39,196.50	
Improvements		13,859.00	
Uncultivated land ..... acres	9,934.54	17,955.58	
Railroad land ..... do	721,108.57	144,217.72	
Land grants ..... do	336,925.99	67,385.19	
Improvements		1,000.00	
Town and city lots		86,795.46	
Improvements		199,126.75	
Horses:			
Range	1,230	12,300.00	
Work	498	19,920.00	1
Saddle	502	10,680.00	
Stallions	6	550.00	
Mules	7	245.00	100
Asses	131	655.00	
Cattle:			
Range and stock	6,354	76,248.00	
Milch cows	418	10,420.00	24
Bulls	9	205.00	
Sheep	74,185	148,370.00	
Goats	425	850.00	
Swine	206	808.00	
Railroad, standard gauge (Santa Fe Pacific) ..... miles	57.155	263,200.00	
All other property		281,519.94	
Forest reserves ..... acres	44,638.96	111,596.90	
Total		1,507,104.04	

PIMA COUNTY.

Land ..... acres		$99,252.00	
Improvements		45,195.00	
Uncultivated lands ..... acres	75,524	298,233.00	
Improvements		15,731.00	
Land grants ..... acres	17,208	12,906.00	
Improvements		1,500.00	
Patented mines	288	629,142.00	500
Improvements		6,150.00	
Town and city lots		1,066,897.33	33⅓
Improvements		1,351,026.00	
Horses:			
Range	398	4,025.00	
Work	728	29,120.00	66
Saddle	503	10,060.00	
Stallions	11	430.00	
Mules	79	2,765.00	40
Cattle:			
Range and stock	20,685	206,940.00	
Milch cows	260	6,500.00	6
Sheep	2,250	4,500.00	
Brood mares	757	7,570.00	

[a] Estimated.

PIMA COUNTY—continued.

Property.	Number.	Valuation.	Increase.
			Per cent.
Railroad, standard gauge ..... miles..	64.75	$461,345.60	
All other property		773,928.00	
Pullman Co		5,008.00	
Total		5,041,223.33	

PINAL COUNTY.

Cultivated and uncultivated lands ..... acres..		$391,417.25	
Improvements		53,571.00	
Patented mines	72	69,600.00	
Improvements		41,225.00	
Unpatented mines, improvements		53,311.00	
Town and city lots		36,560.50	
Improvements		61,455.00	
Horses:			
Range	799	7,990.00	60
Work	552	22,080.00	66
Saddle	510	10,200.00	12
Stallions	7	450.00	
Mules	90	3,150.00	52
Asses	76	510.00	
Cattle, range and stock	13,445	161,893.00	
Sheep	2,500	5,000.00	
Goats	2,055	4,110.00	
Swine	398	1,133.00	
Railroad, standard gauge ..... miles..	88.28	478,517.62	
All other property		32,991.38	
Total		1,435,164.75	

SANTA CRUZ COUNTY.

Cultivated land ..... acres..	13,617	$35,572.00	
Improvements		57,600.00	
Land grants ..... acres..	45,235	65,613.30	
Improvements		10,000.00	
Patented mines	50	381,150.00	500
Improvements		4,500.00	
Unpatented mines, improvements		29,500.00	
Town and city lots		207,621.00	
Improvements		273,340.00	
Horses:			
Range	1,429	14,295.00	
Work	396	15,840.00	60
Saddle	632	12,735.00	
Stallions	10	385.00	
Mules	82	2,870.00	60
Asses	166	599.00	
Cattle:			
Range and stock	23,036	230,360.00	
Milch cows	98	2,617.00	
Bulls	280	5,435.00	
Swine	84	289.00	
Railroad, standard gauge ..... miles..	524	222,689.85	
All other property		300,565.02	
Total		1,873,576.17	

YAVAPAI COUNTY.

Cultivated land ..... acres..	138,956.46	$199,414.04	
Improvements		119,975.00	
Railroad land ..... a res..	210,689.76	46,503.46	
Land grants ..... do...	99,445.20	49,722.51	
Improvements		3,000.00	
Patented mines	1,224	2,238,028.48	100
Improvements		970,735.00	
Unpatented mines		176,760.00	
Town and city lots		528,256.50	
Improvements		908,605.00	

YAVAPAI COUNTY—continued.

Property.	Number.	Valuation.	Increase.
Horses:			*Per cent.*
Range	1,838	$18,380.00	17
Work	1,783	71,320.00	50
Saddle	1,152	29,415.00	.....
Stallions	7	475.00	.....
Mules	22	7,770.00	50
Asses	240	1,490.00	.....
Cattle:			
Range and stock	27,395	27,395.00	.....
Beef	60	700.00	.....
Milch cows	640	1,600.00	½
Bulls	13	350.00	.....
Sheep	29,147	58,294.00	.....
Goats	17,670	35,340.00	.....
Swine	648	1,925.00	.....
Railroads:			
Standard gauge ..... miles	60.558	264,941.25	.....
Narrow gauge ..... do	27.3	110,000.00	.....
All other property	.....	1,218,963.85	.....
Total	.....	7,350,314.09	.....

YUMA COUNTY.

Cultivated land ..... acres	58,285	$244,527.00	.....
Improvements	.....	7,090.00	.....
Patented mines	52	72,012.00	500
Improvements	.....	14,870.00	.....
Unpatented mines, improvements	.....	10,198.00	.....
Town and city lots	.....	236,305.50	.....
Improvements	.....	114,935.00	.....
Horses:			
Range	187	2,057.00	.....
Work	1,008	40,320.00	60
Saddle	20	500.00	25
Stallions	2	175.00	.....
Mules	116	4,060.00	.....
Cattle:			
Range and stock	1,650	18,150.00	.....
Beef	5	70.00	.....
Milch cows	199	4,975.00	25
Bulls	3	46.00	.....
Swine	724	2,172.00	.....
Railroad, standard gauge ..... miles	82.5	587,816.28	.....
Pullman Co	.....	6,381.30	.....
All other property	.....	166,884.38	.....
Private car lines	.....	29,736.35	.....
Total	.....	1,563,280.81	.....

Aggregate valuations of all classes of property as found by the board of equalization.

Property.	Number.	Valuation.
Cultivated and uncultivated lands ..... acres	9,194,843	$5,420,263.45
Improvements	.....	1,353,370.40
Uncultivated land ..... acres	181,096.54	361,843.33
Improvements	.....	24,813.50
Railroad land ..... acres	1,881,440.73	926,945.80
Improvements	.....	19,200.00
Patented mines	.....	11,641,566.30
Improvements	.....	2,426,294.01
Improvements on unpatented mines	.....	372,829.00
Town and city lots	.....	6,307,334.48
Improvements	.....	7,328,125.10
Horses:		
Range	15,260	159,577.00
Work	13,367	537,940.00
Saddle	9,762	223,973.00
Stallions	104	8,160.00
Mules	1,820	64,833.00

Aggregate valuations of all classes of property, etc.—Continued.

Property.	Number.	Valuation.
Asses	1,421	$8,866.00
Cattle:		
Range and stock	266,064	2,726,124.20
Beef	283	4,185.00
Milch cows	10,409	241,577.00
Bulls	1,098	40,326.00
Sheep	339,212	678,399.00
Goats	62,148	123,503.00
Swine	6,974	18,265.00
Miles railroad:		
Standard gauge	1,187.214	5,994,456.94
Narrow gauge	53.3	177,050.00
Other railroad property		368,234.67
Side track	50.47	62,175.00
Ostriches	1,103	55,150.00
All other property		9,926,911.86
Calves	2,675	13,375.00
Brood mares	757	7,570.00
Total		58,159,713.84
Less exemptions		239,341.00
Total		57,920,372.84

Assessed valuation of the Territory, by counties, for the years 1904 and 1905.

County.	Assessed valuation.		Increase.
	1904.	1905.	
Apache	$1,044,645.60	$975,058.21	[a] $69,597.39
Cochise	6,850,132.49	12,209,563.31	5,359,430.82
Coconino	3,240,483.90	3,794,261.94	553,778.04
Gila	1,481,827.00	3,194,198.28	1,712,371.28
Graham	5,005,432.86	6,502,381.43	1,496,948.57
Maricopa	10,413,326.00	10,866,435.30	453,109.30
Mohave	1,308,689.29	1,847,152.18	538,462.89
Navajo	1,262,823.97	1,507,104.04	244,280.07
Pima	4,109,463.40	5,041,223.33	931,759.93
Pinal	1,620,634.40	1,435,164.75	[a] 185,469.65
Santa Cruz	1,476,298.83	1,873,576.17	397,277.34
Yavapai	5,973,083.79	7,350,314.09	1,377,230.30
Yuma	1,282,703.79	1,563,280.81	280,577.02
Total	45,079,431.32	58,159,713.84	13,090,168.52
Less exemptions	9,886.00	239,341.00	239,341.00
Total	45,069,545.32	57,920,372.84	12,850,827.52

[a] Decrease.

Valuation placed on railroad property for the year 1905.

Name.	Miles.	Rate.	Valuation.
Southern Pacific	392.5	$7,125.045	$2,796,580.35
El Paso and Southwestern	86.3	6,750.00	582,525.00
Maricopa and Phoenix and Salt River Valley	34.93	4,970.00	173,618.87
Arizona and New Mexico	40	5,504.50	220,180.00
New Mexico and Arizona	87.8	4,249.80	373,133.00
Morenci Southern	18	3,655.55	65,800.00
Central Arizona	11	2,000.00	22,000.00
Saginaw and Manistee	14	1,054.166	14,758.32
Gila Valley, Globe and Northern	124.3	3,128.7	388,897.40
United Verde and Pacific	27.3	4,029.304	110,000.00
Arizona Copper Co	8	2,500.00	20,000.00
	844.13		4,767,492.94
Santa Fe Pacific	386.734		[a] 1,873,246.25
Pullman Co			105,413.04
Total	1,230.864		6,746,152.23

[a] Estimated at current tax rate, as represented by $175 per mile.

The value of the railroads which are exempted from taxation can only be estimated, of course, by applying to the exempted roads the same ratio of valuation that has been applied to roads that are assessed. By this ratio the following valuations are found:

Railroad.	Miles.	Estimated valuation.
Phoenix and Eastern	94.80	$474,000.00
Arizona and California	49.20	286,000.00
Prescott and Eastern	61.90	216,000.00
Arizona and Utah	54	216,000.00
Cananea, Yaqui River and Pacific	.51	2,500.00
Arizona Southern	23	115,000.00
Santa Fe, Prescott and Phoenix	194	970,000.00
Grand Canyon	64	224,000.00
Total	558.40	2,652,500.00
Santa Fe Pacific[a]	386.734	2,785,979.69
Assessed roads and Pullman Co	----------	4,873,905.98
Total	----------	10,312,385.67

[a] By act of Congress is taxed at a flat rate of $175 per mile, but value of which is here estimated at $7,125.45 per mile, the same as the Southern Pacific.

MINING.

Mining is Arizona's chief industry. It yields greater returns than all other industries combined. The value of the products of the mines of the Territory during the last fiscal year was not less than $30,000,000. Copper is the principal product, although the production of gold is steadily increasing from year to year. This Territory is the third district of the United States and the fourth in the world in point of copper production. Before many years it will be first. It estimated that one-fourth of all the copper mines in the United States are situated in Arizona.

Although the first copper made in Arizona was turned out of an adobe furnace (at Clifton) in 1873, it is within the last ten years that the production has reached enormous proportions. Copper ores are found in more or less profusion in nearly every county of the Territory, but the well-developed districts are four in number—Bisbee, in Cochise County, 6 miles from the Mexican boundary; Jerome, in Yavapai County, in the north-central portion of the Territory; Clifton and Morenci, in Graham County, on the southern border of the Territory; and Globe, in Gila County, near the center of the Territory. Other and newer districts are becoming important producers, however.

Probably gold is found more generally distributed in all parts of Arizona than is copper. It occurs as placer deposits or in veins in nearly every mountain range from Yuma on the west to the Chiricahuas on the east, and from the Mexican border to the Colorado Plateau on the north. In short, an attempt to show the geographical distribution of the mineral wealth of the Territory results in the generalized statement that all of the mountain ranges are mineral bearing, but the chief region of occurrence of the precious metals and of copper and lead and of other metals and minerals lies south of the Grand Canyon region and of the great lava districts which surround the extinct volcanoes of the San Francisco Mountains. Most of the mountain ranges are strongly scarped and eroded and are generally

bare of vegetation, and their wealth of minerals is more accessible to prospectors than is the case with the mining regions of the Rocky Mountain States.

The Territory enjoys unique advantages in respect of climate in working mines and ores. Mining in the open air, without the protection of buildings, can be conducted every day in the year without hindrance from cold or extreme frost. Even in the midst of the Bradshaw Mountains or the central mountain ranges, snow seldom falls to so great a depth as to interfere seriously with mining work or to impede transportation. The weather at all seasons is comparatively dry and bracing, and in midsummer mining operations are conducted without cessation. In midwinter the days are bright and clear and are highly favorable to protracted labor. An economic and industrial advantage in being able to work mines and mills without hindrance or interruption from the weather may be best appreciated by those who have had to combat the fierce storms of Colorado, Montana, Idaho, and Utah.

The mining of gold and silver in Arizona began with the earliest settlement of the new world by the Spaniards. The early colonists of Mexico made incursions into Arizona in search of mineral wealth. There is historical foundation for the statement that Cabeza de Baca, one of Spain's most intrepid explorers, after deserting Narvaez in Florida, in 1538, made his way westward across the Mississippi and Rio Grande and to the Moqui villages in northern Arizona before he turned south to Mexico. According to Hamilton, Cabeza de Baca and his servant were the first foreigners to set foot on what is now Arizona soil. They carried to Mexico the aboriginal stories of the great wealth of the "Seven Cities of Cibola," and it was in search of the fabled seven cities that the mineral wealth of this region first became known to the Spaniards. About one hundred and fifty years later, or in 1687, the Jesuit missionaries, Fathers Kina and Salvatiero, established the first mission within the region now known as Arizona. Thirty years later there were nine missions firmly established. It is known that the Jesuit fathers in charge of the missions gave some attention to mining, and there are many places where remains of the Mexican style of furnace are found as well as piles of slag, which bear witness of the enterprise and industry of these early metallurgists. About the year 1700 reports reached the City of Mexico of the discovery of great masses of native silver in the northern regions in the locality since known as the Planchas de Plata, and not far from the present international boundary line near the present town of Nogales. That large quantities of silver were produced is likely from the fact that a prosecution was instituted by the royal treasurer of Spain against the discoverers of Arizona for having defrauded the royal treasury of the duties payable upon the masses of pure silver found there. Philip V, of Spain, on the 28th day of May, 1741, issued a decree terminating the prosecution and declared the district of Arizona to be royal property as a place in which silver was created. This decree recited that the weight of the balls, sheets, and other masses of silver then taken from the Planchas de Plata amounted in all to 4,033 pounds—one piece weighed 2,700 pounds.

The Territorial geologist (Prof. William P. Blake), from whose data, gathered in former years, these notes are made, makes the interesting statement that the royal decree of 1741 made the first official use of the name Arizona. In 1687 a Jesuit missionary from the province of Sonora descended the valley of the Santa Cruz River to the Gila, which he followed to its mouth, now the site of Yuma. From this point he retraced his course to the Salt River and thence into Mexico. He procured authority from the head of the order in Mexico and established missions and settlements at numerous points. In a report to the viceroy of Spain he made a glowing statement of the mineral wealth of the new region. The reports of the immense wealth of the new country made by the Jesuits induced a rapid settlement. The mission towns of Tucson, Tubac, El Rey, St. Mark, San Salvador, Santa Cruz, Quidora, Rosario, San Fernando, and others were established. From the year 1757 to 1820 the Spaniards and Mexicans continued to work many valuable mines. From notes found and copied by the late Gen. Charles P. Stone in the City of Mexico it appears that more than 100 silver and gold mines were worked in the provinces of Sonora and Arizona by the Spaniards.

These discoveries account for Arizona's early prestige as a land of fabulous wealth, especially in silver. Very little appears to have been put on record in those days concerning the wealth of gold.

According to Professor Blake, the discovery of gold upon the American River in California in 1848 marks the most important era in the history of mining in Arizona. The Territory, then a part of Mexico, lay directly in the path of the gold seekers, not only from the Southern States, but from Mexico and Sonora. Mines in Sonora were deserted, and the route into California by way of Yuma was crowded with Mexican miners and their families bound for the new El Dorado. The thousands who pressed westward across the desert-like stretches along the Gila River gave little heed at the time to the riches immediately about them, but many of them, failing to find fortunes in California, returned a few years later and began prospecting in Arizona. New Mexico was ceded to the United States in 1848. Southern Arizona, south of the Gila River, was still Mexican territory. The Gadsden purchase was consummated in 1853. The work of the United States and Mexican Boundary Commission during the years from 1850 to 1853 and the exploration of Emory and Bartlett greatly stimulated the interest in this then comparatively unknown land. So also the explorations in search of a good route for a transcontinental road largely added to the public knowledge of New Mexico and hastened the development of Arizona. The overland mail route, commonly known as the "Butterfield route," was established in 1858. This gave access to the interior, which previously had been almost inaccessible, and greatly promoted immigration and the development of the mineral resources of the region.

Upon the acquisition of the country under the Gadsden treaty, active exploration of the mineral fields of southern Arizona by citizens of the United States commenced. As early as 1855 mining settlements in the Gadsden purchase were made at Arivaca, Sopori, the Arizona Mountains, the Santa Rita Range, Cerro Colorado, and the region about Tubac. Still earlier, in 1820, the mines near Fort Webstermouth, on the Gila River, were worked to great advantage,

and so rich was the ore that it paid for transportation on muleback more than a thousand miles to the City of Mexico.

But the pioneer miners throughout the early history of Arizona had to contend with a multitude of disadvantages and misfortunes, not the least of which was the maintenance of constant warfare with hostile Apaches. The real development of Arizona as a mining country began with the building of the transcontinental railroads through the Territory, and it is only since the construction of numerous branch lines within the last ten years that the mining industry has placed the Territory in the front rank.

The following notes, furnished by the Territorial geologist, give in a general way the progress of mining during the last fiscal year:

NOTES ON THE YEAR'S PROGRESS IN MINING.

[By William P. Blake, Territorial geologist.]

The Territory of Arizona is justly celebrated for the extent and variety of its mineral products. It is not only a large producer of copper, but also of gold, silver, lead, zinc, tungsten, molybdenum, and vanadium, the three last-named ores being of comparatively rare occurrence in other portions of the United States. Other mineral products may be added to this list, though not yet extensively worked or utilized, among these being coal, quicksilver, clays of various grades, some of the gems and ornamental stones, particularly some choice varieties of lime-onyx. The occurrence of saltpeter is reported, and there are well-known sources of salt and sulphate of soda, or Glauber's salt. A mine of asbestos is being worked in the canyon of the Colorado.

This diversity may be attributed to the diversity of geologic formations; to uplifts of various ages, and to the enormous erosion and cutting down of the mountain ranges by which mineral veins and deposits have been brought to light. Such erosion is manifest not only in the Grand Canyon of Arizona, where the pages of geological record of past ages are cut through, but in every mountain range, and in the succession of mountain ranges and broad valleys from the Gulf of California to the Sierra of New Mexico. And to this grand cutting down and wearing away of the elevations we also owe the wonderful agricultural capabilities of the great valleys of the Colorado, of the Gila, and of Salt River.

The soils of these valleys, unsurpassed in fertility, owe their excellence in large degree to the great variety in the mineral composition of the rocks from which they were derived during untold ages of grinding and trituration in the beds of mountain torrents. Thus the floods in the canyons, while breaking out the gold-bearing veins and laying bare mineral deposits for the miner, bear downward and onward the finer materials to be spread out in inviting fields for the farmer. The two great industries of mining and agriculture, being by nature so placed side by side and in close relation and interdependence, should be developed together harmoniously and advantageously.

GOLD.

The very general distribution of the sources of this metal, and the fact that in Arizona it is more generally diffused in and associated with mineral sulphides, has been mentioned in former reports.

Of distinctively gold mines, where this metal is the chief product of value, the Congress mine is probably the foremost example. It is upon a vein which has been followed down from the surface for more than 3,000 feet, and has been a large producer without interruption for years. The ore is largely pyrite, and is for the most part roasted and then cyanided for the extraction of the gold. No details have been received of the product for the year 1904. A crosscut at a considerable depth from the outcrop has developed an underlying parallel vein of high value, which is believed to extend to the surface and to offer a large production of paying ore for many years to come. A very promising strike of extremely high-grade ore was reported early in this year.

At the Octave mine, which was shut down early in 1905, work was resumed in June.

The King of Arizona, in Yuma County, has maintained its usual production.

The Commonwealth, at Pearce, has been closed, owing to caving in, and will not be reopened for the present. The large accumulations of tailings below the mill will be treated by the cyanide process. Mr. John Brockman, the superintendent and general manager since the purchase of the property, has secured a mine in Mohave County to which he is giving his attention.

The Gold Roads mine, in Mohave County, has completed a crosscut at the 600-foot level, reaching the vein, which is reported to have a width of 40 feet and to be of high grade.

The Vanderbilt, also in Mohave County, is being worked by the Cerbat Mountain Mining Company. A strike of very high-grade ore is reported.

In Graham County, in the Gold Hill district, a few miles north of Metcalf on the San Francisco River, a vein of free-milling gold ore of high grade has been opened by Col. Ben. M. Crawford, and is worked by a Los Angeles company of the same name. The ore is soft and ferruginous, and contains much lime-carbonate. It occurs near the contact of an altered limestone with granite.

The continued heavy rains of the winter of 1904 and 1905 greatly stimulated and promoted placer mining throughout the Territory. Chispas, or small nuggets, were picked up in the Weaver district, and 30 of them, worth from $2 to $75 each, were exhibited at Prescott.

The tributaries of the Hassayampa, at Walnut Grove, have also been producing, and several nuggets valued at $30 or $40 each are reported. The gold placers on Lynx Creek, Yavapai County, are under exploration by a company known as the International. A machine capable of handling 1,000 tons of gravel and dirt is in use.

The historic gold-bearing placers at Greaterville, on the eastern slopes of the Santa Rita Range, about 40 miles southeast of Tucson, have received much attention, and have been largely explored and worked through the energy and capital of Mr. G. B. McAneny, of California, and formerly of Tombstone. He has had a careful topographic survey made, and has constructed a ditch or aqueduct several miles long to carry water from the chief drainage canyon on the southeast slope of the mountain, where there is a heavy flow of water in the seasons of snow and rain. This aqueduct is cut for miles around one of the chief spurs of the Santa Rita in a conglomerate of massive proportions—a very thick bed of bowlders and porphyries of various colors and crystalline condition, and of all sizes from gravelly aggregates to bowlders 2 feet or more in diameter. These are all thoroughly rounded and so completely united or welded together as to resist the separation of one bowlder from another. They break under the blasts through the center of the bowlders, and not along the contacts, as if the whole formed one homogeneous mass of rock.

The heavy rainfall of the winter permitted the aqueduct to run full and to supply enough water at the placers, and particularly to those along the Boston Gulch, to install a hydraulic plant and long board sluices, by which a considerable area of the gravelly placer deposit was washed, with fairly satisfactory results. Many chispas were found, and the condition of the gold was such as to indicate that it had not been washed far from its source. The source of the gold of these Greaterville deposits has long been an enigma. It is probable that there are several sources. Coarse gold occurs in wire-like filaments in a stratum of peculiar argillaceous limestone, deposited in thin and numerous layers like the leaves of a book; and when, as is generally the case, it stands on edge it so much resembles an upturned volume that it merits the name of book limestone, which may be applied to it. This book limestone forms a series of layers aggregating 2 or 3 feet in thickness, and is very much bent, folded, twisted, and contorted, and where faulted and broken and reunited by oxide of iron and ferruginous talc spar, with probably some organic substance, gold is frequently found in it in coarse, wire-like filaments.

The whole region is very interesting from a geological point of view. From the results of a reconnoissance which I made for my friend, Prof. George W. Maynard, of New York, who was engaged in a careful inspection of the average value of the placers, I am led to conclude that the bulk of the Santa Rita Mountain, Old Baldy and Mount Wrightson, is made up of volcanic ejecta, now in the form of conglomerates and sandy tufas from the base to the summit, especially on the southeastern slopes, extending at a gentle grade from the summit of the mountain toward Patagonia, the Sonoita, and Nogales. It appears to be one great connected field of tufaceous deposits, giving evidence of former great volcanic activity in that section. The northern portion of the Santa Rita is granitic and porphyritic, with also very thick Paleozoic strata of

conglomerates, sandstones, and limestones. At Greaterville there is a well-marked horizon of Devonian, and in the Box Canyon section the sequence of the strata of limestone, red shale, and conglomerate, all resting upon granite, is admirably shown.

SILVER.

The chief mines of the Tombstone district, though generally regarded as producing silver only, might equally well be grouped with the gold mines, for as depth is reached on the lodes the gold contents of the ores are found to increase, and in some of the quartz ores of the Tranquility claim free gold in handsome specimens is not uncommon. The great enterprise of reopening the mines and pumping out the water, which for many years has prevented mining below the 600-foot level, has proceeded steadily. The level of the water has been lowered some 200 feet or more, permitting mining and drifting upon the 700 and 800 foot levels. Shipments of ore have been made regularly. The company has just installed a pump, in addition to the powerful pumps now in use, with a capacity of 2,500,000 gallons, which will carry the total daily pumping capacity to 6,000,000 gallons.

The Lucksure Company, working one of the outlying manganiferous mines near Tombstone, has been shipping ore at the rate of 4 carloads a week.

There have not been any recent developments of the other various important silver properties of the Territory, except possibly the reopening of the Peck mine, in the Bradshaw Mountains, formerly a large producer of silver. Crosscutting the ledge is now in progress to intersect the prolongation downward of the rich chute of ore which was mined in the upper levels.

In the Salero district work on the Eureka and Mabel claims in the Salero group was continued through the year without interruption, and shipments have been made of a high grade of ore to the El Paso smelter. This ore carries galena, gray copper, and native silver in a gangue of manganese spar and quartz. The workings are supposed to be upon the same lode from which the early settlers of this region procured the ore to be smelted at the old Tumucacori Mission, which yielded the silver for the lavish adornments of the altar and to make the saltcellars for the table of the bishop.

The Darwin mine, in the same region, only a mile or two south of the Eureka, has been lying idle for a year, except as the annual assessment required, owing to the giving out of a steam-power boiler, but work is now resumed and will be pressed until the ledge is fully crosscut at the 200-foot level, with the expectation of cutting the downward pitch of the main chute of copper-silver ore.

The World's Fair mine, south of Patagonia, which was reported sold, and from which some shipments were made, is still in the possession of its former owner, but is closed, it is stated, by litigation.

The ownership of the famous Mowry mine of silver-lead ore was transferred during the winter to a New York syndicate, and the mine has been steadily worked. There is much need of a smelter for this ore, and the project of building one and of the construction of a railway from the mine to the International Railway, near Patagonia, has been seriously discussed.

LEAD.

The lead ores of Arizona, without known exception, are silver bearing.

The localities of lead ores are numerous and widely spread. One of the most important districts is that of Castle Dome, about 30 miles north of Yuma, near the Colorado River, from which shipments are made to San Francisco. The ore is galena and is free from association with arsenical minerals or pernicious compounds. The lead made from it is remarkably pure and soft and is greatly prized for corroding by the manufacturers of white-lead paint. The galena carries from 20 to 30 ounces of silver to the ton of 2,000 pounds. Fluorspar is the chief gangue mineral. The veins are numerous and regular and have long been worked. The outcrops were followed and stripped to a depth of several feet by prehistoric miners.

The Flux mine, near Patagonia, is a large deposit of lead ore, worked at intervals, as required by the owner, Col. R. R. Richardson.

The Plomo mine in the Sazero and other lodes and claims in the same district are capable of supplying quantities of lead ore suitable for fluxing dry ores. The Plomo is reported sold to an eastern syndicate, and is to be opened by a deep tunnel. A railway is also projected to extend from the mine to the Sonoita Valley to connect with the International Railway at the point where it shall be decided to place a smelter.

In the Chiricahua Mountains, Col. E. P. Hand has been successfully extracting ore and shipping galena and lead carbonates for some years past. These ores occur in limestone of the age of the Lower Carboniferous.

Nearly all the lead ores of Arizona are associated with molybdenum, which appears in the form of wulfenite, the molybdate of lead, wherever the sulphide decomposes by oxidation. We are justified in believing that the molybdenum exists in the galena, or closely associated with it, in the form of molybdenite, the sulphide.

MOLYBDENUM AND VANADIUM.

The molybdate of lead derived, as above stated, occurred in notable quantity in the gold and lead-bearing ore of the Mammoth mine, at Shultz, in Pinal County. This mineral, by the crushing and milling operations, accumulated in the tailings. It was obtained by sluicing, and several carloads were shipped away, until the supply was exhausted.

There are several localities where both molybdate of lead and the vanadate of lead occur together, but owing to this mixture have not been commercially available.

Molybdenite, the sulphide, occurs in notable quantity in quartz at the claims of W. B. McClary, in the Santa Rita Mountains. These veins have been partly opened. Tests made in New York at the works, 17 Broad street, by means of resinous compounds, show a remarkably perfect separation of the sulphide from the quartz, the product being clean white quartz on one hand and the lustrous graphitic molybdenite on the other.

TUNGSTEN.

Shipments of the manganiferous wolframite, known as hueberite, on a small scale have continued from the claims north of Dragoon Station, on the Southern Pacific Railway. The ore is now obtained chiefly from the arroyos, from the gravelly deposits formed by the erosion of the rocks and veins. Some remarkably large and heavy masses have been washed out. The veins have been stripped along the croppings wherever the ore was visible, but have not been followed downward to any great depth.

COPPER.

Copper continues to be the leading metallic product of the Territory, and the year 1904 witnessed a rapid growth and expansion of the industry. Its chief centers are Bisbee, Jerome, Clifton, Metcalf, Morenci, Globe, and the Imperial.

At Bisbee many new claims have been located and opened up on the southward extension of the Copper Queen ore body.

The statistics of production show a steadily increasing output of the metal, as follows: Output for the year 1902, 119,000,000 pounds; 1903, 150,000,000 pounds; 1904, 224,000,000 pounds.

The figures available for the first portion of the year 1905 indicate a corresponding increase of production. The correspondent of the Engineering and Mining Journal in May, 1905, gave the following summary and estimate: "The Clifton-Morenci mines are now making about 5,000,000 pounds a month, the Old Dominion is making 2,600,000 pounds a month, and Bisbee-Douglas about 10,000,000. Jerome is turning out not less than 2,650,000 pounds, and smaller mines and smelters throughout the Territory about 500,000 pounds. This makes an annual product, if this rate is maintained, of not less than 240,500,000 pounds."

At the Copper Queen, Bisbee, the mining operations and the production of copper have been greatly promoted by the removal of the smelting operations from the mine to Douglas, in the Sulphur Spring Valley, where a smelting plant of colossal proportions has been established and is now (June, 1905) being extended. Sampling works have been added, and the company announces that it will buy copper and other nonlead ores and matte and all kinds of smelter products. This is very important to the copper miners of many districts by giving a near-by market for small lots of ore. The owners of the Copper Queen have also secured the coal fields at Dawson, N. Mex., and the El Paso and Northeastern Railroad, by which they can haul their own coal and coke to the smelters at Douglas and will be enabled to produce copper at a lower cost per pound.

The Calumet and Arizona is the title of one of the new companies in operation south of the Copper Queen. It is a large producer and is rated at 33,000,000 pounds of copper annually, and is said to make copper at a cost of 7½ cents per

pound. Its smelters are established at Douglas. Orders have been given for three great quadruple hoists, one for the Cole shaft, one for the Oliver, and one for the Junction. These hoists are each designed to hoist a load of 24,000 pounds from a depth of 2,500 feet in balanced skips, with a capacity of 3 tons of ore each.

This and other properties have encountered an enormous body of water on the lower levels, believed to be more formidable than the mine water at Tombstone. In the month of May the outflow of the Calumet was about 2,000 gallons per minute.

The United Verde, at Jerome, has maintained its large production, notwithstanding the inconvenience of a caving in of part of the mine early in June. At first there was considerable interruption and difficulty anticipated from the shifting and settling of the surface, but the company has been able to resume operations at a satisfactory approximation to normal conditions and production. The quantity of ore mined in 1904 was approximately 250,287 tons of 2,000 pounds each; quantity treated in 1904 was approximately 249,328 tons; amount of fine copper produced in 1904, approximately, 30,500,000 pounds.

The mines at Clifton, Metcalf, and Morenci, in Graham County, have been steady producers for the year. According to the correspondent of the Engineering and Mining Journal, in May, 1905, they were producing about 5,000,000 pounds a month, apportioned to the Arizona, the Detroit, and the Shannon companies. The Detroit, at Morenci, is credited with a production of 16,623,257 pounds of copper in the year 1904. The company is now adding a 40-ton concentrator to its plant, and expects to have it in operation by October, 1905. This, is is expected, will increase the production 40 per cent, carrying it to 23,250,000 pounds annually.

The Old Dominion, at Globe, Gila County, has for years been an important center of copper production. In April, 1905, three furnaces were in operation, and the daily output of copper averaged over 50 tons, and the total product in April up to the 25th of the month was reported as 950 tons, or 1,900,000 pounds. In the month of May the three furnaces were in blast, but the daily average of 100,000 pounds was not maintained for a few days, owing to insufficiency of blast, which has since been remedied, and the total production of blister copper for May was 3,103,000 pounds.

The Imperial Copper Company, working the property formerly known as the "Old Boot," near Red Rock, in Pima County, 40 miles west of Tucson, has been sinking and driving during the year, opening up its ground, and at the same time making shipments of ore by rail to Douglas. The property was connected with the Southern Pacific Railroad main line at Red Rock by a railroad 20 miles in length, constructed by the Imperial Company.

The adjoining properties of the Red Rock and Atlas patented claims, which have in past years been considerable producers of excellent copper ore, are now under bond and development by Percy Williams in behalf of eastern capitalists.

There has been increased activity in the prosperity and development of copper claims and mines in Pima County in the neighborhood of Tucson.

The Twin Buttes mine has been partly acquired by Mayor Rose and associates, of Milwaukee, who are sinking a deep shaft and are constructing a branch railway from Tucson to the mine, with the expectation of shipping the ore to El Paso or Douglas or to the smelter projected at Tucson. This activity at the Twin Buttes has stimulated work at the Helvetia and at the Azurite; also at Rosemont, the Phelps and Schley claims, and in the Sierritas, notably at the Purcell, Gifford, Armogosa Contzen, Borton, Hughes, and others.

In the central portion of the Catalina Mountains, north of Tucson, and at the headwaters of the Canada de Oro, there has been much work done by tunneling under the plane of contact of an uplifted area of limestone now resting upon a massive dioritic rock. This contact is marked by a development of garnet and epidote, the result of alteration, mingled with iron pyrites, copper pyrites, and blende. It constitutes a low-grade copper ore, averaging about 3 per cent, with occasional bunches of richer ore. Considerable work has also been done on the eastern side of the same contact at the Giesman, or Condon camp, where work was suspended in 1904.

At the old Apache mine active prospecting work has been carried on during the past year by Robert Leatherwood, resulting in the opening up of a fine body of copper sulphide, chiefly bornite, of high grade. About 100 tons of this ore was on the dump in the month of March, 1905, and had been broken out from a short tunnel into the contact and without drifting along the contact either way.

TREATMENT OF COPPER ORES BY THE ELECTRIC FURNACE.

The measure of success which has attended the experiments abroad upon the treatment of copper ores on a commercial scale in electric furnaces justifies a somewhat extended notice in this place, particularly as the electric methods of reduction are especially applicable in regions where fuel in the forms suited to furnace work is not procurable at a moderate cost. This is the condition over considerable areas of the mountain region of Arizona remote from railways. At the same time the conditions of the production of electric energy are often very favorable. As a case in illustration, the copper ores of Leatherwood's claim, at the old Apache mine camp in the Catalinas, and the ores of other claims in that region, are far distant from a supply of coke, but are in close proximity to the mountain streams at the sources of the Canada de Oro. Under such conditions the smelting by electric current would appear to be practicable and profitable. The requisite conditions are (1) a supply of ore; (2) water power. The ore need not be moved beyond the mouth of the mine; the electric energy can be carried to it by a wire across mountain ridges and canyons, and only the valuable metal product requires wagon transportation.

That such conditions and results are not chimerical and fanciful is shown by, and we may refer to, a recent report of a commission appointed by His Majesty's Government to investigate the different electro-thermic processes for the smelting of iron ores and the making of steel in operation in Europe, published by the department of the interior, Ottawa, Canada, Eugene Haanel, superintendent of mines.

The letter of instructions from the Hon. Clifford Lifton, the minister of the interior, states that—

"The special object of this investigation is the ascertainment of all facts in connection with these (electric) processes which are necessary for determining the cost of one ton of product, the quality of the product, and the cost of the machinery employed and such other facts as may be required for the formation of a judgment regarding the feasibility of introducing successfully in Canada, electro-thermic processes for the production of iron and steel."

The report shows that both iron and steel are successfully made on a considerable scale at several places abroad. This fact alone is of great importance to Arizona, where there are many deposits of iron ore of high grade, but probably the chief point of immediate interest is a description of the electro-thermic process as applied to copper, known as the "Keller process," presented by the commission in an appendix to its report. It is in the form of a translation from the French of a lecture by M. Vattier, an engineer delegated by the Chilean Government to investigate the electric smelting of copper. He was intrusted by the Chilean Government with the study of the latest developments of electro-metallurgical processes in Europe and the United States. He took from Chile some 200 tons of copper ores and manganese ores for the purpose of making experiments on a commercial scale.

The experiments were conducted upon two kinds of ore:

1. Copper ore from the "Volcan," containing approximately 7 per cent in the form of copper pyrites. It contained from 8 to 9 per cent of sulphur. The gangue contained silicates, free silica, a little carbonate of lime, "but mainly micaceous copper oxide."

2. Low-grade copper ore from the mining regions of the vicinity of Santiago, Chile, mixed with a small proportion of manganese and lime.

The composition of the charge of the furnace was as follows:

	Per cent.		Per cent.
Carbonic acid	4.310	Iron	28.500
Silica	23.700	Manganese	7.640
Alumina	4.000	Phosphorus	.046
Lime	7.300	Copper	5.100
Magnesia	.330	Arsenic	Trace.
Sulphur	4.125		

The ores were crushed coarsely and were in the condition of coarse lumps and partly as dust. The mixture was charged into the crucible by a hand shovel and there was no inconvenience from the presence of the fires as in blast furnaces. The main furnace was a chamber, or boxlike crucible, built of refractory brick about 6 feet in length by 3 feet in width and nearly 3 feet in depth (1.80 meters, by 0.90 by 0.90 meter). It had a forehearth about 4 feet by 2 feet and 2 feet high. This forehearth was used for the separation of the matte from the slag. At the bottom of the upper chamber, or crucible, openings were provided

through which the contents could be drawn off into the forehearth by tapping through the fire-clay plugs. The electrodes were of carbon, with a square section of 0.30 meter (about 12 inches) on the side, and a length of 1.70 meters (about 5 feet 6 inches). These were so suspended that their height could be changed at will, so that they could be plunged into the bath or be raised above its surface. The forehearth was also provided with electrodes for the purpose of reheating the contents. Openings were provided at different heights in the side of the fire hearth through which either the slag or the matte could be tapped. The operation of this furnace is described as follows:

"The two large electrodes are lowered into the crucible and the electric circuit is established by the introduction of pieces of carbon and of matte placed at the bottom and the temperature is gradually raised. Fusion ensues in a short time. Ore is charged into the crucible around the electrodes, which are raised up as the melted charge rises. When the crucible is full of molten or semimolten metal it is tapped near the bottom and the contents are drawn off into the forehearth, where the reactions are completed and the separation of the liquified materials is effected by means of the reheating electrodes. When the forehearth is nearly full the slag is discharged through one of the upper openings and the matte is drawn off through a lower opening. The process thus requires a succession of tappings from both the lower and upper furnaces."

The smelting capacity of this furnace was 25 tons per twenty-four hours, producing copper matte.

The current used was alternating, of 4,750 amperes, 110 volts; practically 500 kilowatts, or 68 horsepower. Therefore, to treat 100 tons of ore per twenty-four hours 2,833 horsepower are required from the dynamos, or, in round numbers, 3,000 horsepower of 70 kilograms.

The following products were obtained in the experiments:

(1) Matte of the following composition:

	Per cent.		Per cent.
Silica	0.800	Sulphur	22.960
Alumina	.500	Phosphorus	.005
Iron	24.300	Copper	47.900
Manganese	1.400		

(2) Slag containing by analysis—

	Per cent.		Per cent.
Silica	0.800	Manganese	8.230
Alumina	5.200	Sulphur	.570
Lime	9.900	Phosphorus	.062
Magnesia	3.300	Copper	.100
Iron	32.500		

It thus appears that in these experiments they obtained a copper matte of 47.90 per cent and a slag containing only one-tenth of 1 per cent copper from an ore carrying only 5.10 per cent copper. M. Vattier observes in regard to this process that for good results it is advisable to use a voltage sufficient to cause the ore or electric current to pass from one electrode to the other by regulating the height of the electrodes to just clear the surface of the bath in order to avoid as much as possible their coming in contact with the bath. The carbon at such high temperatures has a tendency to reduce the iron oxide into metallic iron, with the inconvenience also that there is a more rapid wear of the electrodes, a loss of electric energy, and a lower grade of matte. It is suggested that by the use of Acheron's graphite electrodes these inconveniences would be greatly diminished. The wear of the electrodes was found to amount to 75 kilograms per ton of copper in the matte, at a cost of, say, 45 francs.

In the comparison between the old process of smelting copper and the electric smelting, M. Vattier considers the case of a copper mine known as the Volcan, in Chile, South America, at a distance from the coast in the foothills of the Cordillera where the cost of coke is at least 100 francs, but where there is a constant powerful hydraulic power which can be economically utilized. Taking as the basis of comparison 1 ton of copper ingots from a 7 per cent ore, he finds that to treat in the ordinary water-jacket furnace some 16 tons of ore with the production of matte containing 1 ton of copper would require 3,200 kilos of coke, at a cost of 100 francs per ton, or an expenditure of 320 francs for fuel. In the electric furnace the reduction or smelting of 16 tons of ore would require an energy of 1.25 kilowatt year at a cost in the region named of 30 francs per kilowatt year, representing a cost of 37.50 francs, say 38 francs, as against 300

francs for the same result by the ordinary furnace. We should add to the cost of the electric furnace 45 francs per ton of copper in the matte to cover the wear of the electrodes, making a total cost per ton of 83 francs, showing a saving of 230 francs, or more than $47 per ton.

Other advantages in favor of electric smelting are cited as follows:

1. Suppression of the blowing engines for the water-jacket furnaces.
2. Possibility of operating on much more refractory ore than with the ordinary furnaces.
3. Avoidance of briquetting flue dust.
4. Lessening cost of labor.
5. Elimination of danger of scaffolding in the furnace.

The comparison is further extended by considering a lower grade of ore, say a 4 per cent ore, in which case the production of 1 ton of metallic copper in the matte would require an additional expenditure for coke of 180 francs, and in the electric furnace an additional saving of 157.50 francs.

It is declared to be difficult to arrive at a general average figure representative of the saving effected by the adoption of the electric furnace. It depends not only upon the grade of the ore, but, also, greatly on the local conditions. In the case of the South American mines remote from the coast and in proximity of powerful and constant waterfalls the economy effected would not be less than $50 per ton.

RECENT EXPLORATIONS.

Important monographs upon the copper deposits of the Globe and other districts have been published by the United States Geological Survey. An extensive descriptive report on the Clifton and Morenci districts by Doctor Lindgrem is in press and will appear shortly. The Copper Queen district has been carefully examined and described. In the month of September, 1905, a detailed examination and survey of the Tombstone district will commence under the direction of Mr. F. L. Ransome, assisted by Mr. W. H. Emmons. These monographs are important and valuable to the mining industry of Arizona and incidentally to that of the world.

QUICKSILVER.

The quicksilver ore, of which a box of specimens was sent to the school of mines through the agency of Mr. Herbert Brown, of Yuma, consists of cinnabar diffused through an earthy and quartzose gangue. This ore occurs in veins which can be traced for a long distance in the hills 14 miles east of Ehrenberg, on the Colorado River. Five full claims have been located and acquired by the Colonial Mining Company, which proposes to erect suitable furnaces for the production of the metal, meanwhile extending the development of the mine to a depth of 400 feet. One shaft is already down 200 feet. About 1,000 feet of work has already been done on the property. The vein is said to have a surface width of 4 feet, and 6 feet at a depth of 200 feet.

Mining locations.

County.	Number of locations in fiscal year ended—		County.	Number of locations in fiscal year ended—	
	June 30, 1904.	June 30, 1905.		June 30, 1904.	June 30, 1905.
Apache	None.	None.	Pima	652	612
Cochise	3,076	1,826	Pinal	893	500
Coconino	506	68	Santa Cruz	469	354
Gila	483	543	Yavapai	1,822	1,448
Graham	508	354	Yuma	661	972
Maricopa	401	283			
Mohave	747	545	Total	10,218	7,505
Navajo	None.	None.			

SURVEY AND SETTLEMENT OF PUBLIC LANDS.

During the year there was a fairly active demand for public lands. This demand covered mineral and agricultural lands. There has been a yearly decrease in the number of original homestead and des-

ert-land entries—entries of land intended for farm homes—and this is because the demand for land is limited by the water supply. Practically all of the water available for irrigation is already in use, and until the Government shall be ready to invite settlers for lands under new irrigation systems the entries of homesteads will continue to decrease.

During the year there were 159 applications for patents for mineral locations. The locations embraced in these applications comprised 402 lode claims, 12 mill-site claims, and 1 placer claim, making a total of 415 claims. One hundred and fifty-one mineral surveys were approved.

During the previous year there were 134 applications for patents for mining claims, embracing 451 lode claims, 5 placer claims, 4 mill-site claims, making a total of 460 claims.

Seventeen contracts, or special instructions in lieu of contracts, were issued providing for the execution of public surveys covering approximately 650,000 acres of agricultural or grazing lands. During the previous year surveys of 461,934 acres were made and approved.

The two land districts in the Territory show a total of 292 original homestead entries, covering 41,325 acres, and 24 original desert entries, covering 2,919 acres. During the previous year there was a total of 453 original homestead entries, covering 62,120 acres, and 32 original desert-land entries, covering 5,074 acres.

The total cash receipts from all sources reported by the two land offices were $57,188.30. In the previous year the cash receipts amounted to $72,492.50.

Since the close of the fiscal year orders have been issued for the consolidation of the two land districts, the office of the consolidated district to be at Phoenix.

The immense area of the public domain yet remaining in the Territory is evidenced by the figures showing that the grand total of unappropriated and unreserved lands amounts to 47,082,321 acres.

Detailed reports of the business transacted at the local land offices in the Territory will be found in the annual report of the Commissioner of the General Land Office.

AGRICULTURE AND IRRIGATION.

There is practically no farming in Arizona without irrigation. In some portions of the Territory, in the higher altitudes of the mountains, farming is practised to a limited extent without irrigation, but it is only in the valleys, where water can be supplied to large areas, that agriculture has been developed into a great industry. To this date but little more than three-fourths of 1 per cent of the total area of the Territory has been reclaimed, and the stretches of desert are so vast in comparison with the irrigated districts that a statement of the area under cultivation is not at first impressive.

But the assessed valuation of the farming land and its productive capacity make agriculture the second industry in the Territory, mining being first. In point of assessed valuation and taxes paid, however, the agricultural industry for several years has been first, and mining second, a palpable injustice to the farming interests, as elsewhere explained.

Perhaps there is no other region in the world in which the farmer is so bountifully recompensed for his labor as in Arizona, when adequate water for irrigation can be obtained. In the valleys of the Salt, Gila, Colorado, and Verde rivers the climate is so favorable and the soil so fertile that one crop immediately succeeds another, so long as water can be had. The principal field crops are alfalfa, barley, corn, oats, and wheat. Orchard fruits, grapes, and semitropical fruits also do well. Arizona oranges are first on the market and command always the highest price.

The statistics collected by the Government in 1902 furnish the most reliable data now available concerning irrigation in the Territory, and the figures of that year apply with equal accuracy to the present time.

In 1902 the total number of acres irrigated was 247,250, divided into 3,867 farms. These farms received water through 648 systems supplied by streams. The total estimated construction cost of these stream systems, including 1,776 miles of main canals and ditches, was $4,591,570, an average of $18.97 per irrigated acre.

The figures printed in the table below show that 90.5 per cent of the total irrigated acreage and 88.1 per cent of the total construction cost of systems in the Territory were in the Gila-Salt River drainage basin. In this drainage basin the principal irrigation districts are in the Salt River Valley, Maricopa County, and in the upper valley of the Gila, in Graham County. These are followed in order of area and value by irrigated districts in Pinal County, on the Gila River; by the region reclaimed in Yuma County, on the Gila and Colorado rivers, and by the Verde Valley, in Yavapai County.

The assessed valuation of farm lands in Maricopa County this year is $3,659,977, and the assessed valuation of improvements $482,725, making a total of $4,052,702. The assessed valuation of farm lands in Graham County is $489,897.25, and of the improvements thereon $378,566.40, making a total of $868,463.65.

There is a marked disparity between the number of acres reported by the Government as actually under irrigation and the number of acres of farm land assessed for taxation. This arises from the fact that in the four agricultural counties of Graham, Maricopa, Pinal, and Yuma land has been reclaimed and patented under the homestead law and the desert-land act far in excess of the present available water supply.

For illustration, the Government found in 1902 that the total number of acres actually irrigated under canals from the Gila and Colorado rivers in Graham, Pinal, and Yuma counties was 91,109. This year the same counties returned for taxation 168,780 acres of farm land, as follows: Graham County, 55,191; Pinal County, 55,304; Yuma County, 58,285.

And in Maricopa County 125,007 acres were reported to be under actual irrigation, whereas this year the same county returns 293,388 acres of farm land for taxation. Altogether the four counties have 462,168 acres of farm lands assessed for taxation, while the total number of acres irrigated is estimated to be 216,116.

These figures show at a glance what will be accomplished by an adequate system of water storage for the principal agricultural counties of the Territory. The great reservoir system now under con-

struction in the Tonto basin on the Salt River for the farm lands of Maricopa County will, it is thought, furnish water sufficient for the complete irrigation of the entire 293,388 acres of farm lands. Not only that, but it will easily double the market value of the entire acreage and double its productive capacity. When the Salt River reservoir shall have been completed the Salt River Valley will have, in round numbers, 300,000 acres of land under cultivation under a model system of irrigation. These 300,000 acres will fully equal in value 1,000,000 acres of the best farm land in the Mississippi Valley. Coincident with the completion of the reservoir there will be a wholesome subdivision of agricultural holdings in the Salt River Valley. Under existing conditions large tracts are held under single ownership. The reclamation act contemplates that not more than 160 acres shall be held by one owner under a Government reservoir, and the enforcement of this policy will result in throwing many thousands of acres of Salt River Valley land upon the market.

The construction of the projected reservoir at San Carlos, on the Gila River, in Graham County, would be followed by the irrigation of the entire 55,304 acres of farm land now taxed in Pinal County—of which not more than one-tenth is irrigated at the present time. In addition to that the San Carlos reservoir would furnish water for many thousands of acres of land now held in the public domain, and, as elsewhere pointed out, it would effectually solve the question as to the best method of making the Pima and Maricopa Indians completely self-supporting.

The Territory is exceedingly fortunate that two great irrigation systems are already under construction by the Government—the Salt River reservoir already alluded to, and the Yuma irrigation project on the Colorado River.

NOTE.—The report of the operations of the Reclamation Service in Arizona during the year ended June 30, 1905, will be found in the report of the Reclamation Service for the present year, which, under the act of June 17, 1902 (32 Stat., 388), is to be submitted to Congress.

Irrigation in Arizona in 1902.

Source of water supply.	Farms irrigated.	Acres irrigated.	Irrigation systems.			
			Number.	Cost of construction.		Main canals and ditches.
				Total.	Average per irrigated acre.	
						Miles.
All sources	3,867	247,250	781	$4,688,298	$18.96	1,783
Streams:						
Colorado River and tributaries, exclusive of Little Colorado River and tributaries, and Gila River and tributaries	274	10,661	58	275,250	25.82	118
Little Colorado River and tributaries	456	11,776	74	264,746	22.48	184
Gila River and tributaries, exclusive of Salt River and tributaries	1,669	80,448	302	1,372,024	17.05	834
Salt River and tributaries	1,293	138,810	210	2,672,815	19.26	624
White River and tributaries	6	384	4	6,735	17.54	6
Other sources:						
Springs	41	1,061	25	6,766	6.38	17
Wells	128	4,110	108	89,962	21.89	----------

AGRICULTURE.

[By Prof. R. H. Forbes, director of the experiment station of the Territorial University.]

Farming and stock raising, which depend immediately upon the soil for returns, are in Arizona more than usually diversified, both in the products secured and in the methods employed. This is due, primarily, to the remarkable climatic conditions of the region, which in the southern and western parts of the Territory combine less than 20 inches annually of rainfall, more than 70 per cent of possible sunshine, few sharp frosts in winter, long periods of extremely hot weather in summer, and very low atmospheric humidity. As is evident from these cultural conditions, the development and advantageous use of water in this region is of the first importance. Water being secured, the long growing season, the variety of crops possible, and in most cases the excellent home markets for produce, make farming more than usually profitable.

At the present time there are not far from 250,000 acres of land actually under irrigation in the Territory. Reclamation service operations now in progress at the Tonto dam site on Salt River and at the Laguna site on the Colorado above Yuma will easily increase the net irrigated area to about 500,000 acres available for occupation probably within five years.

In addition to this area there are fully 500,000 acres more, chiefly along the Colorado and Gila rivers, for which there is water and storage capacity, and which in course of time will undoubtedly be reclaimed.

Artesian water has thus far been developed in the upper Gila and San Pedro valleys, in the extreme southeastern corner of the Territory, and very recently near Salome in the west-central part of the Territory. Considerable development has been made by means of these artesian flows, although they are as a rule not great in quantity.

Irrigation by pumping is making steady progress in many localities. When the cost of fuel is reduced to that which obtains, for instance, in Southern California, large areas of desert lands now underlaid with good water supply will come into cultivation.

In the higher and cooler parts of the Territory where climatic conditions are not so severe, dry farming—that is, without the use of irrigating streams—is parctised to some extent, and is capable of extension over large additional areas.

The grazing industries, cattle and sheep, now depending upon the free range for support, are capable of much greater returns when the conditions of occupation have been so improved as to do away with the old wasteful methods in vogue and permit a proper and effective use of the grazing country.

In brief, it may be stated that when to areas now in cultivation are added the alluvial lands along the Colorado, when the underground supply is developed by means of artesian and pumped wells, and when grazing-range conditions are improved, the Territory will contain the equivalent of considerably more than 1,000,000 acres of the most fertile and productive irrigated lands known in this country.

The fertility of irrigated soils in this region, already well supplied with mineral plant foods, is further assured by the sediments, rich in nitrogen and organic matter, brought upon lands by river irrigating waters. The exceedingly important problem of the maintenance of fertility in this region, therefore, is less to be reckoned with than in regions where farming depends upon rainfall.

With water at command and with fertility of soils assured, the Arizona irrigator is further favored by a combination of growing seasons which enables him to produce a constant succession of crops. From January to June the temperature resembles that of spring and early summer in the latitude of Kentucky. From June to September the climate is of subtropical fervor, while from September to November there is a second mild season of temperate weather. The winter season, from November to January, though subject to sharp frosts in southern Arizona, is not seriously or even uncomfortably cold.

Owing to this combination of seasons, a remarkable variety of crops may be found in the same locality at different times of the year. Strawberries, which flourish in Greenland, may be found on common ground with the date palm from Sahara. Alfalfa, the great forage of the arid West, flourishes alongside of wheat, corn, and sorghum, respectively characteristic of Minnesota, Illinois, and Kansas. Oranges, lemons, and olives from California may be found in the same neighborhood with peanuts and sweet potatoes from Virginia. In brief,

many of the leading crops of both temperate and subtropical countries, which are not affected by a too arid atmosphere or by the frosts of winter, flourish in southern Arizona. In northern Arizona, where the temperatures more resemble those of northern Illinois, many more distinctively temperate-region crops flourish, such as corn, potatoes, apples, and various small fruits.

The earliness of the season for some crops, such as oranges, melons, tomatoes, apricots, and other export products, is an advantage to the Arizona farmer, while the strong demand for farm supplies in the many mining camps and towns of the Territory maintains a fair average of produce values.

What these values are may be judged by the following figures relating to certain crops grown on the experiment station farm during 1901:

Crop.	Yield per acre.	Gross value per acre.	Cost of producing and marketing per acre.	Net value per acre.
	Pounds.			
Wheat	2,150	$22.55	$10.25	$12.30
Potatoes	3,600	85.00	34.50	50.50
Tomatoes	12,300	225.00	75.00	150.00
Strawberries	5,000	500.00	150.00	350.00
Melons	27,000	140.00	26.00	114.00
Egyptian cotton	400	68.00	48.00	20.00
Corn	1,735	18.00	9.50	8.50

Some idea of the diversity of crops and their constancy throughout the year may be gained from the following table, taken from Bulletin 48 of the experiment station, which gives for each month the crops which may be planted and harvested:

Diversity of crops and their constancy.

Month.	Planted.	Harvested.
January	Wheat, barley, oats, alfalfa, peas, beets, potatoes, cabbage, carrots, lettuce, spinach, turnips, radishes, asparagus seed and roots, onion sets, strawberries, blackberries, grape cuttings and plants, deciduous fruit trees, date seed.	Cauliflower, lettuce, spinach, table beets, turnips, radishes, oranges, and pomeloes.
February	Wheat, barley, alfalfa, Indian corn, peas, beets, tobacco, potatoes, tomato seed, bush squashes, lettuce, spinach, turnips, radishes, onion sets, celery seed, asparagus plants, strawberries, blackberries, deciduous fruit trees, citrus fruits, olives, date seed.	Cauliflower, cabbage, lettuce, spinach, table beets, turnips, radishes.
March	Indian corn, cotton, beans, melons, cucumbers, squashes, pumpkins, citrus fruits, olives, eucalypts.	Cauliflower, cabbage, lettuce, spinach, beets, turnips, radishes, carrots, green onions, asparagus, strawberries.
April	Egyptian and Kaffir corn, cowpeas, cotton, date plants, eucalypts.	Grain, hay, alfalfa, green peas, cabbage, lettuce, spinach, table beets, carrots, turnips, radishes, green onions, asparagus, strawberries, mulberries.
May	Egyptian and Kaffir corn, cowpeas, date plants.	Wheat, barley, oats, alfalfa, table corn, peas, potatoes, bush squashes, string beans, cabbage, lettuce, table beets, carrots, turnips, asparagus, strawberries, blackberries, plums, apricots, peaches.
June	Egyptian corn, cowpeas, melons, squashes, pumpkins, date plants.	Alfalfa, Indian corn, potatoes, tomatoes, melons, cucumbers, bush squashes, beans, beets, carrots, onions, strawberries, blackberries, figs, plums, peaches, apricots, apples.
July	Indian and Egyptian corn, millet, cowpeas, plums, melons, squashes, pumpkins, date plants.	Cowpeas, sugar beets, alfalfa, tomatoes, melons, cucumbers, grapes, figs, plums, peaches, apples, pears.
August	Peas, beets, beans, cowpeas, millet, potatoes, cabbage and cauliflower seed, carrots, celery plants, cucumbers, lettuce, eucalypts.	Egyptian and Kaffir corn, sorghum, sugar beets, cowpeas, tomatoes, melons, grapes, figs, plums, peaches, apples, pears, almonds.

Diversity of crops and their constancy—Continued.

Month.	Planted.	Harvested.
September..	Wheat, barley, oats, peas, beans, potatoes, beets, cabbage and cauliflower seed and plants, celery plants, lettuce, spinach, radishes, carrots, turnips, onion seed.	Egyptian and Kaffir corn, sorghum, cowpeas, cotton, melons, grapes, plums, peaches, apples, pears, dates, pomegranates.
October.....	Small grains, alfalfa, clovers, peas, beets, cabbage seed and plants, onion seed, carrots, radishes, turnips, lettuce, spinach.	Cowpeas, cotton, Egyptian and Kaffir corn, sorghum, millet, alfalfa, tomatoes, melons, cucumbers, squashes, pumpkins, string beans, grapes, plums, peaches, apples, quinces, pears, dates, pomegranates.
November ..	Small grains, alfalfa, clovers, peas, cabbage plants, radishes, beets, turnips, lettuce, spinach, strawberries, date seed.	Indian corn, Egyptian corn, sorghum, cowpeas, alfalfa, potatoes, tomatoes, pumpkins, squashes, peas, beans, lettuce, spinach, table beets, turnips, radishes, celery, strawberries, grapes, peaches, apples, pears, quinces, olives, dates, oranges, pomeloes, pomegranates.
December ..	Small grains, peas, radishes, strawberries, date seed.	Lettuce, spinach, table beets, turnips, radishes, celery, strawberries, apples, pears, olives, dates, oranges, pomeloes.

STAPLE CROPS.

ALFALFA.

Probably the most important crop in Arizona is alfalfa. With from four to seven cuttinge a year possible, it may be stated that probably in no considerable district within the United States does this plant yield more abundantly.

It has several values in our agriculture. First, as hay there is a constant market at good prices in the adjoining mining country, prices for baled hay ranging from $7 to $14 a ton. A more profitable disposal of alfalfa, ordinarily, is as a stock fattener. It is employed for feeding hogs and cattle; also in connection with a thriving dairy business. It is estimated that about $1,500,000 worth of alfalfa hay and fat cattle are exported annully from Salt River Valley. With improved methods of feeding this output can doubtless be greatly increased.

With butter now being shipped into Arizona from Kansas, it is also evident that there is yet room for the growth of the dairy industry. There are at present five creameries and cheese factories in the Territory, and a condensed-milk factory is also in operation.

Another very important use of alfalfa is as a soil renovator. Our semiarid desert soils are commonly dense and deficient in humus and nitrogen—circumstances leading to a condition of poor tilth, which often makes successful culture of ordinary crops a difficult matter. Alfalfa, however, flourishes in these soils, and in so doing loosens them to considerable depths by means of its roots, and through its processes of growth and decay contributes the much-desired humus and nitrogen to the soil. In this way alfalfa serves as a preparation for other crops; and it is a matter of common observation that orchards, wheat, sugar beets, and other crops all flourish best on ground which has previously been in alfalfa.

BARLEY.

From early times barley has been grown in Arizona as a hay crop, being cut and baled for this purpose before maturity. Four or 5 tons of hay per acre is a fair yield. Certain varieties of beardless and hulless barley recently introduced have advantages over the ordinary bearded. The yield of grain per acre is from 30 to 50 bushels.

CORN.

Although small, quick-growing varieties of corn have long been grown by the Indians and Mexicans in the Southwest, it is only within the past few years that fine crops of improved varieties have been grown by the American farmer. In order that the grain may be set properly, corn must be planted in July, late enough so that in maturing it may just escape the fall frosts. With the long

growing seasons it is possible, water supply permitting, to mature a crop of corn after harvesting a crop of wheat or barley.

WHEAT.

Wheat is a leading staple, both as grain and as hay. It is grown as a winter and as a spring crop, maturing usually before the summer shortage of water occurs.

The chief variety grown is the Sonora wheat of this region, but certain Australian varieties have found favor, and effort is being made to import such new kinds as will make a better milling combination than does the Sonora alone. At present much wheat is imported from California by the large flouring mills in Phoenix, Tempe, Tucson, Solomonville, Safford, and Thatcher.

OTHER GRAINS AND FORAGES.

Sorghum has become one of our most important forage crops, not only because of its use for stock-feeding purposes, but because it thrives on land containing considerable alkali. Grown upon such lands, the alkali is partly taken up and removed with the crop, to this extent renovating and improving the soil for other crops. The Clubhead is the best and most commonly grown variety in the region.

Kaffir corn approaches sorghum in yield of forage, while Egyptian corn, an excellent drought resister, has proved to be a very promising source of grain. Cowpeas and rye may be grown experimentally, but are of minor value in this region. Oats are more grown than formerly, being, like wheat and barley, sown in with alfalfa for a first cutting of mixed hay.

ROOT CROPS.

Many of the important root crops thrive in Arizona. The common potato grows wild at higher altitudes within the Territory. In northern valleys heavy crops are grown by irrigation. In southern Arizona two crops may be grown, the principal one being planted in February and a less satisfactory one in August. Early Rose, Burpee's Extra Early, Early Andes, Bovee, and Triumph all do well, and from 4,000 to 5,000 pounds per acre is an ordinary crop.

Sweet potatoes and yams produce well in suitable soil, a specimen of the latter weighing 36¾ pounds from the upper Gila being on record.

Sugar beets yield a satisfactory tonnage of medium and sometimes excellent quality. The precautions necessary are early planting, not too light a soil, and careful cultivation and irrigation. The yields obtained during four years' experimental work by the experiment station varied from 4 to 18 tons per acre, containing from 11.1 to 18.6 per cent of sugar in the beets.

Field beets, carrots, parsnips, peanuts, radishes, and turnips are all grown with success.

VEGETABLES.

Green vegetables in unusual variety may be produced if proper attention is paid to the planting seasons. As mentioned above, there are two mild, temperate seasons in southern Arizona—one extending from January to June, the other from September well into November. Certain of the more quickly growing vegetables, therefore, may be made to produce both in the spring and the fall, this double season being recognized by the more experienced residents of this section. Asparagus, beans, cabbage, cauliflower, celery, table corn, cucumbers, eggplant, lettuce, melons, peas, spinach, squashes, tomatoes, and other varieties of vegetables in yearly increasing number are successfully grown.

FRUITS.

In northern Arizona and in certain of the higher valleys where the climate is temperate in character apples, cherries, pears, and peaches of excellent quality are grown, but only in small quantities, since the irrigated areas are small. Apricots, grapes, and raisins are shipped in considerable quantities from the Salt River Valley. Oranges and lemons of superior quality are produced in Salt River Valley and near Yuma. They have a commercial advantage of a season earlier than that of southern California, while in addition the fruit is uncommonly bright and attractive in appearance. This is due to the fact that im

ported scale insects perish from the effects of the dry, hot atmosphere, leaving the fruit unmarred by their presence. Strawberries in skillful hands are a very profitable crop in southern Arizona, the entire crop being marketed in the Territory. Figs grow luxuriantly in southern Arizona, but require a constant and abundant supply of water in order to yield well. Almonds have been grown with varying success. The great drawback to their culture is the late spring frosts, which are likely to destroy the crop. For the past four years, however, the growers have in most instances succeeded in warding off disastrous frosts by smudging their orchards at critical times. During this time heavy crops of the highest market value have been secured, especially in the vicinity of Mesa City.

Olives are a promising crop in southern Arizona. This tree requires comparatively little water, and the scale, which is so abundant upon the tree in southern California, is not found upon it here. Experts state that the trees grown in Arizona are unusually bright and attractive in appearance and their fruit of good quality. The product of the olive tree also, either in the form of pickles or oil, may be held for the best market and is of small weight and bulk in comparison with its value, shipping charges being thus economized. It is not improbable that this fruit has a growing future in this region, since the demands for olive products is at present throughout the United States far in excess of the supply.

THE DATE PALM.

For six years past the Arizona station, in cooperation with the United States Department of Agriculture, has been engaged in the establishment of the most valuable Old-World varieties of date palms in Arizona. The Tempe date orchard, with 12 acres planted, now contains about 600 living trees, including 130 varieties. The oldest of them, planted in July, 1900, have produced three small crops of fruit, and this year (1905) about 20 varieties are in bearing. As these selected trees come into bearing under southwestern conditions it will be possible to judge of the varieties best suited to the climate and soil of the region as well as to our commercial and market requirements.

The Tempe orchard has already demonstrated the practicability of importing and planting choice varieties of date palms on a large scale, and operations there will serve as a guide in the selection of trees for the planting of commercial orchards in the future. Several kinds have already been found to successfully ripen their fruit in the Salt River Valley, while others have been observed not to mature their fruit with the heat there available. These later varieties may be found suitable for hotter districts, such as the Salton basin, while the earliest kinds may be found available for still cooler localities than near Tempe. It is now certain that the date palm is destined to be a valuable asset in the arid, subtropical valleys of the Southwest, producing a staple commercial fruit now entirely imported from foreign countries.

During the current year another orchard has been started near Yuma, in the alluvial bottom lands of the Colorado River. In this very favorable location it is not unlikely that the commercial outcome will be even better than at Tempe, the soil being unsurpassed in quality, water abundant, and the season longer than in the Salt River Valley.

It is of interest in this connection to note the points of resemblance between the Colorado and the Nile, whose valley has been the home of the date palm from time immemorial. Both rivers rise in distant mountainous countries, their lower courses traverse subtropical and nearly rainless deserts, and they empty into land-locked arms of the ocean at a little less than 32° north latitude. Like the Nile, the Colorado is subject to an annual summer flood, which overflows great areas of its alluvial border and delta lands. While climatic conditions along the Nile are somewhat less severe than in Lower Egypt, yet the two regions have a number of products in common. Among these are alfalfa, wheat, the sorghum corns, the date palm, fig, orange, olive, and pomegranate, cotton, melons, and sugar cane.

NATIONAL AND TERRITORIAL BANKS.

The prosperity prevailing in the Territory is well reflected in the bank statements printed below, which show the condition of the national and Territorial banks on June 30, 1905.

The total deposits in all the banks in the Territory on that date

aggregated $10,015,846.11, a gain of $947,736.48 over the same date last year.

The statement shows that in "cash on hand and due from other banks" the various institutions held an aggregate of $4,557,318.65, a gain of $552,575.82, as compared with the same date last year.

Loans and discounts aggregated $5,950,012.86, a gain of $305,110.06 for the year.

There are 11 national banks in the Territory, the aggregate capital, surplus, and undivided profits of which amount to $938,732.

There are 18 Territorial banks, with aggregate capital, surplus, and undivided profits amounting to $1,183,943.15.

The Territorial banks are regularly examined by the Territorial auditor, who is also bank comptroller, and diligent care is taken to see that each institution is conducted with due regard to safety. There was but 1 bank failure in the year, and that was a small institution, the failure of which was largely due to a lack of business experience on the part of the management.

Comparative statement, national banks.

	1904.	1905.
RESOURCES.		
Loans, discounts, and overdrafts	$2,374,490.76	$2,625,528.24
Stocks, securities, and claims	307,092.70	354,249.97
United States bonds and premiums	541,156.24	552,950.00
Cash and due from banks	2,020,730.90	2,186,848.06
United States redemption fund	10,070.00	20,187.50
Banking house, furniture, and fixtures	145,438.90	138,011.10
Total	5,398,979.50	5,877,774.87
LIABILITIES.		
Capital stock	605,000.00	580,000.00
Surplus and undivided profits	333,732.22	388,548.19
National-bank notes outstanding	401,256.32	425,086.73
Deposits	4,058,990.96	4,484,139.95
Total	5,398,979.50	5,877,774.87
AGGREGATE DEPOSITS IN BANKS.		
Territorial banks	5,009,118.67	5,531,706.16
National banks	4,058,990.96	4,484,139.95
Total	9,068,109.63	10,015,846.11

Comparative statement, Territorial banks.

	1904.	1905.
RESOURCES.		
Loans, discounts, and overdrafts	$3,270,411.04	$3,324,484.62
Stocks, securities, and claims	571,889.07	659,270.27
Real estate, furniture, and fixtures	315,763.46	361,423.83
Cash and due from banks	1,984,021.93	2,370,470.59
Total	6,142,085.50	6,715,649.31
LIABILITIES.		
Capital stock	768,310.00	755,200.00
Surplus and undivided profits	364,656.83	428,743.15
Deposits	5,009,118.67	5,531,706.16
Total	6,142,085.50	6,715,649.31

RAILROADS.

There are in Arizona 1,836.94 miles of railroad (exclusive of side tracks), operated by twenty companies. Many of the companies are merely subsidiary to parent companies, however, and most of the lines may be classified in three groups, namely, the Santa Fe system, the Southern Pacific system, and the El Paso and Southwestern system. One thousand two hundred and seventy-eight and fifty-four one-hundredths miles are taxed at varying valuations per mile, and 558.40 miles are exempt from taxation for varying periods, as explained in my remarks on taxation.

The new construction of the past year, with the construction contemplated, is of considerable importance. The Phoenix and Eastern has been completed to a point 95 miles east of Phoenix, and will ultimately be connected with some point on the Santa Fe system in New Mexico. The Arizona and California has been completed to a point 49 miles west of Wickenburg, and will be connected with the Santa Fe main line at some point in California. The Phoenix and Eastern and the Arizona and California, with the track of the Santa Fe, Prescott and Phoenix between Phoenix and Wickenburg (all subsidiary lines of the Santa Fe), will, it is claimed, form part of a new transcontinental line of the Santa Fe designed to traverse central Arizona from east to west. The new line will have many advantages over the old line (the Santa Fe Pacific), which runs from east to west through northern Arizona. It will avoid the heavy grades of the northern line and will materially shorten the distance between Kansas City and Los Angeles.

Of the new construction by the Southern Pacific system, the Arizona Eastern Railway, incorporated to build from Yuma, Ariz., to Lordsburg, N. Mex., is popularly regarded as proof that the Southern Pacific, prompted, probably, by the same considerations as the Santa Fe, intends to avoid mountain grades by constructing a new through line across the Territory from east to west. Construction on the Arizona Eastern was begun near Kelvin, Ariz., on the Gila River, in April, 1904, and has been in progress ever since. Several miles have been graded. The advantage of the Arizona Eastern as a main line of the Southern Pacific system lies in the fact that it will follow the valleys of the Gila and Salt rivers via Phoenix, and thereby avoid the heavy grades of the old line.

Seventeen miles of the Arizona and Colorado Railroad (also a part of the Southern Pacific system) have been completed from Cochise to Pearce, and surveys are in progress for an extension to Durango, Colo.

Both the Santa Fe and Southern Pacific have expended large sums in betterments during the year, such as replacing track with heavier rails, the construction of steel and cement bridges, etc.

The following table presents some railway statistics in graphic form:

Railroads in operation in Arizona.

Name of road.	Mileage in operation.	Assessed valuation per mile.	Mileage exempt from taxation.
Maricopa and Phoenix and Salt River Valley	34.93	$4,669.564	
Santa Fe, Prescott and Phoenix	194		194
Santa Fe Pacific	386.734	175.00	
Grand Canyon	64		64
Southern Pacific	392.50	7,125.45	
New Mexico and Arizona	89	4,249.80	
El Paso and Southwestern	128.52	6,750.00	
Saginaw and Manistee	14	1,054.16	
United Verde and Pacific	27.30	4,029.304	
Central Arizona	11	2,000.00	
Gila Valley, Globe and Northern	124.30	3,128.70	
Arizona and New Mexico	40	5,504.50	
Morenci Southern	18	3,655.55	
Arizona and Colorado	17		17
Phoenix and Eastern	94.80		94.80
Arizona and California	49.20		49.20
Prescott and Eastern	61.90		61.90
Arizona and Utah	54		54
Cananea, Yaqui River and Pacific	.50		.50
Arizona Southern	23		23
Arizona Copper Co	8	2,500.00	
Total	1,836.94		558.40

LEGISLATION.

During the fiscal year ending June 30, 1905, the legislative assembly was in biennial session from the 18th day of January, 1905, to and including the 16th day of March, 1905, making a period of sixty days. This assembly was composed of the council and the house of representatives. The council consisted of 12 members, being 1 from each of the counties of Apache, Cochise, Coconino, Gila, Graham, Mohave, Maricopa, Navajo, Pinal, Yavapai, and Yuma, and 1 joint councilman from the counties of Pima and Santa Cruz. There were 24 members of the house of representatives, apportioned among the various counties as follows: Apache, 1; Cochise, 3; Coconino, 1; Gila, 1; Graham, 2; Mohave, 1; Navajo, 1; Maricopa, 4; Pima, 3; Pinal, 2; Santa Cruz, 1; Yuma, 1; Yavapai, 3.

As has become the custom, the assembly began its session with the creation of a uselessly large number of clerkships, and their employment continued during the term. The employment of these supernumerary clerks was not determined by fitness. The result was that a great proportion of the clerks and attachés were wholly incompetent. The appropriation made necessary for the payment of these extra and supernumerary attachés for the session of sixty days was about $15,000. This was in excess of the amount appropriated by Congress for the compensation of clerks and other attachés. The number of attachés was considerably in excess of the number of members of the assembly, and the compensation paid them was greater, in the aggregate, than that paid to the members.

The session was not productive of any legislation changing the general policy of the government of the Territory. There were introduced during the session 281 bills, of which 69 became laws. Among the bills which became laws were:

An act to authorize Apache County to issue $15,000 of its bonds for the erection of a county court-house (ch. 6); an act to author-

ize Gila County to issue $40,000 of its bonds for the erection of a county court-house (ch. 9); an act authorizing Mohave County to issue $20,000 of its bonds for the erection of a county court-house (ch. 57); an act to authorize Pinal County to issue $19,000 of its bonds, with the proceeds of which to repair the wagon bridge across the Gila River at Florence (ch. 58); an act authorizing the Territory to issue $40,000 of its bonds, with the proceeds of which to erect additional buildings and to equip them at the Territorial prison (ch. 60); an act authorizing Mohave County to issue $10,000 of its bonds, with the proceeds of which to construct and furnish a county jail (ch. 61).

These acts authorize in the aggregate the issuance of $104,000 of county bonds and $40,000 of Territorial bonds, making together $144,000.

The office of public examiner was created by chapter 40. This officer, it is provided, shall be appointed by the governor, with the advice and consent of the legislative council. He is required to be an accountant and an expert in the theory and practice of bookkeeping. His term of office is fixed at two years, and his compensation at $2,400 per year, and provision is made for his traveling and other expenses in the performance of the duties of his office. His duties are defined by the act to be, generally, to order and enforce a correct and as far as practicable a uniform system of bookkeeping by county treasurers and other officers; to expose false or erroneous systems of accounts; to inquire into the solvency of sureties upon all official bonds, and to reject insufficient ones. He is required to visit personally, at least twice a year and without previous notice to them, the various county offices and make a thorough investigation of the books, accounts, and vouchers of the various offices in detail. He is required to make reports of his investigations to the governor. Upon reports made to him by the public examiner the governor may cause the result of the investigations to be made public, and take such other action for the public safety as the exigency may demand, and if he deem that the public interest require it he may suspend any officer from the further performance of his duties until an examination may be had or such security obtained as may be demanded for the prompt protection of the public interests.

This law has been in operation since the 10th of March, 1905. Already beneficent results are observable in securing closer attention in detail to the financial affairs of the various counties. The incument of the office is one of the best accountants in the Territory and has large experience in the conduct of public offices. I am very pleased to state that so far his investigations have resulted in little other criticism of the various county officers than careless bookkeeping, and some practices in disbursing public money not authorized by law, but which have so long been done as to have seemed to have had the sanction of long custom. A uniform system of public accounts is being rapidly adopted and put in use, and greater care is being taken in the allowance and payment of claims as county charges. I am greatly gratified by the proof, afforded by the examiner's reports, of the almost universal probity and integrity of the officers of this Territory.

Chapter 46 of the session laws appropriates $10,000 for the erection of a "Captain O'Neill Rough Rider Monument" at Prescott. Capt.

William O. O'Neill, affectionately known throughout Arizona as "Bucky" O'Neill, was the commander of a troop of Rough Riders at San Juan, and there, while in the fearless, almost reckless, discharge of his duty, was killed by a Spanish bullet.

Chapter 51 of the laws of 1905 is a compilation and revision, and in some respects an amendment, of the laws of the Territory relating to range animals. The law provides for the appointment of a "live-stock sanitary board," to consist of three members, in whom is largely vested the enforcement of the regulations concerning the health and protection of live stock grazing upon the open ranges. Animals permitted to run upon the ranges are required to be branded with a brand which has been adopted by the owner and recorded. Provision is made for the seizure of animals running upon the ranges which are not thus branded, or which have upon them mutilated or obliterated brands. The law is not a new one, but a compilation and revision of former acts, with some amendments found by experience to be necessary. The law is working very effectively for the protection of range live stock both against disease and theft.

Chapter 52 is amendatory of older statutes upon the subject of fencing. It defines what shall constitute a "lawful fence." It is further provided that in certain districts, upon proper application of a requisite number of taxpayers, no fence shall be required. In other districts the owner of lands is without remedy for damages occasioned by trespassing live stock unless his lands be inclosed by a "lawful fence."

Chapter 56 is amendatory of former statutes relative to the safekeeping by the Territorial and the various county treasurers of public funds. By this law the Territorial treasurer is required to deposit the Teritorial funds, and the county treasurers are required to deposit the county funds, in banks upon their giving satisfactory bonds for their security and payment of not less than 1 per cent per annum, calculated on daily balances and credited monthly. It is the purpose of the administration to distribute the Territorial funds among the various banks in the Territory, with a view, as nearly as it may be practicable, to the return of the money to the localities whence it was withdrawn for the payment of taxes. The average amount of Territorial funds in the treasury is approximately $150,000.

Chapter 64 provides for the establishment of a Territorial fair. The act appropriates $15,000 for the construction of buildings and $7,500 per annum for maintenance, etc. The act provides that a fair ground, with race tracks, stables, stalls, amphitheaters, etc., shall be provided for the holding of the fair, without cost to the Territory, except a nominal rent, not to exceed $10 per year. A corporation, composed chiefly of citizens of Phoenix, has been organized, known as the Arizona Fair Association, which has purchased grounds near Phoenix and is now engaged in putting them in condition. The cost of the grounds and fitting them for the purposes of the fair will approximate $30,000. The expenditures of the fair association are in addition to that authorized by this act.

Chapter 68 regulates primary elections. It provides that all political party conventions for nominating candidates for any city, county, or precinct election shall be held in conformity with that law; that not more than sixty nor less than thirty days before an election pri-

maries shall be held for the selection of delegates to the different party conventions. These primaries are required to be held upon the same day and in the same room, where separate boxes, one for the voters of each party, shall be provided. The time and place of holding the primaries is to be fixed, in the case of city election, by the city council, and in the case of county elections by the board of supervisors of the county. Public notices of the time and places of holding the primaries are required to be given. Every political party entitled to nominate candidates for office shall hold nominating conventions. Such conventions shall consist of delegates elected at the primaries and shall all be held upon the same day. The time and place are to be fixed by the city council in the case of a city election, and by the board of supervisors in the case of a county or precinct election. Conventions must be held not more than forty nor less than twenty days before the regular election. The city council in the case of the city, and the board of supervisors in the case of a county or precinct election, are required to appoint a primary election board to consist of one inspector, two judges, and two clerks for each political party, to be selected from the political party whose primary they preside over. The clerks of all primary elections shall keep, in duplicate, lists of all voters at the primary election, one of which lists shall be filed with the clerk of the board of supervisors (in county elections) or the city clerk (in city elections); the other of the duplicate lists is to be retained by the inspector, open to inspection, for at least six months. The qualifications for a voter at a primary are prescribed to be:

1. That he is a qualified elector of the city ward or precinct; and
2. That he is a member of the political party holding the primary, and that he expects to support the regular ticket of that party at the next general or special election.

Penalties are provided for unlawful voting.

There are a number of acts prescribing police regulations; as, to protect hotel keepers against persons not paying their bills; forbidding directors and officers of savings banks and loan associations to borrow money of the bank except upon real estate having a market value of at least one-third more than the loan, or upon stock of the bank or association more than its surrender value; defining larceny; amending law as to holidays; protecting children against vicious or negligent parents, and authorizing, upon prescribed proceedings, the removal of child to other care and custody; providing that a distinct act of taking shall not be necessary to constitute embezzlement; to prohibit saloons and other like resorts within a radius of 4,000 feet of the Territorial university; to protect game; to punish persons having acids, steel filings, etc., in their possession with malicious intent to use them for injuring persons or machinery; providing bounties for scalps of certain wild animals; to prohibit persons not members of secret or benevolent orders from wearing insignia; to prohibit killing introduced pheasants until 1911; prohibiting sale of cigars, cigarettes, cigarette papers, smoking or chewing tobacco to any minor under the age of 16 years; prohibiting dogs from running at large in certain localities without being tagged; to prevent the use of railway track as a way along which to propel railroad bicycles, etc., without consent of railroad company; to prohibit tres-

passing by sheep; providing penalties for malicious injury to bridges, telegraphs, etc.

There was also an act transferring the management and control of the industrial school from the board of trustees to the board of control.

The appropriations made by the legislature are as follows:

For expenses of legislative committees visiting public institutions	$700.00
For telegraphing on statehood matters	50.00
For additional copies of governor's report of 1904	150.00
To discharge certificates of indebtedness of Tempe Normal School	4,500.06
To discharge certificates of indebtedness of Northern Arizona Normal School	2,872.17
For printing additional copies of the laws of 1903	350.00
For postage stamps and newspaper wrappers for members of legislature	380.00
For the relief of F. C. Stein	446.20
Rebuilding schoolhouse near Clifton, damaged by flood	3,000.00
For erection of Captain O'Neill Rough Rider monument	10,000.00
For various improvements at the university	20,000.00
For Territorial fair	30,000.00
For relief of Mrs. Aceana Tafolla, widow of a deceased ranger	300.00
For salary of Territorial auditor for two years	4,800.00
For salary Territorial treasurer, two years	5,000.00
For salary attorney-general, two years	3,000.00
For salary assistant Territorial librarian, two years	1,200.00
Private secretary to the governor, two years	3,600.00
Auditor's clerk, two years	3,600.00
Superintendent public instruction, two years	3,600.00
Superintendent Territorial prison, two years	6,000.00
Five district judges, two years	15,000.00
For expense office of board of control	500.00
For rewards for apprehension of fugitives from justice	3,500.00
For newspaper subscriptions for Territorial library	300.00
To repay Jean Allison money expended by him on account of game commission	222.25
For blanks and stationery for auditor's office	2,000.00
For maintenance of Territorial museum	200.00
For salary deputy clerk of supreme court, two years	1,800.00
For insurance on Territorial library	500.00
Office contingencies of governor, two years	1,000.00
For filing cases, etc., for office of auditor	700.00
For office expense of clerk of supreme court	200.00
To pay Southern Pacific Railroad for transportation of militia	993.87
To reimburse Captain Mossman of the rangers, expenses by him	414.15
For use of Territorial library	1,500.00
For improvements to industrial school	7,500.00
To pay extra clerical service at session of legislature	13,170.00
To pay chief clerk of house and council for revising journals for publication	200.00
For printing reports of Territorial officers	2,000.00
For printing rules of legislative assembly	50.00
National Guard expenses at encampment	169.29
Telegraphing by legislature	163.64
For care of capital building and grounds	4,000.00
For extra compensation to attachés of legislative session	1,140.00
For printing proceedings of legislature in newspapers	750.00
For rent of typewriters for use of committee clerks	167.50
For Arizona Pioneer Historical Association	1,500.00
Salary public examiner	5,500.00
To pay expenses of office of public examiner	2,750.00
Making a total of specific appropriations of	175,915.04

In addition to the above specific appropriations, tax levies were made for various purposes, a list of which, together with the rate of the

levy and the estimated amount that will be realized therefrom, is as follows:

For dormitory at Northern Arizona Normal School, 1½ cents on each $100 of valuation	$10,000
Tempe Normal, for maintenance, 1½ cents	10,000
Tempe Normal, for building dining hall, training school, and other improvements, 5½ cents	55,000
Making a total of (estimated)	75,000

There are, it should be understood, certain other fixed levies provided by various older statutes to raise revenues for the maintenance of the various public institutions.

PENAL INSTITUTIONS.

The Territory has two penal institutions—the Territorial prison at Yuma and the industrial reform school at Benson.

TERRITORIAL PRISON.

In the Territorial prison at the beginning of the fiscal year, July 1, 1904, there were in confinement 294 prisoners. At the close of the year there were 329 prisoners, showing an increase of 35 for the period covered by this report, as against 10 for the preceding year.

It is of interest to note the nationality of the convicts, as shown by the table below. It is a rule of the prison to classify Caucasians in two groups—" whites " and " Mexicans."

Convicts, by nationalities.

	Whites.	Mexicans.	Indians.	Negroes.	Chinamen.
In confinement July 1, 1904	122	144	13	13	1
Received during the year	71	76	3	7	1
Discharged during the year	60	49	4	9	1
In confinement June 30, 1905	133	171	12	11	1

There is but one woman convict.

Nativity of the prisoners.

Mexico	137	Michigan	3
Arizona (including 25 Mexicans, 12 Indians, and 13 whites)	50	Arkansas	3
New Mexico	9	Kansas	3
Texas	18	New York	2
Tennessee	3	Utah	5
Massachusetts	3	South Carolina	1
Mississippi	1	Iowa	2
Pennsylvania	10	Idaho	1
California	24	Minnesota	2
Maryland	2	Indiana	2
Kentucky	4	Oregon	2
Missouri	8	Sweden	1
Nevada	3	Germany	3
Illinois	8	China	1
Wisconsin	2	Ireland	3
Georgia	3	Scotland	1
Colorado	2	Canada	3
Louisiana	2	Total	329
Maine	2		

The prisoners received during the year were from the following counties:

Cochise	45	Mohave	4
Yavapai	23	Navajo	1
Santa Cruz	4	Pima	12
Coconino	4	Pinal	3
Apache	1	Yuma	7
Graham	13	Gila	13
Maricopa	16		

There were 12 United States prisoners received, 2 of whom were from the first judicial district, 8 from the second, and 2 from the third.

During the year 124 prisoners were discharged, as noted below.

By expiration of sentence	96	By order of supreme court	2
Pardoned to restore citizenship	10	Executed	1
Pardoned	1		
Paroled	8	Total	124
Died	6		

The average number of convicts in the prison during the year was $318\frac{19}{20}$.

The prison is the most expensive of the Territory's public institutions. The gross expense for the year was $54,388.68. Of this sum $30,465.75 went for salaries and wages and $23,913.93 for maintenance and repairs. The total earnings and receipts amounted to $5,461.29, making the total net cost of the institution for the year $48,927.39. The gross cost per prisoner for the year was $170.46; the net cost $153.34. The average daily gross cost per prisoner for the year was $0.467; the average net cost was $0.42. This was a reduction of $0.03 per capita, as compared with the preceding year.

A serious problem in Arizona, as in all States, is that of providing employment for the convicts. While all of the prisoners are expected to perform hard labor, the fact is, unfortunately, that it is impossible to find work for them to do at all times. No manufacturing is carried on, and aside from constructive work about the prison the labor is confined chiefly to breaking rock. For the crushed rock there is a limited market at Yuma. The late legislature attempted to solve the problem by passing a bill providing for the employment of the convicts in the construction of public highways in the Territory. The provisions contained in the bill were impracticable, however, for the reason that it was required that the prisoners should be employed in each county in proportion to the number of convicts in the prison from each county. There being thirteen counties in the Territory, this would have required the maintenance of at least thirteen convict camps, many of them so small that the cost of maintenance and safe custody would have been prohibitive. For this reason the bill failed to receive executive approval. It is to be hoped, however, that the next legislature will enact such legislation as will enable the board of control to provide the necessary employment for the convicts.

At considerable expense a prison farm was established several years ago, it being contemplated that during the greater part of the year there would be work for the convicts on the farm, but experience has demonstrated that the farm is of little utility. It is annually overflowed by the Colorado River. The failure of the Territory to

provide "hard labor" for the prisoners has a strong tendency, I am convinced, to lessen the terrors of prison life for a certain class of lawbreakers.

The sanitary conditions at the prison are good, and that, with the healthful climate, accounts for the fact that the health of the prisoners in general is excellent. There were but six deaths in the prison during the year. Three of these were from consumption, one from pneumonia, and two from general debility.

TERRITORIAL INDUSTRIAL SCHOOL.

The industrial (reform) school is maintained at Benson, in Cochise County, for criminal and incorrigible youth. The institution was opened in December, 1903.

On the 30th day of June, 1905, there were 43 boys and 2 girls undergoing sentence at the institution.

The law provides for the commitment of two classes of offenders—

1. All infants between the ages of 8 and 16 years who are proved guilty of an offense otherwise punishable by imprisonment in the county jail or Territorial prison.

2. Infants committed by any judge of the district court or probate court on the complaint in writing, and due proof thereof by the parent or guardian of such infant that, by reason of incorrigibility or vicious conduct, such infant has rendered his control beyond the power of such parent or guardian, making it requisite that from a regard for the future welfare of such infant and for the protection of society he be placed in the industrial school.

Of the total number of inmates at this time, at least one-half have been committed to the institution on the complaint of parents or guardians. This feature of the law, I am convinced, sets a premium upon parental negligence. Negligent and shiftless parents, finding that on a complaint from them that their children are incorrigible the Territory will assume the responsibility and expense of maintenance and education of such children, are too willing to shift all responsibility upon the Territory. The next legislature undoubtedly will take cognizance of this unsatisfactory state of affairs.

The cost of maintaining the industrial school has been an expensive feature of the Territorial government, and with a view to lessening the expense the late legislature enacted a law abolishing the board then governing the institution and placed the school in the hands of the board of control. It is hoped that the new policy will result in more economical management.

The total cost of maintenance for the last fiscal year was $24,639.33.

In establishing the school the legislature acted in conformity with a healthy public sentiment. It is undoubtedly unwise for society to place youthful offenders in the company of older criminals in the jails or the penitentiary, and a reform school properly conducted will undoubtedly have a good effect in reforming wayward youth. But as already pointed out, the law must be amended in order to safeguard the Territory from imposition by parents who are in most cases inexcusably and perhaps criminally negligent of their duties.

At the institution regular hours are observed. Inmates attend school one half of each day and labor the other half. A competent instructor is employed. The course of study includes reading, writ-

ing, spelling, arithmetic, geography, and a speaking knowledge of the English language. English alone is spoken, except to inmates who understand Spanish only. Spanish is spoken only until the children have learned to express themselves in English.

This rule was found to be imperative in view of the fact that a large majority of the children committed to the institution are of Mexican parentage.

THE COURTS AND LITIGATION.

There are five different systems of courts in the Territory, viz: The supreme court, the district courts, the probate courts, the courts of the justices of the peace, and municipal courts in the various cities and towns for the trial of offenses against municipal ordinances.

The supreme court of the Territory consists of a chief justice and four associate justices. These justices are appointed by the President of the United States. The jurisdiction of the supreme court is chiefly appellate, having original jurisdiction in habeas corpus, mandamus, etc. Appeals lie to it from the various district courts. The district courts are created by local statutes. The Territory is divided into five judicial districts, to each of which is assigned one of the justices of the supreme court, who presides in the district courts of the district to which he is assigned. A district court is provided for in each county wherein stated terms are fixed by law. Under the organic act the district court is vested with the same jurisdiction in all cases arising under the Constitution and laws of the United States as is vested in the circuit and district courts of the United States. This jurisdiction is exercised at only one designated place in each of the five districts. The district court established by the local legislature is a court of general civil and criminal jurisdiction. All distinction in form of procedure between suits in equity and actions at law are abolished by statute, and a general statutory procedure is prescribed. The district courts have original jurisdiction in civil cases where the amount involved exceeds $100. They have exclusive original jurisdiction of all crimes amounting to felony and of misdemeanors where the punishment exceeds a fine of $300 or imprisonment in the county jail exceeds six months, and jurisdiction concurrent with that of justices of the peace in certain misdemeanors. The district courts have also appellate jurisdiction of certain cases appealed from the probate, justice, and city courts.

Probate courts have the general jurisdiction that their name implies. The judges are elective.

Justices of the peace are elective and have civil jurisdiction for money demands not exceeding $300, and of misdemanors.

The common-law right of trial by jury in both civil and criminal cases prevails.

The common law constitutes the basis of our jurisprudence. There are, of course, many statutory modifications of the common law. We have a civil code of procedure, and crimes, although their definition closely follows the common law, are all statutory.

The community rule of property, of both real and personal property, prevails—that is, husband and wife are deemed common owners of all property acquired by either during their marriage, except such as is acquired by gift, devise, or descent.

Questions arising under the public-land laws, mines, and irrigation figure prominently in the litigation in the Territory.

Statutes of limitation are, as a rule, short.

The personnel of the bar of the Territory ranks well in point of ability. Good law libraries are found in most of the towns. The law department of the Territorial library has complete sets of all the State and Territorial law reports.

I have caused to be tabulated some data relative to this subject, which follows:

Members of the bar.

County.	Number.	County.	Number.
Apache	4	Pima	47
Cochise	48	Pinal	3
Coconino	8	Santa Cruz	9
Gila	10	Yavapai	22
Graham	16	Yuma	5
Maricopa	55		
Mohave	3	Total	234
Navajo	4		

Business in the supreme court of the Territory.

Nature of action.	Cases on calendar June 30, 1904.	Cases filed during the year.	Cases disposed of during the year.	Cases affirmed.	Cases reversed.	Cases dismissed.	Habeas corpus writs dismissed or denied.	Cases on calendar June 30, 1905.
United States cases:								
Civil	1	3	2	1	1			2
Criminal		1	1	1				
Territorial cases:								
Civil	19	43	35	20	6	9		27
Criminal	6	35	40	18	3	1	18	1

Business in the district courts, by counties.

County.	Civil cases on calendar July 1, 1904.	Civil cases filed during the year.	Civil cases disposed of during year.	Felony indictments returned.	Felony trials.	Felony convictions.
Apache	26	26	24	8	1	1
Cochise	202	427	221	57	65	60
Coconino	35	35	35	50	24	12
Gila	36	84	47	28	19	18
Graham	198	112	269	25	20	17
Maricopa	121	644	339	29	17	17
Mohave	22	56	53	5	5	4
Navajo	8	4	4	4	2	1
Pima	117	343	334	33	24	24
Pinal	13	23	15	4	6	6
Santa Cruz	27	95	46	27	8	7
Yavapai	192	267	225	39	24	24
Yuma	38	45	45	23	16	15

LABOR.

The chief demand for skilled labor is in the mines and smelters and on the railroads; for unskilled labor, around the mines and in railroad construction work. There was a good demand for all classes of

labor throughout the year. Wages and hours were satisfactory, as a rule, and there were no strikes of importance. The figures in the following table show the average wages paid in the various lines of industry:

Occupation.	Wages.	Hours.	Occupation.	Wages.	Hours.
Mine labor, underground:	*Per day.*		Smelter—Continued.	*Per day.*	
Machine men	$3.50 to $4.50	8	Car men	$2.75	10
Hand miners	3.00 to 3.25	8	General labor	2.25 to 3.00	8 to 12
Trammers	3.00	8	Railroad:	*Per month.*	
Foremen	5.00	12	Engineers	100.00 to 200.00	
Shift bosses	4.00	12	Conductors	100.00 to 150.00	
Timbermen	4.00	10	Firemen	75.00 to 100.00	
Mine labor, surface:			Brakemen	80.00 to 100.00	
Blacksmiths	4.00	10		*Per day.*	
Machinists	4.00	10	Bridge men	2.75 to 3.50	10
Blacksmiths' helpers	3.00	10	Blacksmiths	4.00	
Hoist engineers	4.00	10	Boiler makers	4.00	10
Other engineers	4.00	10	Section hands	1.50	10
Firemen	3.00	12	Laborers[a]	1.00 to 1.50	10
Carpenters	4.00	10	Laborers[b]	2.00 to 2.50	10
Electricians	4.00	10	Mechanics	3.00 to 3.50	10
General labor, common	2.00 to 2.50	10	Foremen	3.00 to 5.00	10
Smelter:			Section work	1.75 to 2.00	10
Foremen	5.00	12	Miscellaneous:		
Shift bosses	4.00	12	Linotype operators	4.50	8
Engineers	5.00	8	Compositors, day	3.00	8
Skimmers and tappers	4.00	12	Compositors, night	3.50	8
Swampers and ladle men	3.00	12	Pressmen	4.00	8
Motormen	3.50	12		*Per month.*	
Motor brakemen	3.00	10	Clerks, bookkeepers, etc	50.00 to 100.00	
			Farm hands	30.00	
			Domestic servants	15.00 to 35.00	

[a] Mexican and negro. [b] White.

CORPORATIONS.

A subject to which I have to refer, and with the most reluctance, is the law of the Territory relating to general corporations and its operation.

The organic act provides that the legislature may by general law provide for the organization of corporations for "mining, manufacturing, and other industrial pursuits, and for conducting the business of insurance, banks of discount and deposit (but not of issue), loan, trust, and guaranty associations, and for the construction and operation of railroads, wagon roads, irrigating ditches, and the colonization and improvement of lands in connection therewith, or for colleges, seminaries, churches, libraries, or any other benevolent, charitable, or scientific association." (Sec. 1889, R. S. U. S.)

This seems to be a specification of the objects for which the Territorial legislature may authorize the organization of corporations, although it is a very comprehensive one. Being, however, a specification, it would seem to involve prohibition of the organization of corporations for purposes not specified. The local statute, however, provides that corporations may be organized "for the transaction of any lawful business." The provisions of the organic act in its present form were adopted in 1886 (sec. 5, chap. 818, 49th Cong., 1st sess., July 30, 1886). The history of the legislation of Congress shows that from time to time there has been an increase in the number of purposes for which the organization of corporations may be authorized,

but there has always been a specification of those purposes, leading us to the inference that there was a limitation intended. That Congress did not intend that corporations should be authorized by Territorial legislation for the transaction of any (every) lawful business is clear. That the Territorial legislature has exceeded its powers is equally clear, and that sooner or later this will lead to confusion and possibly serious loss seems evident.

The Territorial statute on this subject imposes probably less of restraint upon those proposing to incorporate under it, and upon the corporation itself, than that of any State or Territory in the Union. There are no provisions that even suggest that they are devised to compel honesty in the administration of corporate affairs, or the discharge of any duty to the public. The corporation may begin business without the payment of a dollar of its capital stock. There is no provision for publicity of the names of the stockholders, the amount of their subscriptions, or the amount of their subscriptions they may have paid, and stockholders may, by the simple insertion of that provision in the articles of incorporation, exempt themselves from all liability for the corporate debts. These things have been so advertised about the country that hundreds and thousands of corporations have been organized by nonresidents of the Territory under the provisions of the laws of Arizona. I can not say, of course, what proportion of these corporations were not organized in good faith and are mere " fake " corporations, without business, property, or credit, but that there are hundreds of them I can safely say. That this state of things must injuriously affect the credit of Arizona must be apparent.

It so little comports with the dignity and self-respect of a people proud of their ability and right of self-government that it seems strange that such legislation should have found its way into our statutes.

That it was promoted by persons who saw in it a profitable field for fees in the business of organizing corporations seems hardly sufficient to excuse the heedlessness of the legislators.

The specious argument was used that the fees exacted could be made an important source of revenue to the Territory, and this may account for it.

Since the enactment of the law, in September, 1901, to the present time (less than three years) there have been incorporated under it 7,187 corporations, having the startling aggregate capitalization of $24,289,182,000.

Statement of the corporation fees received by the Territorial auditor and covered into the treasury.

1904—	
July	$2,370.75
August	2,383.90
September	2,810.10
October	3,110.40
November	2,586.90
December	2,995.70
1905—	
January	2,621.90
1905—	
February	$2,960.80
March	4,509.00
April	4,014.55
May	4,732.30
June	3,577.80
Total	38,674.10

THE INDIANS.

According to the census of 1900 there were 26,480 Indians in Arizona. It is not believed that the Indian population has increased materially, if at all, since that date. There have been no serious epidemics among them, but it is noticeable that changed conditions in living, wrought by civilization—the substitution of houses for life in the open air and "the white man's clothing"—have subjected them to the white man's diseases.

Indian outbreaks in Arizona belong to the past. All of the tribes are peaceable and anxious to remain so. The Apaches, so long considered incorrigible, are content to remain on their reservations in peace, and many of them are proving to be good laborers on railroads and other public works.

It is but seldom that an Indian commits a felony, and there are but few Indians in the Territorial prison. The strongest civilizing influences are railroads and the Indian schools. From year to year there is a gratifying change in the attitude of the older Indians toward the schools. It was but a few years ago that in many cases children had to be taken from the reservations by force for education in the schools, but that is no longer the case. It is scarcely possible to exaggerate the good that is being accomplished by the Indian schools in breaking down the opposition of the Indians to the ways of civilization.

In order, however, to achieve the greatest good from the admirable system of Indian education, the Government should follow the graduates from the schools with close attention. Instead of permitting them to return to their reservations to take up a life of idleness, employment should be provided for all Indians who have completed a course at the schools. Such an undertaking would be easy if the Government would provide ample water for the irrigation of Indian farms.

On the Gila River Reservation there is land enough to provide an abundance of farms, and water storage on the Gila would solve the question of water supply. The construction of the projected San Carlos reservoir would be of incalculable benefit to the Indians, and from an economic standpoint it would prove an excellent investment for the Government.

The detailed reports of the Indian agents and superintendents of Indian schools in the Territory will be found embodied in the annual report of the Commissioner of Indian Affairs.

ARIZONA FORESTS.

The area of Arizona is so vast and the proportion of desert is so great that the Territory's wealth of forests is but imperfectly appreciated. Probably the largest unbroken forest in the world lies within the San Francisco Mountains and Black Mesa Forest reserves, in Coconino, Yavapai, Navajo, and Apache counties. Its area is estimated to be more than 6,000 square miles. This timber is usually found at an altitude between 5,000 and 7,500 feet. The most valuable timber (pine) is found within the reserves mentioned,

but the timbered area of the northern portion of the Territory stretches, with more or less extended interruptions, to and beyond the Grand Canyon of the Colorado to the north, to Bill Williams Mountain in the west, and southward to the great rim where the Colorado plateau breaks down to the southern plains. Easterly, in the higher ranges of the White Mountains, there is a dense growth of magnificent trees. Long arms of forest areas also exist in the mountains immediately south of the Colorado plateau. The ranges in the southeastern portion of the Territory are also timbered above the altitude of 7,500 feet. In the Mogollon Mountains, in Coconino and Gila counties, in addition to the yellow pine, there are large bodies of oak timber suitable for the manufacture of farm machinery, wagons, etc., and for finishing lumber, but until penetrated by railroads the region will be practically inaccessible.

In pursuance of the wise policy of protecting the timber, the Government has established nine forest reserves within the Territory. These reserves embrace an area of 7,242,170 acres.

PRODUCTION OF LUMBER.

The production of lumber on a large scale is confined to Coconino County, the headquarters of the Arizona Lumber and Timber Company and the Saginaw and Manistee Lumber Company being at Flagstaff and Williams, respectively. Each company operates a logging railroad and possesses all modern facilities for producing lumber ready for market.

The Arizona Lumber Company reports to me that its production of lumber for the fiscal year ended June 30, 1905, amounted to 30,000,000 feet. This product was not equal in volume to that of the previous twelve months by nearly 10,000,000 feet, because of the interruption of operations on account of heavy rains at various times during the season, and the company was compelled to suspend operations almost entirely during the first two months of this year on account of wet-weather conditions. The plant runs day and night when the weather permits. The Saginaw and Manistee Lumber Company reports that its production for the year was 22,500,000 feet of lumber. This company also found its operations interrupted by rains at various times during the year.

Both companies report an active demand for their product. The demand for Arizona lumber increases from year to year by reason of the depletion of the white-pine forests in the lumber States of the East and about the Great Lakes. This, coupled with the steadily increasing demand for white pine, has enlarged the field so that shipments are now made from Arizona to Colorado, Kansas, Nebraska, parts of Texas and Oklahoma, and even as far as Chicago and New York, although the quantity going to the last-named points is relatively small by reason of the longer haul and the extent of the market west of the Mississippi River. Both companies report an increased volume of trade in Arizona, which indicates a steady increase in the demand of the southwestern country, and a disposition to use the home product in preference to lumber from elsewhere. Until recent years nearly all of the lumber used in the Territory was shipped from Pacific coast points—the lumber districts of Oregon and Washington.

THE NATIONAL GUARD.

Under the encouragement given by the Dick bill, which forms the citizen soldiery of the nation into virtually a reserve of the Regular Army, there has been decided advancement in the National Guard of Arizona. According to the roster of organized militia submitted to the Military Secretary early this year, the guard has a total strength of 435. This is comprised into one regiment of six companies, with two added troops of dismounted cavalry. The strength is distributed as follows: Regimental headquarters, Phoenix; A, Thatcher; B, Phoenix; C, Tempe; D, Mesa; H, Yuma; I, Flagstaff; First Troop, Nogales; Second Troop, Morenci. According to the Arizona statutes the cadet company of the normal school at Tempe and the cadet battalion of the University of Arizona at Tucson are included as a part of the National Guard of Arizona, though not available for active service. An officer of the Regular Army is detailed for service with the university battalion.

The adjutant-general of the Territory, Col. B. W. Leavell, also occupies the position of officer detailed by the War Department, he being a retired officer of the Regular Army with rank of major.

The guard has become well equipped during the past two years, the intention being that it shall lack in nothing considered necessary in the Regular Army. It is armed with Krag-Jörgensen rifles and gatling guns.

The Territory has been remarkably free from disorders calling for the assistance of the National Guard, the only trouble of late years having been at Morenci, in June, 1903, when the regiment promptly and efficiently put down disorder in connection with a strike of over 3,000 miners.

Last September was held the first encampment of the guard at the Fort Whipple rifle range, 6 miles from Prescott. The regiment and attached troops, under Colonel McClintock, were in camp a week. The time was spent mainly in exercises, having especial use in training officers and men to care for themselves in camp and on the march and to be effective in the field against an enemy. Especial attention was given also to target practice, for which the near-by target range offered the best of facilities. The camp was highly praised by regular army visitors for neatness and for the manner in which the most absolute sanitary precautions were carried out. This year the command was in camp at the same place for nine days' duty, beginning August 3. This year the men were housed in conical war tents, instead of shelter tents, adding considerably to the comfort of the men.

Many of the officers and men of the National Guard of Arizona have seen service in the Regular Army, in the Rough Riders, First Regiment Territorial Volunteers, and in other volunteer regiments of the Spanish war. The personnel of the guard is of the highest, the men being uniformly of good character and excellent physique. There can be no doubt that in time of need, either in the suppression of internal disorder or for the protection of the nation, Arizona's citizen soldiery will compare favorably with the organized militia of many States and Territories of far greater advantages and much longer service.

THE ARIZONA RANGERS.

Under an act of the legislature approved March 21, 1901, an armed force known as the Arizona Rangers is maintained for the preservation of law and order in the Territory. The force consists of 1 captain, 1 lieutenant, 4 sergeants, and 20 privates, who provide at their own expense their arms, horses, and equipments. The cost of maintaining the rangers during the fiscal year amounted to $33,254.46. The law was enacted in order to enable the authorities to protect the frontier and preserve the peace and apprehend persons charged with crime. The members of the ranger force are authorized and empowered to make arrests of criminals in any part of the Territory. Upon the arrest of a criminal the ranger effecting the arrest is required by law to deliver him to the nearest peace officer in the county where the crime was committed.

While expensive, the ranger force has accomplished excellent results. Prior to the enactment of the law some sections of the Territory were infested by outlaws and desperadoes, and violent crimes, including stage and train robberies, were of frequent occurrence. The mountain retreats in the neighborhood of the Mexican border were the abode of desperate lawbreakers, and the local authorities were often unable to make arrests. A salutary change has been effected. Life and property are safe in all parts of the Territory, and no little credit for this state of affairs is due to the rangers.

The Government of Mexico maintains an active force of rurales in the border State of Sonora, whose functions are the same as those of the Arizona Rangers, and the two forces frequently act in concert. Complete harmony prevails between the two organizations, and they are of substantial assistance to each other. And, noting the good results accomplished by our rangers, the Territory of New Mexico this year established a similar organization—a company of "mounted police"—and harmonious action on the part of the two forces will increase the efficiency of the Arizona Rangers. Manifestly, the maintenance of a mounted constabulary in New Mexico and in the northern border States of the Republic of Mexico furnishes additional reasons for continuing the ranger force in this Territory. One of the strong arguments advanced for the creation of a force of "mounted police" in New Mexico was found in the fact that many dangerous criminals were known to be in hiding in that Territory, having been frightened out of Arizona by the activity of the rangers. It is obvious that if our ranger force should be discontinued this Territory would soon be an asylum for criminals that had been driven out of New Mexico.

The very great extent of country that is sparsely settled in Arizona, and the fact that the centers of population are generally separated by considerable distances, with practically unoccupied spaces intervening, and the contiguity of a foreign jurisdiction, present many temptations for predatory incursions by outlaws from either jurisdiction. Arizona is a frontier country, not only relatively to the rest of the United States, but to the neighboring Republic of Mexico. The remoteness of the country from the more densely populated and older States, and the apparent safety offered by the mountain and desert fastnesses, suggest an asylum for the fugitive from justice,

and afford greater freedom to the reckless and vicious and unrestrained to indulge in their nefarious propensities with impunity.

The local constabulary, although of high efficiency, is limited in its effectiveness to a fixed local habitat at centers of population, leaving necessarily more or less exposed to lawbreakers the intervening spaces. The ranger force is without this limitation. It is so organized that its members may go at once—and they are, in fact, sent by the captain of the force—wherever the exigencies seem to require, to patrol and protect any section of the Territory.

It is one of the functions of the force to acquaint itself with habitual criminals, desperate characters, and fugitives from justice of other States and countries, and to keep them under surveillance. Its greatest efficiency is that of a secret service—always alert, always on duty, and not limited or hampered by fixed locality. The force is wholly auxiliary and supplemental to the local constabulary, although independent of it. Probably the greatest benefit to the Territory from the ranger force is the fear implanted in criminals by its existence. Criminals have been brought by experience to have great respect for the rangers—they know that the rangers, in pursuit of men charged with crime, are relentless and persistent. Criminals know, too, that their movements from place to place in the Territory and their coming into or going out of the Territory are watched. This espionage is of the highest value as a deterrent of crime.

The personnel of the force is selected with great care. Sobriety, integrity, intelligence, physical courage, discretion, gentlemanly deportment, intimate acquaintance with the geography of the country—its roads, watering places, and local characteristics—are all requisites. The force is kept under strict military discipline.

During the year eight members of the force were detailed to work with the live-stock sanitary board in giving special attention to the live-stock interests, and by cooperation with the Arizona Cattle Growers' Association ample protection was afforded. Rangers were constantly riding the live-stock ranges, attending the round-ups, and patrolling those parts of the Territory not usually visited by peace officers, and the list of arrests tells a story of commendable vigilance. It is the belief of the captain, Mr. Thomas H. Rynning, that all the old gangs of "rustlers," smugglers, and wandering outlaws have been broken up. It is known that several desperadoes are in hiding in Mexico and do not dare to return to the Territory. The force has been especially efficient in assisting the Federal authorities in excluding and arresting Chinese who were unlawfully attempting to enter the Territory from Mexico.

During the year arrests were made by the ranger force to the number of 1,052. Of these, 264 were made on felony charges and 788 for for misdemeanors. Of the felony charges, 9 were for murder, 23 for felonious assault, 31 for burglary, 15 for robbery, 19 for embezzlement, swindling, forgery, etc., 23 for grand larceny, 35 for theft of cattle, 28 for theft of horses, etc. There were 13 arrests of escaped prisoners. There were 65 arrests for other felonies. Among these were Federal cases comprising smuggling, passing counterfeit money, desertions from the United States Army, violation of the immigration laws, etc.

Of the misdemeanor cases, 299 were classed as drunk and disorderly and disturbing the peace, 62 were for assault, 28 for petit larceny, 48

for carrying concealed weapons, 20 for violation of butcher license and stock law, 17 for keeping and frequenting opium resorts, 6 for conducting bunco games and gambling without license.

Other misdemeanor and vagrant cases amounted to 298.

Conviction and punishment have followed these arrests in the great majority of cases.

As railroads are constructed to the remote sections of the Territory the prevention and suppression of crime will become easier, and I am hopeful that within the near future the Territory can be warranted in reducing the force and thereby lessen materially the cost of its maintenance.

EDUCATION.

Arizona has an educational system of which the people are justly proud. In the efficiency of its schools the Territory will compare favorably with the older States. The general interest taken in the schools and the cheerfulness with which the expenses of their maintenance is borne attest a high quality of citizenship. There is scarcely a hamlet, no matter how isolated, which does not enjoy the facilities of a public school. Teachers are required to pass a rigid examination as to qualifications before they are employed, and the high salaries uniformly paid helps to secure the best talent.

Parents and guardians are required by law to send their children to school for at least six years—between the ages of 8 and 14—and the law is obeyed almost without exception by American parents. The exceptions are found among the Mexican population, and such exceptions furnish the only really serious problem that confronts the Territory in the matter of education. The law provides that under certain contingencies compulsory attendance may be waived. One of these contingencies is attendance at private schools, another is poverty—the inability of parents properly to clothe their children—and there is, unfortunately, a disposition on the part of Mexican parents to take advantage of these provisions.

Quite generally they prefer to patronize the parochial schools, if such schools are available, rather than to send their children to the public schools. But parochial schools are few in number. The result is that numbers of Mexican children are growing up in ignorance. This condition has prevailed ever since the Territory was organized. Indifference to the advantages offered by the public school system accounts for the fact that practically the only illiteracy to be found in Arizona is the illiteracy of Mexicans. They cling persistently to the Spanish tongue. The children learn a smattering of colloquial English, to be sure, but their conversation among themselves and with their parents is in incorrect Spanish. They do not speak English except when absolutely necessary.

And yet the race has great possibilities. Educated citizens of the Mexican race are prominent in business and the professions and are a credit to the Territory.

It is true that much can be said in extenuation of the attitude of our uneducated citizens of Mexican birth or descent toward the public schools. They look upon Americans as a numerically predominant race, aggressive in the introduction of unfamiliar customs and policies, some of which violate Mexican traditions. Many of them feel

a certain degree of timidity in the presence of Anglo-Saxons, and they are generally reluctant to be considered as intruding their company upon Americans. They prefer to live to themselves and to abide by their own traditional customs. They naturally regard the public school as a peculiarly American institution, maintained for Americans, and with which they have little in common. Their diffidence makes them reluctant to send their children into association with a greatly larger number of American children. Their embarrassment is increased because the American children do not speak the language of the Mexicans. Only patience and tact upon the part of the school authorities, and an effort on the part of all Americans to make the Mexicans feel that they also are American citizens and have a right to enjoy all the privileges of American citizenship, will make the public schools more popular with this class. Also, however, it is necessary for them to realize that they are standing in the way of their own advancement so long as they adhere to the Spanish-taught parochial schools instead of embracing the manifest advantages of the public schools.

It is certainly necessary to amend the law as to compulsory attendance at the public schools School trustees, when assured that parents are unable to clothe their children properly, or when assured that children are attending private instruction at home or attending parochial schools, must perforce accept such statements and excuse the delinquent parents. When analyzed, the alleged inability to clothe children properly for attendance at school is not sustained by the facts, except in rare instances—say, in cases of widows or of invalid fathers. The demand for laborers is always equal to the supply—generally it exceeds the supply—and no citizen, however humble his circumstances, can honestly plead inability to secure employment and inability to procure decent clothes for his children. I am strongly of the opinion that compulsory education without exception should be made the rule by law.

During the fiscal year the number of children attending the public schools was 19,928, the number attending private and parochial schools was 1,659, and the number between the ages of 8 and 21 that attended no school was 8,401.

The following statistics are gathered from the annual school census taken in May, 1905:

The total number of school children between the years of 6 and 21 was 29,290, a gain of 1,960 over the previous year.

The number of white children was 29,133; colored, 157; number enrolled in the public schools, 22,107; average daily attendance, 13,883; number attending high schools, 315; number attending grammar schools, 5,797; number attending primary schools, 15,995; number of men teachers, 97; number of women teachers, 442; average salary paid men teachers, $87.07 per month; average salary paid women teachers, $73.02 per month; total valuation of school property, $944,258; total bonded indebtedness, $452,487.83; value of school apparatus, $25,573.96; value of school libraries, $14,358; number of volumes in libraries, 19,027; number of school districts, 288; number of high schools, 3; number of grammar schools, 146; number of primary schools, 337; number of public kindergartens, 2. The total receipts, including moneys received from sale of school bonds and also including balances on hand June 30, 1904, aggregating $121,203.82, were $644,553.14. The total expenditures for maintenance, buildings, furniture, and miscellaneous expenses, and for the redemption of school bonds ($24,000) were $460,062.53.

NORMAL SCHOOLS.

Two well-equipped normal schools are maintained, one at Tempe, in the Salt River Valley, and the other at Flagstaff, in northern Arizona.

The normal school at Tempe was opened in 1886. For several years the attendance was small, but the increase was gradual until in the year 1894, when the attendance reached 100, and it became evident that a large building was necessary. The present beautiful, commodious main building was completed in 1897. Since 1894 the school has had a very rapid growth, as shown by the following statistics: In 1900 the attendance was 131; in 1901, 137; in 1902, 165; in 1903, 194, and during the last year the attendance was 228.

The attendance at the teacher's training school department in 1900 was 47; in 1901, 48; in 1902, 73; in 1903, 101, and in 1904, 129.

Thus the enrollment of both schools for the year 1904–5 was 357, and I am advised that the attendance will be increased by at least 25 per cent for the ensuing year.

During the coming year there will be 15 members of the faculty, including teachers, in the training school. Every member of the faculty is a specialist in some line of work, and as a body they represent the educational ideas of all sections of the country. The faculty comprises graduates from the following universities: Jena (Germany), Iowa, California, Missouri, Northwestern, Columbia, Chicago, Harvard, Johns Hopkins, Syracuse, Stanford, and Toronto (Canada). Most of them are also graduates of the best normal schools in the United States.

Three regular courses of study are offered—a two years' course to graduates of the high school, a five years' academic and professional course to graduates of the common schools, and a four years' Latin course to students who expect to enter some university after completing the normal course. Special courses are arranged for students who do not expect to graduate. The work of the training school covers the eight grades of the public school. The work of the normal includes English, Latin, mathematics, history, civics, professional instruction, military, manual training, commercial, drawing, and music.

Diplomas are granted to graduates of the normal, which entitle them to teach in the schools of Arizona for life. These diplomas are also accepted in California and other States.

The equipment of the school has received careful attention, and the physical and chemical laboratories are among the best in the world. The biological laboratory is equally well equipped. The library contains about 4,000 volumes, which have been carefully selected by the faculty and represent the work of the various departments. The reading room is supplied with all of the best current literature. Ample provisions are made for athletics. The athletic field is equipped for military drill, football, baseball, and track work. Included in the campus are basket-ball courts and tennis courts.

The campus covers an area of 20 acres. Liberal appropriations have been made from time to time for its improvement, so it now presents a beautiful and systematic appearance—shady groves, green lawns, and beautiful driveways, bordered with many species of palms, cypress, roses, oleanders, pepper trees, and shrubbery of all kinds.

Dormitories are provided for both young women and young men. The ladies' dormitory was constructed two years ago at a cost of $28,000, and has just been enlarged. It now has sufficient capacity to accommodate 88 students, and the young men's dormitory will accommodate 22. Everything necessary has been done to make the dormitories comfortable and convenient homes for the students in them. Good board and furnished rooms can be obtained for $15 per month. This includes electric light, steam heat, running water in rooms, baths, use of pianos, etc.

Altogether, the buildings and equipment of the school represent the expenditure of $193,300. The annual appropriation for the maintenance of the school is about $40,000. The school year is from September 1 to June 1. The total number of graduates from the school is 223. The graduates last year numbered 23. There are 41 students in the senior class of 1906.

The normal school at Flagstaff, although not so extensively equipped as the school at Tempe, is operated on the same lines, and quite as successfully.

The school was opened six years ago, and the attendance has gradually increased from year to year. The total enrollment during the school year which ended June 30, 1905, was 94, comprising 63 in the normal department and 31 in the training department.

The main building is a handsome structure of stone, two stories in height. A dormitory for young women students is under construction and will be completed in September, 1905. Besides the new dormitory many substantial improvements have been made during the year, including the equipment of the physical and chemical laboratories and drawing room, library, and reception room.

In all 38 students have graduated from the school, there having been ten graduates this year. The regular session of forty weeks will open September 12, 1905, and the outlook for a largely increased attendance is encouraging.

UNIVERSITY OF ARIZONA.

The University of Arizona is at Tucson. The institution was established by an act of the thirteenth legislative assembly, approved by the governor March 12, 1885. A tract of 40 acres of land was given by the citizens of Tucson as a site. The university was opened to students in October, 1891. The purpose of the university, in the language of the act creating it, is "to provide the inhabitants of this Territory with the means of acquiring a thorough knowledge of the various branches of literature, science, and the arts," and, so far as possible, a technical education adapted to the development of the peculiar resources of Arizona. In furtherance of this latter purpose instruction is provided especially in agriculture and in the mechanic arts, and in mining and metallurgy. The university, on account of its situation, is especially deserving of the attention of students who wish to take a course in mining engineering. Mines developed on a large scale are within a few miles of the university, and the number and magnitude of mining enterprises are steadily increasing. Probably no university in the United States offers such fine advantages to the student in mining engineering who desires to see the actual opera-

tion of great mines or the development of new mining enterprises while carrying on the theoretical and experimental work of the mining course.

The agricultural experiment station, a department of the university, is wholly engaged in developing the agricultural resources of the Territory.

The university campus, consisting of 55 acres, is situated upon high ground, a mile from the business center of the city, with which it is connected by a street-car line. On every side there is a fine view of mountain scenery of remarkable extent and grandeur.

The main building, University Hall, is 200 by 105 feet, two stories in height. The first story is of gray stone and the second of red brick, and the building is completely surrounded by a wide two-story veranda. The building contains reception rooms, laboratories, apparatus rooms of the various departments, assembly room, and the office and library of the experiment station.

The library and museum building, costing about $32,000, including furnishings, was occupied in June, 1905. It is a handsome red brick and Bedford sandstone building with a massive tile roof. The interior finish is in natural oak and pine. Other buildings provide ample dormitory and dining facilities. In still other buildings are the shops and assaying apparatus and drawing room for mechanical and free-hand drawing. A large building for forge work, machine practice, and carpentry is the shop and assay building. The commercial assaying department occupies a number of rooms fully equipped with a large melting furnace, the necessary muffle furnaces, and other accessories for making complete and accurate assays. The mill, or mining machinery building, is a plain wooden structure in which are placed jigs, concentrating tables, separators, and a stamp mill, constituting the mining laboratory. The gymnasium hall is a substantial building of red brick 40 by 80 feet. The library contains 10,000 bound volumes and 120,000 pamphlets.

In the college are offered courses leading to the following degrees: (1) Bachelor of philosophy; (2) bachelor of science.

The school of mines offers a four-year course leading to the degree of bachelor of science in mining; a short two-year course in mineralogy and assaying.

In addition to the agricultural experiment station, there is a subcollegiate department of manual training. The subcollegiate department embraces manual training, English, scientific and classical subjects, stenography, bookkeeping, and business practice.

The courses offered in the agricultural and mechanic arts provide both a liberal training along literary and scientific lines and technical training along engineering, mechanical, and agricultural lines. Wide latitude of election is given in the literary and scientific courses, but the courses in engineering are more rigid in their requrements. Tuition is free to all students residing in Arizona. For nonresidents a nominal tuition fee is charged.

Military science and tactics for men, and physical culture for women are required during the freshman and sophomore years. The faculty consists of a president and 25 instructors. There were 205 students in attendance during the last year.

ASYLUM FOR THE INSANE.

The Territory has one asylum for the insane, which is located at Phoenix. At the close of the fiscal year it contained 255 patients. Of these, 212 were males and 43 were females. During the year 99 patients were received by commitment and 90 were discharged. Of the patients received, 80 were males and 19 were females. Of the patients discharged, there were 75 males, and 15 females. The number noted under the head of "Discharged" comprised the patients released as cured, 41; released on parole, 12; escaped, 3; and released by death, 34.

The recovery rate on the number admitted during the year was 53.5 per cent. The apparently high death rate was perhaps due to some extent to the overcrowded quarters, although sanitary conditions were maintain at the highest standard that was possible under the existing conditions.

A year ago the construction of additional ward buildings for the asylum was begun, and the work was finished about the first of June, this year. The new construction provided quarters for 96 patients. The new buildings were constructed pursuant to the provisions of an act of the twenty-second legislature, which provided for a bond issue of $100,000 for asylum improvements. The cost of the improvements during the past year has been slightly in excess of $20,000. Undoubtedly the money available from the bond issue mentioned—the bonds are to be sold only as needed—will be sufficient to provide comfortable quarters for all patients for many years to come, notwithstanding the steady increase in the population of the institution.

The nationality of the patients admitted during the past year is fairly illustrative of the nationality of the patients as a whole. The 99 patients received during the year were natives of the following countries: United States, 46; Austria, 3; Belgium, 1; Canada, 6; England, 3; Finland, 1; Germany, 7; Ireland, 3; Italy, 1; Mexico, 21; Norway, 1; Poland, 1; Russia, 1; Spain, 1; Sweden, 2; unknown, 1. It requires but a cursory analysis of these figures to demonstrate that the proportion of foreigners in the asylum greatly exceeds the proportion of foreigners in the population of the Territory. The figures apparently indicate that insanity attacks people of other nationalities more readily than it attacks Americans.

The total expense of maintaining the asylum during the year was $49,654.85. The value of products used from the asylum farm was $5,621.47; cash receipts amounted to $904.91. The net cost of operating the asylum for the year was $43,128.47. The gross per capita cost was $194.22; the net per capita cost, $168.74. The gross daily per capita cost was $0.528; the net daily per capita cost, $0.45.

WOMEN'S CLUBS.

The Arizona Federation of Women's Clubs has a membership of 378. Twelve clubs are included in the federation, namely:

The Woman's Club, Bisbee; organized 1900; 42 members. Object: Study of literature and current events, education, social and civic interests. Meets on Fridays, October to June.

The Village Improvement Club, Florence: organized 1900; 20 members. Object: Town improvement, literature. Meets on Saturdays, November to May.

The Self-Culture Club, Glendale; organized 1901; 6 members. Object: Self-culture, historical studies. Meets semimonthly, October to July.

The Current Topics Club, Nogales; organized 1900; 12 members. Object: Study of current events, parliamentary practice. Meets Fridays throughout the year.

The Friday Club, Phoenix; organized 1897; 13 members. Object: Historical studies. Meets on Fridays, October to May.

The Harmony Club, Phoenix; organized 1898; 30 members. Object: Social intercourse, philanthrophy, music. Meets on Wednesdays, middle of October to May.

The Woman's Club, Phoenix; organized 1900; 71 members. Object: Studies in art and history, civics, and education, music, household economics, social and philanthropic activities. Meets on Tuesdays, middle of October to May.

The Monday Club, Prescott; organized 1895; 79 members. Object: Studies in art, music, and literature. Meets on Mondays, October to June.

The Sahuara Club, Safford; organized 1901; 15 members. Object: Literary and historical studies. Meets semimonthly.

The Woman's Club, Tucson; organized 1900; 50 members. Object: Study of American literature, parliamentary practice, educational and civic activities. Meets on Mondays, November to May.

The Literary Club, Winslow; organized 1899; 15 members. Object: Literary study. Meets first and third Tuesdays, September to June.

The Woman's Club, Yuma; organized 1903; 25 members. Object: Study of history, literature, domestic science, civics. Meets on Fridays, October to May.

ARIZONA POST-OFFICES.

The receipts of Presidential post-offices in the Territory during the year ended March 31, 1904, were $175,740.83, as against $167,419.97 for the preceding year, a gain of $8,320.86 for the year. Receipts of fourth-class post-offices increased from $69,916.11 to $71,378.21, a gain of $1,462.10. The total receipts of Presidential and fourth-class post-offices were $247,119.04, as against $237,336.08, a gain of $9,782.96 for the fiscal year.

The aggregate number of domestic money orders issued from the post-offices of the Territory during the year ended March 31, 1905, was 219,297, having a value of $2,414,432.86, as against 216,068, with a value of $2,465,361.53, for the preceding year. Total number of international money orders issued, 9,309, valued at $279,036.13, as against 6,634, valued at $184,858.75, for the previous year. Domestic money orders paid during year ended March 31, 1905, 66,177, valued at $978,693.10, against 68,237, valued at $1,020,232.87, for previous year; international money orders paid, 419, valued at $11,744.42, against 329, valued at $9,435.10, for the preceding year.

THE LIVE-STOCK INDUSTRY.

The growing of cattle and sheep on the open ranges is the most important branch of the live-stock industry in Arizona. The prosperity of range stockmen depends almost entirely upon weather conditions. Prolonged droughts result in scarcity of water and feed, and at times heavy losses are sustained; and as droughts are not infrequent, the industry has its hazardous features. During the year which ended in July, 1904, the precipitation throughout the Territory was so slight that water on some of the ranges entirely disappeared, and upon nearly all of them it was scarce. The feed on most of them was gone when rains began about the middle of July of that year. The losses

of cattle during the months of April, May, and June were enormous. On some ranges the loss was fully 75 per cent, and it probably amounted to at least 30 per cent, taking the Territory as a whole.

In July and August, 1904, rains were abundant, however, and again in January, February, and March of this year there was heavy rainfall all over the Territory, so that for nearly a year conditions have been ideal on the ranges. With the coming of the rains the range animals quickly regained their strength and soon became fat, and owners are rapidly recovering from their losses. No industry in the Territory is so subject to fluctuation, and two or three years of moderate rainfall are sufficient to place the range stockmen on a high plane of prosperity.

But little expense attaches to the business of growing cattle on the public domain. The ranges are necessarily vast in extent on account of the limited growth of feed almost everywhere, and cattle roam at will except during the spring round-up season.

For the sheep industry the past year has been the most prosperous in the history of the Territory. The sheep ranges are in the northeastern counties, in the mountainous regions, where feed is always more plentiful than upon the cattle ranges in the central and southern regions of the Territory. The sheep men sustained but slight losses on account of the drought. The summer rains of 1904 and the winter rains of this year caused a luxuriant growth of feed on all the deserts, and in January the sheep were driven from the mountains to the central valleys, whence the fat sheep were shipped to market. The yield of wool was excellent, and the high price of mutton and wool have marked the past twelve months as the best in the history of the sheep industry.

Several large shipments of cattle into the Territory from Texas and other States have been reported. These shipments were made for the purpose of restocking the ranges and replacing the losses incurred during the drought. All such importations are carefully inspected and sanitary requirements rigidly enforced.

The live-stock sanitary board reports that the shipment of cattle to points outside of the Territory aggregated 56,317 head. The cattle slaughtered within the Territory numbered 45,753 head.

Notwithstanding the serious losses sustained by range cattlemen, the assessment rolls of this year show a gain of 40,958 range cattle over last year. The range cattle assessed for taxation in 1904 numbered 225,116 head; this year, 266,074. The importations already alluded to explain in part this unexpected gain, and it is further explained by the fact that greater care seems to have been taken this year by county assessors in making their returns.

Abstracts of the assessment rolls of the several counties will be found elsewhere in this report. They show that 339,212 head of sheep were assessed for taxation, as against 277,315 head in 1904, a gain of 61,897. Goats assessed this year number 62,905; last year the number was 61,939. Six thousand nine hundred and seventy-five head of swine were assessed this year, as against 7,736 head last year.

The breeding of high-grade horses is becoming a profitable industry in the Salt River Valley. The climatic conditions are perfect. No shelter is required at any season of the year, and alfalfa makes a perfect forage food for horses. For grain food barley is almost exclusively used and is easily and abundantly raised in the irrigated valleys.

OSTRICH FARMING.

One of Arizona's unique industries is ostrich farming. The rearing of ostriches upon a large scale is rapidly becoming an important business in the Salt River Valley, in the neighborhood of Phoenix.

Ostriches were first introduced into the United States for breeding purposes in 1882. The idea at that time was that if the birds were made to survive in this country they would be available for exhibition purposes. A number were shipped from Cape Town, South Africa, to New York, but many of them died on the way. The surviving birds to the number of 21 were shipped by rail to California. These birds were the nucleus of a farm started at Anaheim, that State. During the next four years other parties ventured into the field of ostrich farming in southern California, 44 selected birds having been imported from South Africa. The first birds for breeding purposes in Arizona were brought to Phoenix from California in 1885 and consisted of 2 grown ostriches and 11 chicks. In course of transportation from California to Phoenix 10 of the chicks died and a short time later the female bird was killed. From the survivors—one male bird and a chick—97 full-grown ostriches were sold in 1897. Since that time the number has rapidly multiplied. The assessment rolls in Maricopa County this year show a total of 1,103 birds on various farms.

The largest ostrich ranch in America at the present time is located 10 miles west of the city of Phoenix. It contains more than 1,000 full-grown birds. The feathers from the birds on this ranch yield annually an income of $30,000. Each bird is plucked every eight months and (according to the report of the superintendent of the farm) averages $20 in plumes at each plucking.

The birds require little care. Their food is alfalfa. The alfalfa fields are inclosed with high wire fences. A section of each ostrich ranch is divided into corrals of about 1 acre in extent, in each of which is kept a single pair of ostriches for breeding purposes. The majority of the birds, however, run in flocks of several hundred.

Alfalfa seems in every way to meet the requirements of a healthful food for the birds. The average bird will eat about 4 pounds of green alfalfa per day, while an average steer will consume about 60 pounds of alfalfa per day. The common herd of ostriches is fed nothing except this green pasturage, and to aid in digestion quartz is added. It is broken up into sizes about as large as hickory nuts and scattered about the fields where the birds eat, and they eat these stones with their food in the same manner as a chicken swallows smaller gravel. In some cases the birds kept in the smaller pens for breeding purposes are fed small amounts of grain daily. It is a notable fact that the climate of the Salt River Valley seems to agree with the native requirements of the ostrich. Rarely, if ever, is an ostrich sick. The average life of one of these huge birds is seventy-five years, but the average time of usefulness is twenty to twenty-five years. After that the plumage begins to lose its brilliancy.

It is claimed that the plumage of the ostriches raised in Arizona is more beautiful than that of the birds of South Africa. The London critics claim that the difference is so marked as to make the feathers of the Arizona birds worth more than the ostrich feathers shipped from Africa.

The plucking of the ostrich is done by putting the bird in a V-shaped corral, which is just large enough to admit the bird and a plucker. A hood, shaped like a stocking, is placed over the head of the ostrich, and as soon as this is done the bird becomes perfectly docile. The workman then raises the wings and clips the feathers that are fully ripe. Great care is exercised at this time, as a premature cutting of the feathers damages the succeeding growth. Two months after the large feathers are cut off the quill has become dried up and is pulled out. By taking the feathers in this manner the bird suffers no pain. The ostrich is first plucked when 6 months old; at that time it is 6 feet high. The first crop of feathers is of little value, and succeeding crops are taken every eight months. The third plucking is the first full crop.

Ostriches first mate at 4 years of age, and remain paired for life. The nest is merely a hole scooped in the ground by the breastbone of the bird, and is about 1 foot in depth and 3 or 4 feet in diameter. Eggs are laid every other day until 12 or 14 are deposited, each of which weighs from 3 to 4 pounds. The eggs are turned daily in the nest and are incubated in forty-two days. The male takes the nest in the afternoon and is relieved in the morning by the female, who goes on duty for the balance of the day. The chicks, when hatched, are about the size of a domestic hen. The chicks grow about 1 foot in height per month until they attain their full height.

It is not easy to state the market value of an ostrich, for the reason that few of them are for sale. Ostrich growers estimate their chicks as worth $100 at 6 months old; $150 at 1 year old; $200 to $250 at 2 years old; $300 to $350 at 3 years old; and at 4 years of age, when they begin to breed, they are valued at $800 per pair and upward. It is claimed that there are pairs of ostriches in the Salt River Valley that $2,500 would not buy. The increase is estimated at 10 chicks from each pair annually.

So successful has ostrich farming been in this valley that some of the growers predict that within the next five years cattle will have given way entirely to ostriches on the alfalfa ranches of the valley.

PUBLIC HEALTH.

The health of the people has been good throughout the year; no epidemics have prevailed. This, however, is a normal condition in Arizona. No other section of the world, perhaps, has a more salubrious climate; few can offer a climate so nearly perfect. Endemic diseases do not exist, and zymotic diseases are extremely rare.

The death rate of the resident population is famously low. Not only that, but the climate is conducive to long life. According to the census of 1900, there were in Arizona 26 persons that were 100 years of age or over; 27 that were over 95; 59 that were over 90; 67 that were over 85; 283 that were over 80; 444 that were over 75. This was a better showing, proportionately, than was made by any other subdivision of the Union. Vital statistics would show an astonishingly low death rate were it not for the fact that invalids come here too late to recover their health.

Arizona has achieved a reputation abroad for having extremely hot summers, and the supposition in the Eastern States seems to be that in Arizona summer is almost unbearable. Exactly the contrary is the

case. It is true that thermometers uniformly register, through June, July, August, and the first half of September, a high degree of temperature. In the central and southern valleys the average temperature during the day in the months mentioned is about 106° F. in the shade. The highest temperature officially recorded at Phoenix was 116°. But there is a vast difference between the registered temperature and the sensible temperature. The percentage of humidity is so low that less discomfort is caused by a temperature of 116° than by 85° in the humid regions of the east. Sunstrokes are practically unknown. In the rare cases of prostration from heat the primary cause can always be traced to alcoholism or abnormal weakness. By an act of the twenty-second legislative assembly a Territorial board of health was established, consisting of the governor, ex officio president; the attorney-general, ex officio vice-president, and the superintendent of public health, secretary. The superintendent is appointed for two years. The board has power to establish quarantine, and, generally, to protect the public health. Physicians, before being admitted to practice, must pass a rigid examination before the Territorial board of medical examiners, the members of which are regular practitioners and in all respects fully qualified as physicians and surgeons. Druggists, in order to practice as prescription pharmacists, must pass a rigid examination before the Territorial board of pharmacy, the members of which are graduated pharmacists of recognized standing.

The following table shows the number of registered physicians and druggists in the Territory, by counties:

Physicians and druggists.

County.	Physicians.	Druggists.	County.	Physicians.	Druggists.
Apache	3	8	Pima	21	13
Cochise	41	21	Pinal	5	3
Coconino	9	11	Santa Cruz	8	6
Gila	14	3	Yavapai	31	18
Graham	20	19	Yuma	8	6
Maricopa	54	34			
Mohave	11	2	Total	233	144
Navajo	8	2			

NEWSPAPERS.

The newspapers of Arizona are a credit to the Territory. There doubtless are many people in the Eastern States who are quite sure they understand all about Arizona journalism, and their understanding is based on the information furnished by alleged humorists through some of the metropolitan papers. Arizona newspapers will not suffer in comparison with the country dailies and weeklies of the most populous States. Quite generally the publications issued in the Territory are noted for a commendable public spirit, for intelligent discussion of the questions of the day, for their conservative tone, and for the cleanliness and dignity of their columns.

There are 56 newspapers published in the Territory, of which 15 are dailies, 37 are published weekly, 1 semimonthly, 2 monthly, and 1 quarterly.

CUSTOMS SERVICE.

The rapid growth of commerce between the United States and Mexico is shown by the statement furnished me by the collector of customs at the border town of Nogales, the principal port of entry for the Territory. In addition to the custom-house at Nogales, subports of entry have been established at Douglas and Naco, two new and thriving towns on the Arizona-Sonora boundary line, and also at La Osa, Lochiel, and Yuma.

The total value of imports for the fiscal year was $13,050,436, a gain of $5,314,850 over the previous year.

The total value of domestic exports was $5,687,260, a gain of $5,427,848 over the previous year.

The total value of foreign exports was $184,859, a gain of $152,094 over the previous year.

INTERNAL-REVENUE SERVICE.

The collector of internal revenue for the Arizona-New Mexico district reports to me that there was a gain of $4,184.17 in the collections for the fiscal year over those of the previous year.

Statement of the collections for the last two fiscal years.

	1904.	1905.		1904.	1905.
Special-tax stamps	$31,959.98	$28,171.70	Fines, penalties, and interest	$1,012.07	$1,219.73
Tobacco stamps	999.00	1,518.54	Documentary stamps	5.00	4.00
Beer stamps	855.00	9,049.00			
Cigar and cigarette stamps	7,658.19	6,710.44	Total	42,489.24	46,673.41

STATEHOOD.

The defeat of the bill enabling New Mexico and Arizona to jointly form a State constitution, and providing for their ultimate admission to the Union as one State, was received by the people of the Territory with universal gratification. The small margin by which the defeat was effected in the Senate and the prompt avowal by the friends and advocates of that measure of their purpose to renew their efforts at the next ensuing session of Congress has, however, excited general alarm.

The proposed union is regarded by our people as a menace to the prosperity and progress of the Territory.

For more than forty years the people of the two communities have lived in separate Territories, and whatever of progress or achievement they have attained they have attained them under totally different conditions, both artificial and natural. The proposed union involves necessarily a change in those artificial conditions. Either the people of New Mexico will have to abandon her laws and customs and adopt those of Arizona or the people of Arizona will have to submit to those of New Mexico. As New Mexico has the larger population, it is not to be expected that the people of that Territory will voluntarily abandon their laws, their habits, and customs to adjust

themselves to those prevalent in Arizona. There is no reason that they should do so; if there were, then those laws would long ago have assimilated themselves to our own. It is not at all probable that New Mexicans would be persuaded that Arizona laws are to be preferred to their own, nor is it any more probable that Arizonians would have preference for those of New Mexico.

The question of which of the two systems is better adapted to the purposes of the government of the people of the proposed joint State is not necessarily involved; if it were, it would be useless to discuss it. If there are any lines upon which there would apt to be a division, the people of New Mexico, being the more numerous, would prevail. To suppose that it would be otherwise is to suppose that the New Mexicans have deliberately adopted a system of laws with which they are dissatisfied, and yet one which they persistently retain. It is true that a system of laws different from that prevalent in either of the two Territories might be adopted for the government of the two Territories when they shall have jointly become a State, but this is improbable, as it involves an abandonment by the people of both of the Territories of habits, customs, and laws to which they have long become accustomed, and with which it must be presumed they are satisfied. This presupposes a double sacrifice—the voluntary abandonment by each of those customs, habits, and laws which have been the means or the incidents of their separate development, and the adoption of a radically different set of rules to govern them in the future. And it is not a question whether it might not be well for both that a new system of rules should be adopted. That may be conceded, for it may be true of every Commonwealth in the Union, but if it is it must be viewed from that standpoint from which no true American will consent to view the matter. That standpoint is the one of the superior wisdom and benevolence of the proposed lawmaker to those to be governed by the proposed law. The American, or the citizen of any free and independent State, will not concede the superior wisdom and benevolence of the lawmaker unless he himself is that lawmaker. We have been taught to believe that any other lawmaker than the people themselves is necessarily a tyrant, and laws so made tyrannical edicts against which it is patriotic and heroic to rebel. Sophistry and philosophy may either teach a different rule, but Americans are not apt pupils in that school.

That all just governments must derive their powers from the consent of the governed is a fundamental dogma of all American institutions. It admits of neither dispute nor argument. In recognition of and in consonance with this doctrine Congress, in 1863, gave to the people of the Territory of Arizona the power to legislate upon all rightful subjects of legislation not inconsistent with the Constitution and laws of the United States. It is not necessary to discuss the origin of the power of Congress to grant this power of self-government, nor even to admit it, for it is fully, freely, and unquestionably acquiesced in; nor is it necessary by the application of the fundamental dogma that the power was not a subject of grant by Congress, as that power was always and always will be inherent in the people, independent of their inclination or ability to assent to or exercise. Later Congress imposed on the legislative power of the Territories further limitations, but this does not impute a want of the ability in the Territories of self-government, for these limitations

are identically those imposed by the constitutions of many of the States upon their own legislatures. They were found by practice and experience to be beneficial there, and under the peculiar system of the government of the two Territories the people of the Territories could not, as the people of a State can, prescribe these limitations. Congress, in which that power is temporarily and by necessity vested, did impose those limitations.

Under this plenary power of legislation, subject to limitations less restrictive than those probably imposed by any of the legislatures of any of the States, whether self-imposed or not, Arizona originated, or adopted, and put in operation her own system of laws, and for more than forty years has had its being, attained its present development, and established those principles of jurisprudence that are designed to foster and promote further progress and achievement, under those laws and their logical development. That better laws might be devised, or that those which we have might be better enforced may be conceded; but it can not be conceded that any other people or power than the people of Arizona has the right to devise or enforce them, except only, until we have attained the dignity of statehood, Congress itself.

It can not be justly asserted by those who revere American institutions that that complete local self-government which is naturally vested in the people of the States should be denied to the people of the Territories because of a lack of the intelligence of the people of those Territories, their want of moral development, or their incapacity to understand or appreciate the principles of self-government. That denial must be justified on other grounds, if at all. That a community is too small numerically, relative to the extent of the territory occupied, and does not possess the wealth necessary to assume the burden of a State government may be admitted to be a sufficient reason for the establishment and maintenance of the temporary Territorial form of government prevalent in the United States. The reason is not inherent in the people themselves, but in the conditions incident to their place of residence. But while, for this reason, they may be denied self-government as complete as that which the people of a State enjoy, they are not withdrawn from the principle of the American doctrine that the just powers of government are derived from the consent of the governed.

The bill for the joint statehood of New Mexico and Arizona, which passed the lower House of Congress at the last session and which was so narrowly defeated in the Senate, distinctly violated this principle. While professing to be merely an act to enable the people of the two Territories to effect jointure, and, being joined, to frame and adopt a constitution and thereafter be admitted as a State of the Union, the bill, if it had become a law, instantly effected the jointure by its own operations without the consent of the people of either Territory. The bill provided for a constitutional convention of delegates, elected from the two Territories, joined for that purpose. The separate and distinct entity of the peoples of the two Territories was wholly ignored, and only the united people of both was considered. The jointure was at once effected. The apportionment of a certain number of delegates to Arizona and a certain number to New Mexico was not based upon any notion of two separate and distinct peoples, nor as a recog-

nition of their independence of each other, but as a mere convenient method of apportionment. Upon the assemblage of the convention so constituted every such distinction would disappear. The delegate from a locality in Arizona would have no other or further rights, could exercise no other functions, and would be entitled to no other consideration, nor exercise any other influence as a member of that body than could any delegate from any locality in New Mexico; nor could the aggregate number of delegates from that extent of country within the boundaries of Arizona have or exercise any rights, privileges, or powers other than a like number from the Territory of New Mexico. The distinction in theory and in practice, it is obvious, would entirely disappear.

The powers, rights, and privileges of the aggregate number of delegates from Arizona were not to be equal to the powers, rights, and privileges of the aggregate number of delegates from New Mexico, because the number apportioned to New Mexico greatly exceeded the number apportioned to Arizona; and in this is an instance of the flagrant violation of the American principle, that the just powers of government are derived from the consent of the governed. It would thus be made possible that the delegates from New Mexico, in a convention thus constituted, could form and adopt a constitution repugnant in every particular to the people of Arizona, subversive of their interests, impeding their progress, offending their pride, and humiliating them to the last degree against the will and protest of every delegate from Arizona.

It is not a sufficient argument for the proposed law to say that it is not probable that the New Mexicans would do this. They do now have a different system of laws, one we conceive to be not adapted to our genius, and which is of their own choosing. What would prevent their injecting it into the proposed constitution? What reason can we give for their not doing it? But it is submitted that the fact that the proposed law makes this possible is sufficient to condemn it as unjust, unwise, and peculiarly un-American.

Again, it is provided by the proposed law that when the constitution shall have been framed and adopted by the convention it shall be submitted to the people, not of Arizona, nor of New Mexico, but to the people of the two Territories joined for that purpose, for ratification or rejection. Thus it will be seen that the jointure will have been effected by mere force of the bill and without the consent of the people being either asked or given. By this process a constitution may be framed by the convention against the protest of every Arizona delegate, and may be ratified and become the fundamental law governing Arizonians, notwithstanding the negative and dissenting vote of every elector in Arizona.

There is no doubt that an overwhelming vote of the people of Arizona would be recorded against any constitution which involved the jointure of the two Territories as one State. Yet, notwithstanding that, we would be by the preponderant vote of the New Mexicans subjected irrevocably to a fundamental law against which we in vain and uselessly protested.

Again, the proposed law provides for the election of State officers at the same election as that at which the question of the ratification or rejection of the proposed constitution is submitted, proceeding upon the theory of an already effected union of the two Territories.

This provision, we are frankly told, was made to insure the adoption of the constitution by exciting partisan strife for office.

So completely would the people of Arizona be bound by the domination, influence, and numerical preponderance of New Mexico that, even if they should refuse to elect or to send delegates to the constitutional convention and should refuse to open the polls for votes at the election called to ratify or reject the proposed constitution, they would nevertheless, against their will, become subject to a State government and a State constitution to which they in no wise gave their consent. If it should be said that the people of Arizona would not have any right to object if she took no part in the State-making process—that their absence from the polls conclusively implied their assent—then we are forced to the position that there is no alternative for us. If we should not go to the polls, we are presumed to assent; if we do go to the polls and are overwhelmingly outvoted by the New Mexicans, we are bound directly against our consent.

It may be said by some that a majority of Arizonians would favor joint statehood and a constitution involving that form of government; or it may be said that possibly a majority of the people of New Mexico and a majority of the people of Arizona are opposed to joint statehood. No fair-minded Arizonian would predict that any constitution involving jointure with New Mexico could receive the majority of the votes cast at an election in Arizona. The most conservative Arizonian will say at once that there would be an overwhelming majority against such a constitution.

The question whether the New Mexicans, with their numerical preponderance in the convention and at the polls, would accede to our views, or whether we might not agree instantly upon a new policy for the new State, is an assumption that does not warrant the closing of the door against the people of Arizona; no one can safely predict the action of the people of New Mexico. The principle itself proposed in the joint statehood legislation is wrong and subversive of the rights of any people. If it were only a question of agreement, then it should be submitted to the people of the two Territories separately. The jointure ought to be effected only after the people agree upon it.

If it were proposed to call a convention of delegates elected by the people of New York and by the people of Massachusetts, the number to be in the proportion of the respective population of the two States, each of the delegates to have one vote in the convention, and if that convention were charged with the framing of a constitution for the government of the people of the two States, and if the question of the ratification of that constitution were to be determined by a majority of all the votes cast in both States at an election called for that purpose, the matter would present itself very forcibly to the people of those two States, and there could be no question that the proposition would be denounced as violating every principle of right and justice and that particularly fundamental one that the just powers of government are derived from the consent of the governed.

Of course, it would be objected to any such proposition that the Constitution itself inhibits the junction of two or more States without the consent of the legislatures of the States concerned, as well as of the Congress. But it must be admitted that it is not wise or just to join two States as one without the consent of both separately given,

independently of the question whether the Constitution forbids it. The justice or injustice, the wisdom or folly, of such a procedure is not dependent upon the expressions of constitutional provisions. It was because it was unjust to the people of any State to compel them to be subjected to a system of laws to which they did not assent that this provision was placed in the Constitution. By inserting it there was no new standard of justice raised; and the injustice of the proposition to join the two separate and distinct peoples, and thereby subject either or both to a government which is repugnant to them or either of them, is absolutely independent of the constitutional provision.

The answer to the proposition to effect the junction of New York and Massachusetts in the manner proposed for the junction of New Mexico and Arizona—that it would be unconstitutional—would, in legal contemplation, be conclusive. That it would be unconstitutional must be admitted. But the answer simply reverts us to the inquiry as to why the constitutional inhibition was inserted; and the answer to that is that it would be unjust to compel such a junction without the assent of the people concerned. In short, it is not unjust because the Constitution inhibits it, but the Constitution inhibits it because it is confessedly unjust. And in proportion as we lose sight of and ignore this distinction we are apt to depart from the correct theory and practice of just and wise government. It doubtless will be argued at once that the constitutional inhibition cited is not applicable to the Territories; that, in terms, it applies only to States. That it does or does not apply to the Territories by strict construction is not important. The broad doctrine that the just powers of government must be derived from the consent of the governed finds in this constitutional provision a specific application—that is, that the separate peoples of two States shall not be subjected to a government to which they do not separately consent. And that doctrine has no rational or just limitation by any refined distinction between a "State" and a "Territory." The "State" and the "Territory" may import different forms of government, but they are both distinctively and essentially American, with all that term implies.

That under American institutions and in accord with American notions of government every power of government resides primarily in the people will hardly be disputed; at any rate, it will not be here admitted to be a subject of argument. It was the people of the United States that ordained and established the Federal Constitution, and it was the people of the various States, separately and without interference by other States or by the General Government, that framed and adopted the fundamental laws of those States. That there may be a difference between a State and the people inhabiting it—that they may constitute different entities—is not a matter of consideration here. If there be a difference, and if they are different entities, the State in any event must be the creation of the people and existing only by their will. It can not be conceived that a State has any power or can exercise any function except the will of the people, in whom the ultimate power is vested. What a "State" is might be a very interesting subject of academic discussion, but we do not see its importance here. In the particular clause of the Federal Constitution to which I have referred—that inhibiting the junction of two

States—the word "State" in its singular or plural form is used six times. It is not probable that the framers of the Constitution intended it to have as many meanings, or that it should have more than one. That in any of its uses there the meaning of the word State should be taken to be a people or community inhabiting a defined extent of territory over which the laws enacted by that people have validity and force would be sufficiently definitive, at least for our purpose, seems obvious. That new States may be admitted into the Union presupposes the existence of the State prior to admission—that is, existence of a people inhabiting a defined extent of territory over which the laws enacted by that people have validity and force.

It is certain that Congress is not authorized to make or create a State. The State must have its existence, its beginnings, its creation, otherwise than by any act of Congress, and doubtless it is inherent in the people inhabiting the defined extent of territory. What does a Territory lack of being a State? There are States that are not States of this Union, or of any union. The Constitution recognizes this fact repeatedly, as where it guarantees to "any State in this Union" a republican form of government, etc. The term is not peculiar to republics or unions of republics. What is there in the situation of a people inhabiting an organized Territory that withdraws them from the application of the fundamental American doctrine that the just powers of government must be derived from the consent of the governed? Is it because Congress has full power to make all needful rules and regulations respecting the territory and other property of the United States, or that the power of Congress to govern the Territories is incident to the power to acquire new territory by conquest, purchase, cession, or otherwise?

But whatever the source of that power, so far at least as it relates to Arizona and New Mexico or the people of those Territories, it is purely temporary. As a mere expedient, possibly from necessity, and until the people of the Territory shall have attained numbers and wealth sufficient to take upon themselves an independent local government, the power to govern them is assumed and exercised by the Federal Government. But the power of such temporary government certainly did not include the power to create or compel the creation of a permanent government against the will of the people of the Territory. It certainly will not be denied that there is no right guaranteed to the people of the United States or to the people of any State of the Union by the Federal Constitution that is not by that same instrument guaranteed to the people of Arizona. In every right incident to American citizenship the citizen of Arizona is the equal to the citizen of any State of the Union. That he can not exercise some of the rights of American citizenship is a temporary deprivation due to temporary conditions. And it is submitted that in the aggregate as a people inhabiting a defined Territory, exercising therein the rights of self-government, the people of Arizona are as much the beneficiaries of that fundamental doctrine that the just powers of government are derived from the consent of the governed as are the people of any other extent of territory within the limits of the Union, whether in a State of the Union or not. Whatever power Congress has over that people, it never had and by the very genius of American institutions could not have, the right to exercise it in derogation of the rights of American citizens.

To regard the people of Arizona and the country they inhabit as a mere dependency of the Federal Government is not to be admitted. By the terms of the cession of the Territory to the United States the inhabitants became, without other act of theirs than mere continued residence there, citizens of the United States. It certainly will not be contended that those of the inhabitants of Arizona who migrated hither from other States lost any of the attributes of American citizenship. And these constitute the people of Arizona. The Indian seems to have no recognized political status, and is left out of consideration. The creation of a State, the formation of a constitution, and the enactment of laws thereunder for the government of its people are all acts of the people of that particular extent of territory which they inhabit. They can originate nowhere else, and whether that people, being American citizens, residing upon American soil, shall have attained to sufficient numbers and have sufficiently developed its resources to assume its ability to maintain a government or not, its right to establish a State is absolute; and if that government is republican in form its admission into the Union is a matter of right. There can be, it seems to me, no other logical conclusion. The power of the Federal Government to govern any people, whether of the States or of the Territories, is either expressed in the Constitution or is one inherent in all governments. If it is an inherent one it can not, notwithstanding its being extraconstitutional, be exercised in contravention of the will of the people or of the spirit of the Constitution. If it can be an expressed constitutional power it must be exercised with complete regard for the rights of American citizens.

I suggested for illustration the substitution of New York and Massachusetts for New Mexico and Arizona in the situation in which the proposed joint statehood bill, if it became a law, would place them. Every argument that can be urged with any view to justice for the junction of New Mexico and Arizona into one State can, with even more force, be urged for the junction of New York and Massachusetts. If homogeneity of population be a reason for uniting two peoples into one system of government, then that reason is stronger in the case of New York and Massachusetts than in the case of New Mexico and Arizona. If community of interest be a reason, the stronger reason again is for the junction of the two great Commonwealths on the Atlantic than in the case of the Southwestern Territories; and so with intimacy of association. If increased extent of territory, population, wealth, and resources is any reason for the jointure of New Mexico and Arizona, and that prospect be a persuasive appeal to the pride, patriotism, or vanity of the proposed greater Arizona, would not the same appeal for the greater New York be as equally effective with the people of New York and Massachusetts? If freedom and ease of communication and commerce between the component parts be an argument for making one State of the two Territories, even a greater freedom and ease of such communication and commerce between the two States would present a more forcible argument for their junction. If the line between New Mexico and Arizona, separating them one from the other into two distinct peoples, is but an imaginary one, insignificant of nothing but that it is a boundary line, and it is assumed that therefore it should be ignored, so, too, by the same process of reasoning the line that separates New York and Massachusetts should be wiped off the map and known no more. If

the necessary expenditure of public money for the maintenance of the proposed new State made of the two Territories would be less than the cost of the maintenance of two separate States, so, too, in probably greater degree would be the cost of maintenance of a State made of the junction of the two States be less than the cost of the maintenance of the separate States. If the use of a common language, or the tradition of a common or an assimilative ancestry, suggests the propriety of the jointure of two hitherto separate peoples into one State, then it is incomparably more proper that one State be made of New York and Massachusetts than of New Mexico and Arizona. And likewise whatever of just and valid objection that could be urged against the junction of New York and Massachusetts can with equal justice be urged against the enforced jointure of the two Territories against the will of the people of either.

That the junction of New York and Massachusetts into one State would involve the loss to the people of two representatives in the Senate, or of a vote to ratify or reject an amendment to the Federal Constitution; or of a vote for President in the event the electoral college should fail to elect, does not destroy or even lessen the analogy I attempt to show between the States and Territories in the respects in which we have considered them, nor tend to mar the illustration I intended to make. On the contrary, these very things serve to make the analogy more complete, and to illumine the attempted illustration.

To deprive the people of a State, either directly or indirectly, of its rightful representation in making the laws, or in choosing the executors of the laws, is directly contrary to that fundamental doctrine that the just powers of government must be derived from the consent of the governed. And it is no more unjust and no more indefensible to take away a right from a people without their consent, a right that they have theretofore exercised, than it is for the Federal Government, charged only with the temporary government of the Territories of New Mexico and Arizona, to by any law or act make it impossible for the people of those Territories ever to have and enjoy rights guaranteed to States by the Constitution. For every purpose for which Congress may legislate for Arizona or New Mexico, except for their temporary government, these Territories must be regarded as "States." Congress confessedly can make no law permanently affecting the people of either of these Territories concerning their local affairs. Any such law is instantly abrogated by the admission of the Territories into the Union.

It should be borne in mind that the Federal Government is under treaty obligations to admit the Mexicans who inhabited these Territories at the time of the cession into the Union. Congress certainly will not be less considerate of and just to those inhabitants of these Territories who were born citizens of the United States and have migrated from other States; it is for this reason, if for no other, that the power of Congress to govern these Territories is only temporary. For more than forty years citizens of other States have migrated to Arizona, attracted either by its promise of self-government, its wealth of undeveloped resources, or the salubrity of its climate. They have laboriously built up a Commonwealth, and whether it be great or contemptible, it has their allegiance, their loyalty, and their affection, and in it they have an abounding self-

pride. A more patriotic people, a people more intensely American, or more devoted to the great Union than are Arizonians, inhabits no State or Territory within its confines.

They ask most respectfully, but most earnestly, that no law shall be passed by Congress which shall make Arizona a component part of any State without the consent of her people. Do not force a union upon her.

Upon the floor of the Senate, a most distinguished presence, while the bill for joint statehood was under discussion, an advocate of the passage of the bill gave utterance to the words of Lincoln that this is "a government of the people, by the people, and for the people." If that bill had become a law, or if a like one, which is threatened and feared, should be come a law, the condition established would render the apothegm incomplete. Such a law would make it possible, and I am constrained to say that I believe, inevitable, that if a constitution were adopted and a State government established thereunder, it would be against the vote of an overwhelming majority of the voters of Arizona. In its application then the phrase should stand: "This is a government of the people of Arizona, by the people of New Mexico, for the people of Arizona."

Arizona yields ready assent to temporary government by the United States that is provided for by the treaty, possibly by the Constitution, and in any event it is a necessary temporary expedient. But it is submitted that there is just cause for complaint if Congress should pass a law that permanently subjects Arizona to a government to which she does not assent.

It is urged that the nation is interested in the question of the admission of Arizona to statehood. That is obvious. But a just nation—the American nation—can not have an interest to be subserved in subjecting Arizona to a State government against her consent; to compel her to accept a constitution repugnant to her people and to be governed by laws ill, or not at all, adapted to her genius or conditions. The nation could not have an interest that would justify that wrong. Many of those who advocated the passage of this bill upon the floors of Congress deprecated the follies and mistakes that mar the history of the admission of many of the States. Those follies and mistakes grew out of a departure from rules indicated by strict right and justice. There are some suggestive similarities in the history of this bill and the omnibus bill of 1850. The reputations of some very great men went upon the shoals then.

The solution of the situation is easy, in consonance with every principle of justice. If Arizona possesses the qualities necessary to the establishment and maintenance of a State government, she should be admitted. If she does not, then she should not be admitted, and her right should be held in abeyance until she does acquire them; and the question ought not to be determined by the question of the admission or exclusion of the other Territories, or any of them, any more than in 1850 the admission of California should have been made to depend upon the organization of the Territories of New Mexico and Utah. If, again, it seems to Congress that the welfare of the nation would be better promoted by the jointure of New Mexico and Arizona and the creation of one State out of the two Territories, the simplest and the only just plan is to provide for procuring the assent of the

two peoples, if they in fact do assent. If either dissents, no interest of the nation will be jeopardized.

Arizona would be inhabited by a strange people if they did not want statehood, and want it earnestly, and strive for it zealously. If they did not want it, then Arizona would not make a good State of the Union. But they want statehood for that Commonwealth which they have built up, in which their hopes are bound. They want it as their reward for their conquest of the desert, their searching of the mountains and disclosing the fabulous wealth of her mines. They want it for the protection and for the fostering of all her varied industries. As all their hopes, their ambition, and their pride are bound up in that State, they insist that they should be its designer and its builder.

The people of Arizona have had to contend and must yet contend against peculiar difficulties. To the denizen of the older States the conditions are anomalous. Climate and climatic conditions are so radically different from those found in almost every other part of the Union that different methods of warfare must be adopted in the attempted conquest of the desert.

Whatever of glory may be in the final conquest, whatever of happiness it may bring to her people, should by right belong to them. The notion of a "Greater Arizona," with the elimination of Arizona, does not appeal to her people. For years Arizona has asked to be admitted to the Union, and will continue to ask. And she does not believe that a just nation will exercise a power to punish her for her temerity in asking for her own.

Yours, respectfully,

JOSEPH H. KIBBEY,
Governor.

Hon. E. A. HITCHCOCK,
Secretary of the Interior, Washington, D. C.

LEGEND.

- Capital,(Phoenix)
- County Seats
- Cities, Towns, Settlements etc.
- County Boundaries
- Surveyor-General,and Land Offices
- Townships not subdivided
- Forest Reserves
- Indian Reserves
- Military Reserves
- Private Land Grants

West from Greenwich Meridian

UTAH

COLORADO

NEW MEXICO

WASHINGTON

KANE

SAN JUAN

MOHAVE

COCONINO

NAVAJO

APACHE

YAVAPAI

YUMA

LA PAZ

MARICOPA

GILA

GRAHAM

GREENLEE

PINAL

PIMA

COCHISE

SANTA CRUZ

RIVERSIDE

SAN BERNARDINO

SAN DIEGO

IMPERIAL

LOWER CALIFORNIA

NAVAJO INDIAN RESERVATION

HOPI (MOQUI) INDIAN RESERVE

WALAPAI INDIAN RESERVE

COLORADO RIVER INDIAN RES.

SAN CARLOS WHITE MOUNTAIN INDIAN RESERVE

SALT RIVER INDIAN RES.

GILA RIVER INDIAN RES.

PAPAGO INDIAN RES.

GILA RIVER INDIAN RES.

GILA & SALT RIVER MERIDIAN

Base Line

1st Standard Parallel S.

2nd Standard Parallel S.

3rd Standard Parallel S.

4th Standard Parallel S.

DEPARTMENT OF THE INTERIOR
GENERAL LAND OFFICE
WILLIAM A. RICHARDS, COMMISSIONER.

TERRITORY OF ARIZONA.

Compiled from the official Records of the General Land Office and other sources
under the direction of
FRANK BOND
Chief of Draft
1905

Scale

Compiled and Drawn by Daniel Hare

REPORT OF THE GOVERNOR OF HAWAII.

REPORT OF THE GOVERNOR OF THE TERRITORY OF HAWAII.

EXECUTIVE CHAMBER,
Honolulu, Hawaii, October 5, 1905.

SIR: I have the honor to submit herewith my annual report on Hawaiian affairs for 1905.

ECONOMIC CONDITIONS.

During the year important changes have occurred, some of which may mean that the year will stand out as a turning point in the progress of the Territory. It, however, can not be said to have been a year of great prosperity, but rather of recuperation. From the volume and value of exports, which are shown later in this report, it would appear to have been, under ordinary circumstances, a fairly prosperous year, yet the previous low price of sugar had, under existing conditions, brought losses to many of the sugar estates, burdening them with obligations, and the returns this year have been applied to the liquidation of foreign credits. Thus conditions have not responded in proportion to that which the figures would indicate.

PHYSICAL CONDITIONS.

Though the Territory of Hawaii is small, yet it contains natural phenomena and physical aspects that make it wonderful. Hawaii is nature's jewel box. Probably in no similar area in the world are there such contrasts of nature or such wide extremes to be found in close proximity. Snow-clad mountains within a day's ride from a warm seashore with its snow-white coral sand beach which arrests the sparkling waves of tropical seas. A volcano—nature's wonderful laboratory—which has been for centuries constantly at work manufacturing raw material, the disintegration of which supplies our rich and fertile soil. A land where the pine tree is found beside the palm. Broad fields, rugged mountains, high cliffs surrounded by a sea the colors of which, with those of the skies and landscape, are so vivid and brilliant that when accurately reproduced are incredulously received. Even the fish in the seas around the islands are found in all colors, shapes, and varieties. Here, too, at the meeting point between the Occident and the Orient, are found in our population representatives of the different tribes or races of mankind. It is no unusual sight to behold in our streets a nurse, with a cap and apron, trundling a wicker, rubber-tired baby carriage, with its fair-haired,

blue-eyed occupant, while near by is a Japanese woman in her kimona and obi and wearing wooden clogs, with her doll-like baby on her back. And one may watch the Chinaman with his water buffalo plowing a rice field, lolling comfortably in the latest model of an automobile.

Nature has been so lavish with her gifts that almost every species of domestic animal has found subsistence easy and run wild. In the forests on the upper slopes of Mauna Loa are still to be seen wild cattle, the descendants of those left by Vancouver at the beginning of the last century. The wild birds of our forests still to be found show contrasts in evolution that are marvelous. In Hawaii the wide and varied processes of nature are confined to a small area, thus more readily observed and the field more remarkable for study or research in any avenue of human interest.

COUNTY GOVERNMENT.

The greatest change of the year has come about through the passing by the last legislature of a county act, by which there has been a subdivision of the various functions of government through the establishment of the county system. No community had ever faced such a problem, which was the exact reversal of the ordinary experience in such matters. Here an old, established, and complete form of government, without municipalities or counties, had been changed into a Territory, the duties of whose officers were defined, and which was possessed of all kinds of property and had created a debt, much of which has been used in the upbuilding of those departments which ordinarily fall to the township or county.

There being grave question as to the validity of the act, as well as some of its provisions, the attorney-general prepared an agreed statement of the facts, on which a test case was brought, and certain private citizens retained counsel to assist in securing an adjudication of the questions. The act was held constitutional in all its main features, and much of the uncertainty in regard thereto was removed. By the act the Territory is divided into five counties. The powers granted were not so wide or complete as those which usually exist on the mainland. The measure in a way was experimental, and did not carry with it the power of taxation, so that for the present the situation is unique in that work undertaken by the counties is met by allotment of what has heretofore been Territorial income. It was the desire of the legislature to at the same time as nearly as possible relieve the Territory of proportionate expenditures. While the act has been sustained, it will be permanent only in proportion as it suits the wishes of the people.

CHANGES IN THE ORGANIC ACT.

Among the notable incidents of the year affecting the Territory of Hawaii was the amendment, approved March 3, 1905, amending sections 56, 80, and 86 of the organic act. This amendment was introduced primarily to do away with ambiguities in connection with the establishment of a county form of government in the Territory. Section 56 provided that county officials could be either appointed

or elected, and section 80 adjusted the appointing power to conform thereto. All previous attempts arising in Hawaii itself to secure amendments or alterations of the organic act had met with failure, and the people of the Territory had settled down to accept it much in the same manner as the Constitution of the United States is accepted by all, when suddenly, without any public expression of a desire on the part of the people of the Territory for any other change, an additional section was added to the bill, providing for the amendment of section 86, which ceases to recognize our system of courts as distinct and separate from other Territories, and provided in effect that writs of error and appeals may be taken from the Territorial supreme court to the United States Supreme Court in all cases where the amount involved, exclusive of costs, exceeds $5,000.

The first intimation of the action taken by Congress was received by cable, and stated that this amendment, which fundamentally affected our system of courts, had already been passed. The amendment, while of little moment in itself, has created in the minds of some a feeling of anxiety and distrust—a feeling of uncertainty as to what is to be expected next. Had any knowledge of such proposed action reached here a determined effort would undoubtedly have been inaugurated to checkmate it, as it is believed that because of Hawaii's isolation the cost of an appeal to Washington is so great that it gives an undue advantage to the wealthy litigant as against those who can ill afford the expense. Evidently those urging the adoption of the measure were unwilling to come out in the open. It would appear to be unfortunate if our system of government is such that amendments not germane to the original act can be introduced in joint committee at the eleventh hour and rushed through Congress.

NATURALIZATION.

By a reference to the article on the judiciary department by Chief Justice Frear it will be noted that some question has been raised as to the jurisdiction of our Territorial circuit courts in naturalization matters. The "organic act" of Hawaii, by striking out all laws relating to Hawaiian naturalization, repealed all power in the various courts of Hawaii to naturalize aliens, power to naturalize being only such as is given by express statute and not inherent in any court, and thus left the question of naturalization to the United States Revised Statutes, section 2165 of which provided that an alien may be admitted to become a citizen of the United States by qualifying as therein provided before a circuit or district court of the United States or a district or supreme court of the Territories, or a court of record having a clerk and seal in any State.

Congress, in creating the Territory of Hawaii, recognized her isolated geographical position and provided a system of courts more nearly akin to that of the various States. A single district court of the United States was provided with the jurisdiction of both a district and circuit court of the United States, and with the right of appeal to the United States circuit court of appeals. No provision was made for the lower ordinary district courts of the United States as exists in the various Territories. On the other hand, "circuit courts" were provided for each of the main islands, clothed with the

same power and jurisdiction as the ordinary trial courts of the various States and corresponding in jurisdiction with the "district" courts in the Territories as they existed at the time of the adoption of section 2165, before referred to.

Appeal from our Territorial circuit court lies to the supreme court of the Territory, as did appeal from Territorial district courts to Territorial supreme courts. But owing to these changes and the different designations the question has arisen as to whether the circuit courts of the Territory are district courts within the meaning of the Federal statute. It was originally held by our various circuit judges that the circuit courts of Hawaii, having practically the jurisdiction of district courts in other Territories, the intent of the statute clearly designated them to take the place of district courts and naturalize aliens. This proved a great convenience to the people of the Territory, as both the supreme court of the Territory and the United States district court are located in Honolulu, a long distance for persons residing on the other islands to travel, and some 1,000 or more aliens, English, German, Portuguese, and other nationalities, have from time to time become naturalized by the circuit courts.

Matters proceeded in this manner unquestioned until, upon the appointment of several of the new circuit court judges within the last two years, questions were raised by them, not only as to their power to naturalize aliens, but as to whether aliens who had been naturalized by the circuit courts were citizens of the United States, capable of serving on juries or exercising the voting franchise. In some of the circuit courts of the Territory rulings like these have almost prevented jury trials, as it so reduced the number of residents capable of serving as jurors. It has caused the dismissal of a number of indictments, it being held that such indictments were improperly brought, owing to the presence on the grand jury of members who had been thus naturalized. Questions concerning voting and elections are also involved.

The issue is shortly to be brought before the supreme court of the Territory, and if it should be held that the circuit courts are not entitled to naturalize aliens a large number of people who have already been naturalized by them, and who are not only scattered throughout the islands, but many of whom have gone to the mainland, would be without naturalization, all of whom applied for and were naturalized in good faith, and thus an exceedingly chaotic, unfortunate condition would follow. Congress has the power to remedy this by an amendment to our "organic act," allowing aliens to be naturalized by any court of record having common law jurisdiction, a clerk, and a seal, upon such aliens complying with the conditions and provisions of the United States statutes. And it would be well to insert a further clause, that any person who had been naturalized by our circuit courts in such manner since the adoption of the "organic act" should not for that reason be disqualified as a citizen of the United States.

FISHERIES CASES.

The extended and expensive litigation over the ancient and peculiar fishing rights was caused by sections 95 and 96 of the so-called "organic act," approved April 30, 1900, by which Congress endeav-

ored to do away with those methods regarding fisheries which existed from time immemorial among the natives, and which had become the law of the land in the Kingdom of Hawaii, legalized by its legislatures and recognized by the courts for over half a century, and in this manner make the sea waters free to all citizens of the United States. Thus all previous laws conferring exclusive fishing rights were repealed.

There evidently was a feeling in the minds of some members of Congress that possibly in some of the old grants vested rights may have accrued to the owners. Thus the law was passed subject to vested rights, but with a remarkable clause abolishing the vested rights in three years if not established in the courts of the Territory. This second section referred to provides a method of establishing claims in the courts of the Territory, allows service on the attorney-general, and directs that officer to conduct all such cases. If such fishing rights are established, the Territory is directed to proceed to condemn and to pay out of its revenues the lawful ascertained value. These rights have heretofore covered a considerable section of the coast lines and a large acreage of flats and shallow waters, as well as certain bays or inlets. They have varied from exclusive rights for all fish and sea food to only certain species of fish. Some were sanctioned by specific mention in the old royal patents or land grants. Others had been recognized from time immemorial as appertaining to the land.

During the first two years after annexation, claims continued to be presented and filed in the various circuit courts throughout the whole group of islands. Among these, the case of Damon *v.* Territory of Hawaii was selected as typical of that class of cases in which the grant contains specific mention of the fishing rights. In the lower courts judgment was given in favor of the Territory, and the supreme court of Territory decided that as these rights had been granted by legislative enactment they could also be repealed by Congress. Exceptions were taken, however, and the case appealed to the Supreme Court of the United States, where a decision was rendered reversing the previous decisions and practically deciding that in all such cases a vested right had accrued.

The attorney-general, after consultation with the local attorneys employed to prosecute the cases, concluded to examine each case and, as far as practicable, decide just which fell within the decision of the United States Supreme Court. This has been accomplished, and thus a majority of the cases disposed of. There is now on file with the Supreme Court of the United States at Washington the case of the Bishop Estate *v.* Territory of Hawaii, October, 1905, No. 144, involving the question, where the original grant does not contain a specific mention of fishing rights, the question being whether a right appertaining to the land passed by virtue of the grant itself without specific mention of it.

It is hoped that upon a decision of this case all questions of law will be settled. There will remain only the question of facts establishing the claims, then condemnation, thus ascertaining the lawful value of each claim. The whole question is one that has been forced upon the Territory by Congress, for there has never appeared to be any desire on the part of the people of the Territory to change from

the old customs of former times. The Territory is certainly without the means to pay the lawful ascertained value of these claims, and under the organic act it has not the power to create an indebtedness to meet these payments. Therefore, if the present Congress desires to continue the policy of its predecessors, making the sea waters around the Hawaiian Islands free to all, provision should be made under the Department of Justice for a representative of that Department to conduct condemnation proceedings, in order to insure the same being absolutely disinterested to avoid any accusations of inadequate efforts on the part of the Territorial officials or of biased juries. It certainly does not appear to be in accord with sound justice for the Territory to proceed and condemn these fishing rights until such time as there is some possibility of paying for the same.

CRIMINAL TRIALS.

The attorney-general reports that there have been 17 criminal terms of the circuit courts, at which 283 criminal cases have been disposed of, resulting in 234 convictions and 49 acquittals. These cases have included a large number of very important cases for the Territory. This work does not include the additional work of practically continuous attendance before the grand juries of the various circuits, and the presentation of evidence to those bodies, with the consequent necessity of preparing indictments for the above-mentioned cases, together with the disposal of various motions concerning the legality of such indictments, all of which has taxed the various members of that office to a considerable degree. Of the most important cases during the year were those against public officials. During the past year the supreme court has confirmed the convictions of Jonah Kumalae, a member of the house of representatives, and Enoch Johnson, an attorney at law, who were convicted, after a jury trial in the first circuit court, of connection with scandals concerning vouchers of the legislature of 1903.

The supreme court of the Territory of Hawaii has also confirmed the conviction and sentence of E. S. Boyd, formerly commissioner of public lands of the Territory, charged with embezzlement of public funds amounting to $30,000, and he is now serving his sentence. Two of the many homicide cases tried in the Territory during the past year perhaps deserve passing notice. These are the case of the Territory *v.* E. M. Jones and the case of the Territory *v.* P. H. Naone. Both were accused of the crime of wife murder and both introduced as a defense the plea of insanity. The trial of the first case is remarkable in that it is probably the longest and most expensive criminal trial which has ever taken place in the Territory, beginning on the 16th day of January, 1905, and ending on March 9, comprising forty-three days of actual trial, the last ten of which included not only regular sessions of the court, but also night sessions lasting until 11 o'clock. During this case, including the medical experts, 71 witnesses were examined, 33 on behalf of the prosecution and 38 for the defense. Hypothetical questions of great length were asked by both the prosecution and defense, the longest covering 23 pages of typewritten matter. The trial ended with a verdict of manslaughter in the first degree, after a delibera-

tion of forty-eight hours by the jury. The cost of the trial to the taxpayers was some $6,300.

The case of P. H. Naone was begun on the 10th day of May, 1905, and lasted until the 2d of June, representing twenty-one actual trial days. This is a departure from our usual run of such matters in the Territory, and if we are to judge by the record of the length and expense of trials for homicide in many of the States of the Union, these two cases show that the Territory is surely progressing in this respect along "American lines."

EXTRADITION.

During the year, under instructions of the governor, the attorney-general's department prepared extradition papers in two cases. First, in the case of Uyeke Kamitaro (alias Uyeke Kamizo), a Japanese, who was indicted for murdering his wife on the island of Hawaii. The papers were duly forwarded to Washington, and Mr. Chester A. Doyle, commissioned by the Secretary of State, as agent, to present the same to the Japanese Government. Unfortunately, the man had been lost track of after arriving in Japan, and it was deemed impossible to effect his arrest by the Japanese Government. This was followed by the case of Henry Kapea, charged with embezzling a large sum of money from the Hawaiian Trust Company, and who had fled to Japan, but since then had proceeded around the world and was finally located in London. Extradition papers were forwarded to Washington, and Mr. Henry Vida was designated by the Federal Government as special agent for the purpose of making the arrest, and Kapea was extradited from London, and is now in Honolulu awaiting trial.

PROCLAMATION CONVEYING LAND TO THE FEDERAL GOVERNMENT.

As will be noted in the article on public health by the president of the board of health, Mr. L. E. Pinkham, during the year an act was passed by Congress to provide for the investigation of leprosy, with special reference to the care and treatment of lepers in Hawaii, and approved on March 3, 1905. It is provided by the terms of this act, when the Territorial government of Hawaii shall cede to the United States in perpetuity a suitable tract of land 1 mile square, more or less, in the leper reservation at Molokai, Hawaii, there shall be established thereon a hospital station and laboratory of the Public Health and Marine-Hospital Service of the United States for the study of the methods of transmission, cause, and treatment of leprosy.

In accordance with the foregoing, at the earnest solicitation of the governor and others, Surg. Gen. Walter Wyman, Chief of the United States Public Health and Marine-Hospital Service, was induced to visit the island for the purpose of making a selection of the site for the erection of the buildings provided for in the act. He arrived in Honolulu the early part of June, and in company with the Hon. W. P. Hepburn, member of Congress from Iowa, Dr. E. C. Cofer, of the Federal quarantine service, and certain Territorial officials, visited the settlement at Molokai as the guests of the Inter-Island Steam Navigation Company, which had put a steamer at the disposal of the

party. After a thorough inspection of the entire area, it was concluded, from the physical and local conditions, that the purposes of the act could best be fulfilled by the selection of various areas of land in different localities for separate purposes. First, the natural slope of high land at the eastern extremity of the settlement adapted itself in every way to a hospital service. Beyond this, protected by a promontory, was a site suitable for a landing. Between the two, and up the ravine, was an unfailing spring of pure water, which it was thought was sufficently elevated to furnish water to the buildings by gravity.

Accordingly the Territorial surveyors were put to work, and it was found that the available area for hospital buildings included 114 acres, the landing site 8.9 acres, the spring 4.5 acres; but this gave a total of only 127.4 acres, considerably less than 1 mile square, and the Federal officials, although admitting that the areas chosen were in every way superior for executing the purposes of the act, yet expressed doubt as to the final construction of the wording "one mile square, more or less," so that 502.6 acres additional area, running from the seashore nearly to the road from Kalaupapa Landing, back of and including the Kauhako Crater, now used for pasturing stock, was added, completing 1 mile square of land—about one-sixth of the whole reservation. On the 28th of June, in accordance with powers granted in the organic act, the following proclamation was signed, thus complying in every detail with the requirements of the act and relieving the Territory of the responsibility as to its further execution:

A PROCLAMATION.

Whereas, it is provided by section 91 of an act to provide a government for the Territory of Hawaii, passed by the Fifty-sixth Congress of the United States of America on the 27th day of April, A. D. 1900, and approved on the 30th day of April, A. D. 1900, "That the public property ceded and transferred to the United States by the Republic of Hawaii, under the joint resolution of annexation, approved July 7, 1898, shall be and remain in the possession, use and control of the Territory of Hawaii, and shall be maintained, managed, and cared for by it, at its own expense, until otherwise provided for by Congress, or taken for the uses and purposes of the United States by direction of the President or the governor of Hawaii," and

Whereas it was enacted by the Senate and House of Representatives of the United States of America in Congress assembled, by an act thereof duly approved by the President of the United States of America on the 3d day of March, A. D. 1905, "That, when the Territorial government of Hawaii shall cede to the United States in perpetuity a suitable tract of land one mile square, more or less, on the Leper Reservation at Molokai, Hawaii, there shall be established thereon a hospital station and laboratory of the Public Health and Marine Hospital Service of the United States, for the study of the methods of transmission, cause, and treatment of leprosy," and.

Whereas in pursuance of the foregoing act of the Congress of the United States of America a tract of land situated on the leper reservation at Molokai, Hawaii, in area 1 mile square, more or less, has been found suitable for the purpose in said last-named act contemplated and set forth:

Now, therefore, I, George R. Carter, governor of the Territory of Hawaii, by virtue of the authority in me vested by law, do hereby declare and proclaim that the following-described pieces of land, (the Territory reserving the ownership of, and right to remove such buildings as may be on the date hereof upon the granted premises), be and the same are hereby taken for the uses and purposes of the United States, saving and reserving therefrom a right of way 40 feet in width along and over the line of the present road or trail over the granted premises, for the purposes of a road, for the exclusive and joint

use of the board of health of the Territory of Hawaii and its successors, and the United States authorities having the charge and control of said hospital station and laboratory; and granting to the United States a like exclusive right of way upon and over that part or portion of the public lands of the Territory of Hawaii lying between the parcels of land hereby separately granted, now used as a public road or trail, such rights of way as are hereby granted and reserved being indicated upon certain maps of the United States leprosy station sites, dated June, 1905, and traced from Government survey registered maps Nos. 2309 and 1728.

A.—DESCRIPTION OF LANDING SITE, SITUATED ON THE EAST SIDE OF WAIKOLU STREAM, WAIKOLU, MOLOKAI, TERRITORY OF HAWAII, SELECTED BY SURGEON-GENERAL WYMAN, P. H. M. H. S., AS PORTION OF FEDERAL LEPROSARIUM.

Beginning at an iron bolt on rocky point overlooking sea and known as Hawaiian Government Survey Trig. Station "Leinaopapio," the true azimuth and distance to Hawaiian Government Survey Trig. Station "Kaupikiawa" being 132° 12′ 39″ 11,164.5 feet, and to Hawaiian Government Survey Trig. Station "Mokapu" being 202° 32′ 9″ 4,255.1 feet, and the azimuth to Kalawao Protestant Church spire being 105° 29′ and to the cross on Kalawao Catholic Church being 103° 43′, as shown on Government survey registered map No. 2309, and running by true azimuths:

(1) Up center of ridge to rocky ledge in same, the direct azimuth and distance being 330° 30′ 1,418 feet; (2) 79° 43′ 1,174 feet down side of ridge to a + on large solid stone on the east bank of Waikolu stream; (3) thence along the east bank of Waikolu stream to high-water mark on beach, the direct azimuth and distance being 183° 05′ 448 feet; (4) thence along beach along high-water mark, the direct azimuth and distance being 240° 00′ 555 feet; (5) then along the foot of bluff the direct azimuth and distance being 161° 53′ 834 feet; (6) 289° 18′ 224 feet up ridge to the point of beginning. Area, 18.9 acres.

B.—DESCRIPTION OF SPRING SITE, SITUATED ON THE EAST SIDE OF WAIKOLU VALLEY, WAIKOLU, MOLOKAI, TERRITORY OF HAWAII, SELECTED BY SURGEON-GENERAL WYMAN, P. H. M. H. S., AS PORTION OF FEDERAL LEPROSARIUM.

Beginning at a + on stone in trail up the east side of Waikolu Valley, the coordinates from Hawaiian Government Survey Trig. Station "Leinaopapio" being south 2,478 feet and east 219 feet, as shown on Government survey registered map No. 2309, and running by true azimuths:

(1) 254° 33′ 385 feet up ridge; (2) 351° 00′ 750 feet along Territorial government water reserve; (3) 117° 53′ 466 feet down ridge to + on stone in trail; (4) thence along east side of trail, the direct azimuth and distance being 215° 40′ 90 feet. (5) 176° 53′ 227 feet; (6) 136° 00′ 168 feet to the point of beginning. Area, 4.5 acres.

C.—DESCRIPTION OF HOSPITAL SITE, KALAWAO, MOLOKAI, TERRITORY OF HAWAII, SELECTED BY SURG. GEN. WALTER WYMAN, P. H. M. H. S., AS PORTION OF FEDERAL LEPROSARIUM.

Beginning at a + on large rock in stone wall, on edge of bluff overlooking sea, the true azimuth and distance to Hawaiian Government Survey Trig. Station "Kaupikiawa" being °159 03′ 6,130.8 feet, and to Hawaiian Government Survey Trig. Station "Leinaopapio" being 286° 15′ 30″ 6,332.5 feet, as shown on Government survey registered map No. 2309, and running by true azimuths:

(1) Along edge of bluff overlooking sea to corner of fence on same, a little west of Waialeia Gulch, the direct azimuth and distance being 333° 13′, 1,893 feet; (2) 65° 00′, 185.5 feet to corner of stone wall; (3) 27° 00′, 285.5 feet along stone wall to + on solid rock; (4) 14° 25′, 585 feet up small hill to + on large rock on edge of bluff; (5) 22° 38′, 616 feet along edge of bluff to + on large rock, the true azimuths to Kalawao Protestant Church spire being 163° 24′ and to cross on Catholic Church being 164° 48′; (6) 31° 18′, 1,013 feet along edge of bluff and down into a small gulch, and along center of same to angle in said gulch; (7) 99° 20′, 1,150 feet along center of small gulch to point in same, opposite the bottom of pali; thence following along the bottom of pali, the direct azimuths and distances being (8) 197° 40′, 810 feet; (9) 219° 53′, 750 feet; (10) 137° 18′, 1,000 feet; (11) 262° 15′, 516 feet to a + on solid rock at point of pali and end of stone wall, the true azimuth and distance to "Leinaopapio" △ being 270° 44′, 7,015.9 feet to "Kaupikiawa" △ being 170° 23′, 7,515.3 feet, and the azimuth to Kalawao Protestant Church spire being

184° 12′ and to Kalawao Catholic Church cross being 190° 41′ 30″; (12) thence along stone wall along Baldwin Home, the direct azimuth and distance being 219° 10′, 669 feet; (13) 146° 00′, 425 feet along stone wall along Baldwin Home; (14) 219° 00′, 1,003 feet along stone wall along Baldwin Home; (15) 306° 20′, 65 feet along stone wall along Baldwin Home; (16) 219° 10′, 94.5 feet along stone wall along Baldwin Home to the point of beginning. Area, 114 acres.

D.—DESCRIPTION OF RESERVATION SITE, SITUATED IN KALAWAO AND MAKANALUA, MOLOKAI, TERRITORY OF HAWAII, SELECTED BY SURG. GEN. WALTER WYMAN, P. H. M. H. S., AS PORTION OF FEDERAL LEPROSARIUM.

Beginning at Hawaiian Government Survey Trig. Station "Kauhako," on the southwest rim of Kauhako Crater, near graves, the true azimuth and distance to Hawaiian Government Survey Trig. Station "Kalawao" being 175° 45′ 8,088.9 feet; to Hawaiian Government Survey Trig. Station "Leinaopapio" being 291° 15′ 9″ 14,461.6 feet, as shown on Government survey registered map No. 1728, and running by true azimuths:

(1) 137° 21′ 1,692 feet; (2) 227° 21′ 6,942 feet high-water mark at seacoast; (3) thence along seacoast along high-water mark, the direct azimuth and distance being 336° 10′ 3,762 feet; (4) 47° 21′ 350 feet to Hawaiian Government Survey Trig. Station "Kaupikiawa," the true azimuth and distance to "Leinaopapio" △ being 312° 12′ 7″ 11,164.5 feet; (5) 47° 21′ 5,378 feet to an iron bolt on the north side of main government road; (6) 137° 21′ 1,869 feet to the point of beginning. Area, 502.6 acres.

In testimony whereof I have hereunto subscribed my name and caused the seal of the Territory of Hawaii to be hereto affixed.

Done at the capitol, in Honolulu, this 28th day of June, A. D. 1905.

By the governor:

[SEAL.]

G. R. CARTER, *Governor.*
A. L. C. ATKINSON,
Secretary of the Territory.

FIRE CLAIMS.

The last annual report of the governor showed that there were eleven "fire claims" bonds unsold, and that there was more than sufficient cash on hand to meet the outstanding awards. During the year these eleven bonds have been canceled and returned to the Secretary of the Interior. Thus out of the total issue of $326,000 of "fire claims" bonds authorized by the act of Congress approved January 26, 1903, but $315,000 have been issued. These bonds were dated May 1, 1903, to draw 4 per cent interest; are redeemable any time after five years, and are payable in fifteen years. The cash on hand last year amountd to $14,182.96, which was $734.13 in excess of the amount necessary to wipe out all the claims. During the year, through the settlement of various lawsuits and other causes, awards have been presented and paid amounting to $7,902.18. The following is a complete statement to June 30, 1905:

1903:		
Accrued interest appropriated by the legislature, session of 1901		$140,000.00
Transfer from "current cash" to make up amount needed for 10 per cent payment		7,317.30
Sales of bonds to June 30, 1903		162,000.00
Total receipts		309,317.30
Warrants issued	$473,173.00	
Warrants paid to June 30, 1903	304,584.57	304,584.57
Warrants unpaid June 30, 1903	168,588.43	
Cash on hand June 30, 1903		4,732.73

1904:		
Accrued interest appropriated by the legislature, session of 1903		$11,589.83
Sale of bonds to June 30, 1904		153,000.00
Total receipts		169,322.56
Warrants unpaid July 1, 1903	$168,588.43	
Warrants paid to June 30, 1904	155,139.60	155,139.60
Warrants unpaid June 30, 1904	13,448.83	
Cash on hand June 30, 1904		14,182.96
1905:		
Warrants unpaid July 1, 1904	$13,448.83	
Warrants paid to June 30, 1905	7,902.18	7,902.18
Warrants unpaid to June 30, 1905	5,546.65	
Cash on hand June 30, 1905		6,280.78

CHINESE FUND.

As the annual reports of the governor of this Territory have previously shown, this Chinese fund. after annexation, was left without any provision of law regarding it. It originally grew up under the Republic of Hawaii, when a special deposit in the treasury was required of each Chinese immigrant toward the payment of his return passage at the expiration of a given number of years which he was allowed to remain in these islands. The first few years after annexation the former secretary of immigration voluntarily continued his supervision of the fund, dispersing the money to those entitled and desiring to return to China. But being without proper checks or responsibility the fund became the special victim of various embezzlements, until finally an act was passed and approved on April 28, 1903, which provided for the care, custody, control, and payment of $155,546.70, the balance then remaining on hand.

In the governor's annual report of last year there appears to be an error as to the figures, and following is a corrected statement for the three years, which shows a cash balance on hand of $3,690.80, and it remains to be seen whether this is sufficient to meet all the obligations:

Amount appropriated by act 71, regular session, 1903	$155,546.70
Amount paid to June 30, 1903	89,986.30
Balance on hand June 30, 1903	65,560.40
Amount paid to June 30, 1904	56,170.75
Balance of account June 30, 1904	9,389.65
Amount paid to June 30, 1905	5,698.85
Balance of account June 30, 1905	3,690.80

Many of the claimants prior to annexation had either died or left the country, thereby forfeiting the right to return passage. There are many now who can not be found, and thus it is impossible to determine the exact amount that will eventually be drawn.

FINANCES.

The heroic work done in the special session of 1904 and the great reduction made in expenditures is now beginning to be appreciated. The fiscal year ended June 30, 1905, shows a balance on the right

side of the books, and for the second time since annexation the expenditures of the Territory have been kept within the income.

Another very important change is that the tendency that had been developed of overdrawing or exceeding appropriations made by the legislature has been checked. This is due to good judgment displayed by the legislature and better methods adopted by heads of departments.

The current indebtedness at the beginning of the year was $720,093.99. This was more than met by the taxes received during November, and for a considerable period thereafter it was not necessary to register warrants. The end of the year, however, still shows a current indebtedness or outstanding warrants of $636,039.28.

Thanks to the legislature of 1905, a readjustment of the laws covering the payment of taxes has been accomplished, so that the necessity for registering warrants will be reduced to a minimum. Considerable of the credit for this is due to the influence of Treasurer Campbell, which, however, he is too modest to mention in his excellent article on the finances of the Territory.

During the year the Territory has increased its bonded indebtedness by the issuance of $1,000,000 public improvement 4½ per cent bonds, series of 1904–5, thus making the total bonded indebtedness of the Territory $3,137,000, which does not exceed 2½ per cent of the taxable property of the Territory.

TERRITORIAL BONDS.

Under legislative power, provided by section 55 of the organic act, no debt of the Territory can be authorized except to pay the interest upon the existing indebtedness, to suppress insurrection, or to provide for the common defense, except that in addition to any indebtedness created for such purposes the legislature may authorize loans by the Territory for the erection of penal, charitable, and educational institutions, and for public buildings, wharves, roads, harbors, and other public improvements. The total of such indebtedness is very properly restricted to 7 per cent of the assessed value of the taxable property, and for such loans no bond or other instrument of any such indebtedness can be issued unless made redeemable in not more than five years and payable in not more than fifteen years from the date of the issue thereof; nor shall any such bond or indebtedness be incurred until approved by the President of the United States.

Complying with these restrictions, the Territory has a bonded indebtedness of $3,137,000, and is about to create a further indebtedness of $750,000, thus making the total sum very nearly $4,000,000. In disposing of these bonds the Territory has been greatly assisted by the Secretary of the Treasury, who, upon your request, from the time of the first issue under the discretion allowed him by law, has accepted Hawaiian Territorial bonds in security for national deposits up to 90 per cent of their face value, and I desire to express, upon behalf of the Territory, its appreciation of Secretary Leslie M. Shaw's action in regard to the matter and the great assistance it has been to the Territory.

The limitation as to the length of time for which Territorial bonds can be issued has, however, hampered the Territory. One class of investors do not desire a bond of so short a term as fifteen years, and

there always will be considerable expense to the Territory in making provision to refund its indebtedness. On the other hand, another class of investors prefer a bond where a sinking fund is established for the redemption of a certain percentage every year. To meet such the more modern system is to issue a bond redeemable any time after one year and payable before twenty years, provided that 5 per cent of the issue be redeemed each year. It was probably with statehood in view that Congress adopted the general rule for all Territories that their evidence of indebtedness should be limited to short periods, thus providing for comparatively rapid liquidation upon any such change in the form of government. It must be admitted that so far as Hawaii is concerned statehood is in the dim future, and it would seem wise and would be greatly in the Territory's interest for Congress to modify the organic act so as to allow the Territory of Hawaii to make its bonds payable in not more than thirty years from the date of the issue thereof.

In connection with the bonded indebtedness of the Territory the question is constantly arising as to whether other States or municipalities can tax a Territory's bonds. An eminent attorney of New York City is of the opinion that our bonds are not so taxable. It would certainly be of very great assistance to the Territory and desirable if Congress in its amendment would clearly define the position of our securities in relation to this question.

PUBLIC HEALTH.

The public health for the year has been good, as is so clearly shown by Mr. Pinkham, president of the board of health, in his article on our health conditions.

EDUCATION.

No question will play so great a part in the future of these islands in molding our polyglot population into good citizens as a broad and liberal education. It has not been necessary to introduce this cardinal principle of the American people into Hawaii, for it had long since absorbed this much from the mainland, as the articles furnished by Professor Scott and Mr. Davis, superintendent of public instruction, show that the educational system of Hawaii has been developed to a very marked degree, and is believed to have been so modified and arranged as to meet the unique conditions found here and furnish in the end satisfactory results.

ARCHIVES.

From time to time, extending back to the days of the Republic, various legislatures have made small appropriations at the suggestion of public-spirited citizens for the preservation of various documents connected with the government which were known to be stored away in the closets and garrets of sundry public buildings, and under the direction of different officials these were spasmodically overhauled and preserved, with various plans suggested for their ultimate preservation.

From records it appears that Prof. W. D. Alexander, June 13, 1893, first called public attention to the necessity for some action, and reported to the then minister of foreign affairs the deplorable condition in which he found the records and available historical material connected with the Government. Among them were original papers of the early Hawaiian chiefs, letters of David Malo, the distinguished Hawaiian historian, correspondence relating to the diplomatic complications with France and England, documents concerning the recognition of the Kingdom of Hawaii by the United States, England, and France, and other papers relating to our treaties with foreign powers, the treaties themselves, besides original papers relating to the Government, including many hundred manuscripts written by the Hon. R. C. Wyllie, who for a period of more than twenty-one years was minister of foreign affairs of the Kingdom.

Shortly after annexation, the Chief of the United States Bureau of Archives came to Hawaii to look up these documents with a view to having them transferred to Washington, but finally consented to leave them in the Territory, on assurance that every effort would be made to secure a fireproof hall for their preservation, particularly as it was claimed that their relations to land titles was too important to have them leave the Territory.

By an act approved July 11, 1903, the legislature of that year made appropriation under the loan fund for a $75,000 fireproof building for the purpose of preserving these documents, yet it was evident that until this work was put beyond the effect of changing administrations or officials no plan, however comprehensive, could be permanent. Therefore, early in the session of 1905, an act was introduced providing for a board of archives commissioners, which met the immediate approval of that session, passed early, and was approved April 3, 1905.

In accordance with the act, in addition to Secretary of the Territory Atkinson, Prof. W. D. Alexander and Mr. A. F. Judd were appointed members of the board. Professor Alexander is the author of Alexander's History of the Hawaiian People. He is an eminent scholar, exceptionally qualified for this work. The first action of the board was the appointment of Mr. R. C. Lydecker as secretary of the board, and he entered on his duties May 10, 1905.

The commission at once concluded that the first work should consist in the making of an inventory of the contents of the trunks and packages and in securing a general working knowledge of the documents, preparatory to their classification and indexing, and this work has been progressing rapidly.

Meanwhile, as the appropriation for a building had not yet expired, plans were finally approved and a contract let before July 1, 1905, for a fireproof building, to be completed in December next, at a total cost of $36,978.34. This building is to stand in the capitol grounds, east of the capitol itself, and facing the road which leads to the Likelike street gate. It will be of brick, covered by cement, one story in height, classic in design, and will consist of two sections—vaults and offices. The vault, which will be large and commodious, will be fitted with steel cases, in which the archives will be stored. The front section of the building will be divided into three rooms—a kind of lobby, across the rear of which will run

a counter, behind which the custodian will have his desk and office; on the right hand a private office and board room, and on the left a room for the use of persons examining the archives and making reference to them.

The commission proposes, when the documents are properly arranged, to have the archives accessible at all times to the public, but all papers must be obtained from the custodian and returned to him. The proper indexing and segregation of the immense mass of material is a work that will require time, and until it is completed the building of necessity must be closed to the public.

It is a matter of congratulation to the Territory that the work of caring for and preserving these valuable documents, tracing as they do the history of Hawaii from the darkness of heathenism, through the sunlight of Christianity, and down to the present time, is at last to be undertaken in a manner that will insure their future preservation. It is a duty that has been too long neglected and one that the country owes to posterity. Though the commission has only been in existence a few months, documents have been found that will result in a saving to the Government of not less than $7,000, nearly four times the amount that the commission has at its disposal for the next two years, establishing as the documents do the Government's claim to certain lands in a case shortly to come before the courts.

FEDERAL QUARANTINE WHARF.

In an article on "Public Health and Marine-Hospital Service," by Doctor Cofer, he graphically calls attention to the wide scope of that work at this station, from which it is clear that the importance of the system far transcends the local necessity. Modesty forbids Doctor Cofer from elaborating in detail on the excellent work that he and the staff under him have accomplished. The layman will, perhaps, better understand what this branch of service is accomplishing when the statement is made that every steamer touching Honolulu and making for American ports is thoroughly examined. Cultures of doubtful cases are developed, from material taken, after the steamer has left Honolulu. By the time it reaches Puget Sound, Portland, or San Francisco a cablegram can be sent announcing the result of the bacteriological test. Thus the inconvenience to shipping and passengers is reduced to a minimum.

In connection with this work it is unfortunate that it should be the victim of bureaucracy. This community has had no better illustration of the lack of cooperative work among our great Federal departments than the delays in the construction of a quarantine wharf. Two years and six months ago, in the sundry civil act of March 3, 1903, an appropriation of $80,000 was made for the urgent and immediate needs of the quarantine station, such as laundry plant, a retaining wall around the island to raise its level, and a wharf and runway to connect with it. The community of Honolulu has had disastrous experiences in connection with contagious diseases, which have resulted in a high public sentiment which appreciates quarantine service and the necessity of such precautions. Public-spirited citizens who have endeavored to find the cause for the delay have become hopelessly lost in being referred from one to the other of those departments in which the responsibility for such work rests, and

discouragingly entangled in red tape. However, the Federal quarantine officials are still patiently struggling with the matter, and feel confident that some day the wharf will be built.

HAWAIIANS ARE NOT UITLANDERS.

There is a prevalent impression that the Hawaiian Islands must have undergone a marked change during the five years since they became an integral part of the Union. Few people realize that before the opening of California, or the discovery of gold, Honolulu was a distributing point for provisions and mail for the entire western coast of the North American continent. Many of the hardy pioneers of that great region, then called "Oregon," found it more convenient to reach the Northwest via Honolulu than to undertake the tedious and dangerous pilgrimage across the continent. Throughout the broad expanse of the Pacific Ocean—one might almost say the whole Western Hemisphere—the first school to teach the English language was founded at Vancouver Barracks, in the State of Washington, and the second in Honolulu, the latter being considered the more centrally located of the two.

Thus for decades past the predominant ideals of the people were American. The laws, schools, churches, and elections were modeled on American systems. The Yankee spirit dominated industrial enterprises and infused itself into everything, so that the changes brought by annexation were not abrupt, or so extensive as is generally supposed.

FUTURE.

The discovery of gold and the tide of immigration that flocked to the Pacific coast has resulted in many a magnificent city there, far excelling and outstripping the slowly growing commonwealth of Hawaii. Now, however, the world is awakening to the magnificent possibilities of the Pacific, on which will soon be found the commerce necessary to supply the wants of more than one-half the world's population, tributary to it. The Panama Canal is but the realization of a necessity long recognized. And almost in the center of this great field of activity is this, the smallest political subdivision of the United States of America, with a future presaging great events, suggestive of opportunities. No other community has such prospects, and no similar area of the earth's surface will play so important a part in the world's history that is yet to be made.

NEEDED LEGISLATION.

Desiring as widespread an expression of opinion as possible on the needs of the Territory, requests were sent out to the various commercial bodies throughout the Teritory. Responses to these that are of interest will be found in the Appendix:

A.—Recommendations of the Honolulu Chamber of Commerce.

B.—Recommendations of the Honolulu Merchants' Association.

The summary of legislation suggested and recommended is as follows:

First. The passage by Congress of an act under which the Secretary of the Treasury shall cause to be set aside for a period of

twenty years 75 per cent of the customs and internal revenues from Hawaii, to be used in Hawaii, as may be directed by Congress, for the following purposes: (1) The erection of educational and Federal public buildings; (2) harbor improvements and Federal military and naval defenses.

Second. Increasing the supreme court judges from three to five, by amending section 82 of the organic act. Chief Justice Frear has very clearly presented this matter in his article on the judiciary. The supreme bench in most Territories is composed of either five or seven members. With only three judges on the bench, one is often disqualified, and it is not satisfactory to have the work of another court postponed by adjournment in order to allow its judge to sit on the supreme bench.

Third. An act clearly defining the jurisdiction of the circuit courts in Hawaii in reference to their power of naturalizing aliens and legalizing their previous actions in that respect, by amending section 100 of the organic act.

Fourth. Congress to direct the Department of Justice to send out some one to conduct, with the assistance of local authorities, the condemnation proceedings and ascertaining the lawful value of the private fishing rights that have now been recognized by the Supreme Court of the United States as vested interests.

Fifth. Congress to amend section 80 of the organic act, giving the governor power of suspension or removal, between sessions of the Senate, of any appointed officer. This is a matter of grave importance, and was first urged on Congress by Governor Dole. The responsibility for a high standard of efficiency in the Territory and the enforcement of its laws is placed on the executive, although at present he can not remove a single appointee whose usefulness as a public officer has ceased.

Sixth. The experience of another year demonstrates still more forcibly the necessity for Congress to remove the restrictions on leasing agricultural lands to a period of five years. This can be accomplished by an amendment to section 73 of the organic act, allowing such lands to be leased for a period of not over twelve years. It is difficult to make the people of the Temperate Zone understand that the crops of a tropical country are not perennial; many crops require from three to four years to mature. Thus a limitation to five years is practically prohibitive.

Seventh. Reviewing the Territory's experience since annexation, there can be no doubt it would be of great advantage to allow the legislature to meet annually, instead of in biennial sessions. This can be accomplished by an amendment to section 41 of the organic act. At the same time the length of the session should be reduced to forty days, excepting Sundays and holidays, and no extension should be granted, thus amending section 43 of the organic act. With a continuance of biennial elections, such a change would allow two sessions of the legislature to be conducted by the same members. In the second session after an election no time would be lost in organizing and business would be expedited. The increased experience of the legislators would be a gain to the Territory, and there would also be more of a feeling of responsibility resting on them for their own acts in the previous session. In connection with the foregoing, section 54

of the organic act should be amended so that in case the legislature should fail to make the necessary appropriations to carry on the government the previous appropriation bills shall be deemed to have been reappropriated, without the necessity of forcing a special session of thirty days, with extra pay.

Eighth. Congress should pass an act returning to the Territory the former armory site, situated in the rear of the executive building, and taken at the time of the Spanish war. This act could be made to take effect on January 1, 1907, at which time the Kahauiki station will be occupied, with ample quarters for Federal military purposes. The armory site is proportionately much more valuable to the Territory than to the Federal Government.

Ninth. One of the most important questions that concerns the future of these islands is the need of some modification of the immigration laws in order to provide an increase of population to develop the resources of this Territory to the fullest extent. Small as Hawaii is, American statesmen must recognize that the full development of these islands can not be obtained unless they are exempt from general legislation created for conditions that exist on the mainland or Atlantic seaboard.

NEEDED APPROPRIATIONS.

First. An additional appropriation of $400,000 to continue the work of dredging Honolulu Harbor. Few, perhaps, appreciate the importance of this improvement—not so much to the Territory's advantage locally, but to American commerce as a whole.

Second. An appropriation of $350,000 for light-houses, to better protect commerce. To include very much needed new front and rear range lights in Honolulu Harbor.

Third. An increase in the appropriation of $10,000 to provide for two additional judges in the supreme court.

Fourth. An appropriation of $5,000, under the Federal Department of Justice, for the purpose of carrying out the desire of Congress to condemn private fishing rights in Hawaii.

Fifth. To do justice, appropriations should be made by Congress refunding to the Territory the sums expended between June 14, 1900, and December 30, 1904, for the maintenance of light-houses—an expenditure which no other community in the United States has ever been obliged to undertake; also, refunding to the Territory all its expenditures during the same period in dredging Honolulu Harbor and the housing of the Federal court in a Territorial building.

HEALTH CONDITIONS OF HAWAII.

[By L. E. Pinkham.]

The general health of the Territory has been excellent, there having occurred 2,640 deaths in a population of 154,001, census of 1900, equaling an annual death rate of 17.14 per 1,000 inhabitants.

The quarantine service as administered at the principal port, Honolulu, is very strict, so that during the past year no contagious disease has entered these islands.

There has been no epidemic of local contagious disease, if trachoma be excepted, an eye disease, which was promptly taken in hand and overcome. In a few country localities typhoid fever prevailed, occasioned in all probability by contamination of the water supply during the dry season and the condition of the rain-water tanks in some localities, these private tanks and reservoirs being the only source, as there are many places with no natural water supply.

There have been a few sporadic cases of pestis, amounting throughout the islands for the year to 12 deaths and 3 recoveries.

The board of health has worked in strict and unvarying harmony with the United States Public Health and Marine-Hospital Service, under the control of P. A. Surg. L. E. Cofer, M. D.

Where the government of the Territory, in its belief that economy was paramount, failed to supply the board with the necessary funds for certain objects, the executive officers of the board have secured private aid, as shown in the following paragraphs:

PRECAUTIONS.

No funds having been granted the board of health with which to prosecute works of sanitation or precaution, the Honolulu and Hilo Shippers' Wharf Committees, formed for levying a small tonnage tax on all merchandise imports, have been appealed to. During the past year a constant campaign has been carried on against rats as dangerous in spreading disease. Recently a campaign against mosquitoes has been renewed and many minor sanitary improvements have been undertaken. In Hilo, the above-named committee has oiled and cared for the streets.

OF INTERNATIONAL IMPORTANCE.

In December, 1906, there will be opened to commerce a new route which promises to at once become of vast importance, and over which the bulk of the sugar traffic of the Hawaiian Islands will pass. The Mexican Government has constructed a railroad across the isthmus of Tehuantepec, Mexico, having as its port on the Gulf of Mexico the city of Coatzacoalcos, and on the Pacific Ocean the city of Salina Cruz. These ports have been provided with unusually fine docks and facilities. As this route requires but about half the time consumed by the Cape Horn route, undoubtedly much traffic, as between the Atlantic and Gulf ports and the Pacific ports, will follow this route.

As yellow fever is common in the port of Coatzacoalcos, the Hawaiian Islands will be far more exposed than at the present time to its infection. It is important that every effort be made during the coming year to put the ports of Hawaii into the best possible sanitary condition and that the mosquito be a particular object of attack. Owing to the numerous ponds, lagoons, rice fields, etc., this is no small undertaking. The means, as provided by the legislature, are practically nothing, so that the board of health can not be held responsible for any misfortune arising from this new source of possible infection.

The Federal quarantine officials, particularly the local superior officer, Dr. L. E. Cofer, are alive to this particular matter, and both the Federal and Territorial health officials will act in unison in all measures of protection.

LEPROSY.

It is satisfactory to record the success of the efforts made to interest the Government of the United States in the subject of leprosy. Now that, as a beginning, the Federal Congress has appropriated $100,000 for hospitals, laboratories, and the necessary accessories, and $50,000 per annum for maintenance and prosecution of the work, it would seem if science can find a cure or preventive of the disease, leprosy, it should now be discovered.

The Territory has deeded by proclamation the mile square of land required by the act. The titles have been passed upon by the United States district attorney as perfect, and Surg. Gen. Walter Wyman, the head of the United States Public Health and Marine-Hospital Service, personally selected the site for the United States station at the settlement. He has encouraged the project in every way and given his assurance the work will be prosecuted with the utmost diligence. As a matter of record the act of Congress covering this subject is here inserted:

AN ACT To provide for the investigation of leprosy, with special reference to the care and treatment of lepers in Hawaii.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That when the Territorial government of Hawaii shall cede to the United States in perpetuity a suitable tract of land

one mile square, more or less, on the leper reservation at Molokai, Hawaii, there shall be established thereon a hospital station and laboratory of the Public Health and Marine-Hospital Service of the United States for the study of the methods of transmission, cause, and treatment of leprosy.

SEC. 2. That the Secretary of the Treasury be, and he is hereby, authorized to cause the erection upon such site of suitable and necessary buildings for the purposes of this act, at a cost not to exceed the sum herein appropriated for such purpose.

SEC. 3. That for the purposes of this act the Surgeon-General, through his accredited agent, is authorized to receive at such station such patients afflicted with leprosy as may be committed to his care under legal authorization of the Territory of Hawaii, not to exceed forty in number to be under treatment at any time, said patients to remain under the jurisdiction of the said Surgeon-General, or his agent, until returned to the proper authorities of Hawaii.

SEC. 4. That the Surgeon-General of the Public Health and Marine-Hospital Service of the United States is authorized to detail or appoint, for the purposes of these investigations and treatment, such medical officers, acting assistant surgeons, pharmacists, and employees as may be necessary for said purpose.

SEC. 5. That the sum of one hundred thousand dollars is hereby appropriated, from any money in the Treasury not otherwise appropriated, for the erection of necessary buildings and other equipment; and fifty thousand dollars, or so much thereof as may be necessary, for maintenance and pay of all officers and employees during the fiscal year ending June thirtieth, nineteen hundred and six.

SEC. 6. That the Surgeon-General of the Public Health and Marine-Hospital Service shall, subject to the approval of the Secretary of the Treasury, make and adopt regulations for the administration and government of the hospital station and laboratory and for the management and treatment of all patients of such hospital.

SEC. 7. That when any commissioned or noncommissioned officer of the Public Health and Marine-Hospital Service is detailed for duty at the leprosarium herein provided for, he shall receive, in addition to the pay and allowances of his grade, one-half the pay of said grade and such allowances as may be provided for by the Surgeon-General of the Public Health and Marine-Hospital Service, with the approval of the Secretary of the Treasury.

Approved, March 3, 1905.

IMPROVEMENTS.

The last legislature made provision for several important and sensible improvements at the leper settlement. There was an appropriation of $15,000 for an increase in the water supply—one of $3,000 for a visitors' house and improvement of the landing, one of $4,700 for new buildings, one of $2,400 for a poi factory, and one of $1,000 for the pali trail. Hon. C. R. Bishop is expending upward of $3,000 on improvements at the Bishop Home for Girls. Hon. H. P. Baldwin has authorized a sewerage system to be put in at the Baldwin Home for Boys, at his expense. With these improvements completed, the settlement will in all probability require in the future little beyond suitable repairs and maintenance, unless it be thought wise to improve the Bay View Home. Preparations are being made to erect a suitable dispensary building.

KAPIOLANI HOME FOR NONLEPROUS FEMALE CHILDREN OF LEPERS.

A committee of the present legislature visited the above-named institution. It was certainly a revelation when they observed the improvements made solely by the labor of the regular employees and girl inmates of the home under the supervision of the good Sisters. From old materials given them they have erected a large dormitory and accessories. An additional appropriation of $500 afterwards greatly assisted toward proper plumbing and sanitary arrangements.

The committee were visibly affected and were in the mood to consider, and then and there promised to provide for the needs of the nonleprous boys—children of lepers—which subject was urgently brought to their attention. The Kapiolani Home is now very comfortable, and all the inmates are apparently contented, healthy, and happy.

HOME FOR NONLEPROUS BOYS OF LEPROUS PARENTS.

Although for years the need for a suitable home has been urged unavailingly, the above incident seemed to have its effect, as the last legislature appropriated

$6,000 for the establishment of such a home and $3,000 per annum for its maintenance. As the ages of these male children range from babyhood to manhood, it is necessary to very carefully consider the proper basis on which to found this institution. The matter is being given the most careful attention, and shortly the home will be established. An attack on the authority of the board of health as to the control of persons affected, or presumably affected, with leprosy was made in the United States district court in the case of Mrs. Mikala Kaipu. The authority of the board was sustained, but an appeal to the United States circuit court of California has been noted. Never in the history of the leper settlement and allied institutions has there been greater general and individual contentment, comfort, and satisfaction. There has not been a single application for permission to leave the settlement, but quite a number to enter the settlement, not as kokuas, but from people desiring a residence with their friends and relatives. The disease seems practically to be about holding its own, as between deaths and new cases.

No efforts are spared to add reasonably to the privileges and pleasures of the residents at the settlement. A fine band stand has been erected at Kalaupapa, a gift of Dr. W. C. Wile, of Danbury, Conn. Mrs. J. M. Dowsett presented a beautiful new upright piano to the Bishop Home, and Mrs. C. B. Cooper secured subscriptions that provided a new chapel organ for the same home.

Hon. H. P. Baldwin presented the Baldwin Home band with new instruments, and, not to be outdone, though others had tried and failed, Acting Governor Atkinson got his lever under the unused government band instruments and sent them to the Kalaupapa band. The baseball league now knows where to send its unused balls, bats, etc. Books and current literature are sent in quantities. A member of the board is simple enough to believe isolated people need more wholesome work and recreation than outside moralizing, and sees to it that cash purses are put up for the winners in shooting and racing contests. Superintendent McVeigh believes in "luaus" (native style of feasting) at reasonable intervals. With the attention of friends added, certainly those restrained at the settlement can not feel that they are forgotten.

One of the kindliest incidents was the visit of the U. S. S. *Bennington* to the settlement, through the courtesy of Commander Lucien Young, at the thoughtful suggestion of Acting Governor A. L. C. Atkinson. The tragedy that followed at San Diego will fix this incident in the minds of those at the settlement equally with the pleasure occasioned by the visit. In visits to the settlement the lepers have invariably been found polite, thoughtful, and considerate. Their greetings have, in receiving honored visitors, been formal, sincere, appropriate, and often quite elaborate for their facilities. Having found it often advisable to trust to the honor of the leper suspects in Honolulu and the lepers at the settlement, never has a leper suspect broken his or her promise to me; never has a leper at the settlement broken his word unless overpowered by insistent and indiscreet friends.

FREE DISPENSARY.

After being maintained for fourteen months by private charity this institution is now a government charge. The work done at the dispensary during the past six months was as follows:

Number of cases treated	6,615	Number of surgical cases	739
Number of medical cases	5,876	Number of prescriptions filled	1,364

NATIONALITIES.

Portuguese	1,205	Norwegian	6
Hawaiian	594	Irish	5
Porto Rican	279	Samoan	4
Negro	89	Gallician	3
Japanese	84	West Indian	3
German	76	Hungarian	2
Chinese	71	Filipino	2
American	49	Korean	1
Spanish	31	Italian	1
English	17	Malay	1
Chilean	17	Gypsy	1
French	10	Danish	1
Russian	9	Mexican	1
Cuban	8	South Sea Islander	1
Swedish	7	Polish	1

DIPHTHERIA.

There have been but few cases, and in every instance prompt measures have been taken by the board.

BUBONIC PLAGUE.

From time to time we have sporadic cases of bubonic plague. This is to be expected and is the occasion of no apprehension. The officers of the board of health act with the greatest promptness on these matters so the spread of the disease or infection is quite improbable.

HAWAII'S EDUCATIONAL WORK.

[By James C. Davis.]

In making a report upon the school work done in this Territory it is necessary to speak in detail of its cosmopolitan population in order to convey a proper appreciation of the problem the Territory is trying to solve in its schools.

POPULATION.

The population according to nationality as per latest census, 1900, was 154,001. Hawaiians, 29,787; part Hawaiians, 7,848; whites, 26,252; Chinese, 25,762; Japanese, 61,115; other foreigners, 3,237. All Europeans and white Americans are classed as whites, and under "Other foreigners" are classed Porto Ricans, South Sea Islanders, etc. From the foregoing it appears that of the total population the Hawaiians and part-Hawaiians form 24 per cent; the Asiatics, 56 per cent; the whites, 17 per cent; and the remaining foreigners, 3 per cent.

Of the above classification all of the Hawaiians and part Hawaiians, nearly all the whites, about 6,000 of the Japanese, and also a part of those classed as "Other foreigners" are American citizens.

Complete statistics as to the arrival and departure of Asiatics at this port since 1900 are not available.

From June 1, 1901, to April 30, 1905, the figures are as follows:

	Chinese.	Japanese.	Total.
Arrivals	1,392	35,289	36,681
Departures	6,250	31,424	37,674
Excess of arrivals		3,865	
Excess of departures	4,858		993

As to these two nationalities, therefore, it is probable that the totals are not far from those of 1900.

The Koreans, however, show an increase of 7,388, raising slightly the percentage of Asiatics.

The native-born population, as per latest census, was 63,216—Hawaiians, 29,787; part-Hawaiians, 7,843; whites, 16,446; negroes, 178; South Sea Islanders, 60; Japanese, 4,881; Chinese, 4,021. Of this total population 41 per cent were born in this country, and of this number 8,902 are of Asiatic parentage. Of the entire number of Hawaiian-born Asiatics, about 5,485 were born since the annexation of these islands to the United States and are therefore eligible to citizenship. Add to these the number of Asiatic children whose parents were citizens of the Monarchy and of the Republic, and we have about 6,000 Asiatics possessing the inceptive right of American citizenship. I understand upon inquiry that the number is probably much larger, as this class of our people have not been very faithful in the registration of births and deaths. Deduct 6,000, the approximate number of Asiatics capable of becoming citizens by right of birth, from 86,877, the total Asiatic population, and we have 80,877, or nearly 52½ per cent of the entire population, incapable of citizenship, and we find further that out of the entire citizenship of 71,323 about 6,000, or about 8⅖ per cent, are of Asiatic parentage.

PUPILS.

The total enrollment in all the schools, according to nationalities, for the years 1904–5, was as follows:

	1904.	1905.		1904.	1905.
Hawaiians	4,877	4,972	Chinese	1,650	1,985
Part Hawaiians	3,234	3,284	Other foreigners	745	650
Whites	5,873	5,906			
Japanese	2,920	3,609	Total	19,299	20,406
Public schools:			Private schools:		
Hawaiians	4,121	4,148	Hawaiians	756	824
Part Hawaiians	2,253	2,331	Part Hawaiians	981	953
Whites	3,851	3,882	Whites	2,022	2,024
Japanese	2,483	2,938	Japanese	437	671
Chinese	1,192	1,353	Chinese	458	632
Other foreigners	567	550	Other foreigners	178	100
Total	14,467	15,202	Total	4,832	5,204

The foregoing tables show the entire enrollment for 1905 in public and private schools to be 20,406, as against 19,299 for the year 1904. The gain for the past year was 1,107, of which 735 were in the public schools and 372 in the private schools. In the public schools the Hawaiians and whites show a small increase, the part-Hawaiians and those marked "Other foreigners" have suffered a slight decrease, while the Japanese and Chinese make up 84 per cent of the entire increase in the public schools. This great increase in enrollment on the part of the Japanese and Chinese is due in part to the fact that a great number of the children of this class of our people are just becoming of school age, and in part to the fact that the Japanese and Chinese put their children into school just as soon as the law permits, and in many cases these children are enrolled before they reach school age.

The total enrollment in all the schools, according to age, for the year 1905 was 20,406.

	Under 6.	Between 6 and 8.	Between 8 and 15.	Over 15.	Total.
Boys	565	3,106	6,592	864	11,127
Girls	591	2,550	5,500	638	9,279
Total	1,156	5,656	12,092	1,502	20,406
Public schools:					
Boys	119	2,481	5,482	274	8,356
Girls	100	2,013	4,453	280	6,846
Total	219	4,494	9,935	554	15,202
Private schools:					
Boys	446	625	1,110	590	2,771
Girls	491	537	1,047	358	2,433
Total	937	1,162	2,157	948	5,204

The law of the Territory compels all children mentally and physically able, between the ages of 6 and 15, to attend school. The above tables show 1,156 pupils under 6 years enrolled in school. Of this number, 219 are in the public schools and 937 in the private schools. While the school law places the age limit between 6 and 15, the department leaves the enrollment of children under age to the principals of the different schools, with the provision that children not within school age must never be enrolled if by so doing children of school age are crowded out. The large number of pupils under 6 years in the private schools represents the entire kindergarten enrollment. As to pupils over age, 554 are in the public schools and 948 in the private schools. The department rather encourages ambitious, intelligent, young people to remain in school, and the teachers do all they can to keep these young people with them as long as they have room and time for them.

The enrollment in public schools according to the course of study was as follows:

Receiving grade	1,484	Seventh grade	341
First grade	4,454	Eighth grade	118
Second grade	3,030	High school course	143
Third grade	2,292	Normal school course	125
Fourth grade	1,669		
Fifth grade	1,001	Total	15,202
Sixth grade	545		

The preceding table shows 12,929 pupils, or 85 per cent of the entire enrollment, in the first four years; 2,005, or 13 per cent, in the four upper grades; and 268, or 2 per cent, in the high school and normal school courses.

The comment here is that 85 per cent of the pupils enrolled in the public schools never get any further than the primary grade, due primarily to two causes: First, that the greater part of the pupils enrolled in the public schools are compelled to leave school as soon as they reach the legal age limit and assist in the support of the family; second, that it takes most of the pupils two years' time to do one year's work as laid down in the course of study.

Enrollment in the public schools in manual training, etc.

Sewing	6,507	Lauhala and bamboo	645
Knife work	392	Mat weaving	145
Agriculture	10,250	Other manual training	1,489
Drawing	1,002	Singing	15,000

In all the public schools, manual instruction of some sort is given. The instruction in sewing consists in teaching both girls and boys hemming, seaming, gathering, patching, and making buttonholes. The work in agriculture consists mostly in weeding, planting, and caring for plants and trees and mowing the schools lawns. The influence of well-kept school yards shows itself in the neat dooryards of communities throughout the Territory. Plaiting, weaving, and knife work are carried on in most schools, and in many cases they are carried into the homes by the pupils. Singing and drawing are taught in all the schools. The Hawaiians as a race possess natural talent in both of these branches of human accomplishment. Both systems of vocal music—the tonic sol-fa and the staff notation—are taught; the former through the first three years of the child's musical training and the latter through the upper grades. The purpose of manual education in the public schools, aside from training the hand and eye in the use of tools, is to develop the moral and æsthetic powers of the child's mind.

Total number of teachers in all the schools for the years 1904 and 1905.

	1904.	1905.		1904.	1905.
Hawaiians	83	81	Chinese	16	27
Part Hawaiians	86	105	Other foreigners	16	27
Whites	436	440			
Japanese	9	7	Total	646	687
Public schools:			Private schools:		
Hawaiians	61	69	Hawaiians	22	12
Part Hawaiians	73	85	Part Hawaiians	13	20
Whites	259	250	Whites	177	190
Chinese	3	4	Japanese	9	7
Other foreigners	3	6	Chinese	13	23
			Other foreigners	13	21
Total	399	414	Total	247	273

The foregoing table gives 687 as the whole number of teachers employed in the public and private schools during the year just elapsed as against 646 for the year 1904.

In the public schools there were 414 teachers and in the private schools 273 for the year 1905, while in the public schools for the previous period there were 399 teachers and in the private schools 247. The increase in the number of teachers in the public schools for the past year was 15, and that in the private schools was 26. The average number of pupils per teacher in the public schools for the past year was 37, and the average number under each teacher in the private schools was 19. The Hawaiian and part Hawaiian teachers in the public schools have increased 20 in number for the past year; the whites have decreased 9, the Chinese have gained 1, and those classed as "Other foreigners" have increased 3. Of the 414 teachers in the public schools during the past year 205 were born and educated here, and of this number 120 have been trained in the normal school in Honolulu. Of the 250 white teachers 102 are from universities, colleges, and normal schools abroad.

TEACHERS' ASSOCIATION AND READING CIRCLES.

There is a Territorial teachers' association which has its headquarters and place of meeting in Honolulu. To membership in this association all teachers in the public and private schools in the Territory are admitted.

In the meetings of the association addresses and papers on educational matters are listened to and discussed. There is a course of reading laid down by the association covering a year's work in professional and general culture. This reading matter includes books on pedagogy, school management, methods, and general literature.

In each district there is an association and reading circle in which the course of reading assigned by the general association is read, studied, and discussed. These readings and discussions do much toward creating and maintaining a pride of profession among the teachers. The regulations of the department encourage teachers to organize and attend the meetings of these associations. In many districts distances are so great, transportation so dear, and living accommodations so poor that the attendance upon these meetings is quite an item of expense. Still in many districts the sacrifice is made, and teachers deserve great credit for the faithfulness shown in the endeavor toward improving themselves in their chosen work.

The total number of schools according to grade for the years 1904 and 1905 was 213.

	1904.	1905.		1904.	1905.
Kindergartens	18	18	Seminaries	13	13
Primary schools	56	60	Orphanages	1	1
Primary grammar schools	110	113	Reform schools	2	2
High schools	1	1	Colleges	2	2
Normal schools	1	1			
Industrial schools	3	3	Total	207	214

Public schools:			Private schools:		
Primary schools	32	36	Kindergarten schools	18	18
Primary grammar schools	110	113	Primary schools	24	24
High schools	1	1	Industrial schools	2	2
Normal schools	1	1	Orphanages	1	1
Industrial schools	1	1	Seminaries (female)	13	13
Reform schools	2	2	Colleges	2	2
Total	147	154	Total	60	60

The above list shows the whole number of schools to be 214 for the past year, of which 154 are public schools and 60 private. The increase in the number of public schools during this period was 7. They are classified as above in order to give a somewhat clear idea of the grade and sort of instruction given in the schools of the Territory.

The kindergarten schools are all under the auspices of the "Kindergarten Association." These schools form the link between the home and the school life of the child, and they are maintained and conducted as private schools.

The primary schools are those in which the work done at present is not beyond the first four grades of the common school course. They are not confined to those grades; they may do more advanced work. The primary grammar

schools do primary grade work and more or less grammar grade work. A few of these schools do something in the first year high school course.

There is at present only one high school in the Territory—the one in Honolulu. The work done in this school compares favorably with that done in similar schools on the mainland. It is placed on the accredited list of Stanford University, of California. The commercial department of this school has done much toward furnishing our business houses and government offices with stenographers, typewriters, and bookkeepers. There are three other schools, one each at Wailuku, Hilo, and Lihue, aspiring to be classed as high schools, and which have already begun work on the high school course.

The normal training school, established in 1896, is soon to move from its present cramped and unfit quarters into its new modern building. This school has granted during its ten years' existence 33 diplomas and 131 certificates. Out of the whole number of young people holding diplomas and certificates from this school there are 120 teaching in the public schools. This means that nearly 30 per cent of the teachers employed in the public schools have been trained in our normal school here in Honolulu.

Lahainalnua, the industrial school, has just been installed in new buildings, and is now fairly equipped for its work as an industrial and agricultural school. The enrollment for the past year was 55. The enrollment for the coming year is expected to be much larger.

There are two reformatory schools in the Territory—one for girls at Honolulu, and the other for boys at Waialee. The reform school for girls occupies the premises formerly used by the reform school for boys. The premises, while too small for the large enrollment of boys, are quite sufficient and comfortable for the girls. The matron of the school reports as follows upon the numbers received and dismissed for the past year:

In school July 1, 1904	8
Received year ended June 30, 1905	10
	18
Released during year ended June 30, 1905	1
In school July 1, 1905	17
Between 8 and 15 years of age	10
Over 15 years of age	7
	17

All of these girls with one exception were committed for disobedience to parents.

The reform school for boys is situated on the railroad about 60 miles from Honolulu. The site is pleasant and beautiful and gives ample room for dormitories, shops, and schoolrooms, and arable land. The buildings are all new and well equipped for the work of correcting youthful tendencies toward the acquiring of bad habits.

In both of these reform schools there is a system of merits and demerits, which seems to work very satisfactorily. The following is the report of the superintendent of the reform school for boys as to the numbers received and released during the year just elapsed:

Enrolled July, 1904	105
Admitted during the year	37
	142
Released during the year	43
Enrolled June 30, 1905	99
Between 6 and 8 years of age	3
Between 8 and 15 years of age	78
Over 15 years of age	18
	99

The offenses for which these boys were committed were truancy, vagrancy, disobedience to parents, and petty theft. The greater portion were committed for truancy, vagrancy, and disobedience to parents.

The present legislature enacted a law establishing a juvenile court. This act provides that all offenders under 16 years of age shall be tried separate and apart from those of more mature age; that youthful offenders charged with minor offenses, such as truancy, disobedience to parents, petty theft, etc., may, in the discretion of the court, be paroled and placed under the surveillance of probation officers. The probation officers are appointed by the district magistrates. Each magistrate appoints three. These probation officers visit the parents, guardians, or teachers who have charge of the boy or girl paroled, and receive a report as to the conduct of the paroled offender and report in turn to the committing magistrate. When a satisfactory probation has been served the culprit is released from parole. If, however, the paroled offender seems incorrigible, he is summoned before the magistrate and committed to the reform school or to jail.

It is hoped that the working of this court will obviate placing in the reform schools children who have not yet acquired fixed habits of vice. The private primary schools are largely denominational and do the same work as the schools of the same class among the public schools.

The private industrial schools are the Kamehameha schools for Hawaiian boys and girls. They are endowed and maintained for the purpose of training young people in the industries and in domestic science. In addition to this training they give academic courses equivalent to the first year in the high school course.

The Kona Orphanage is a private enterprise, supported by contributions. The legislature in its recent session appropriated $3,000 to its support, but no reason is yet apparent for it being placed by them under appropriations for this department.

The seminaries are denominational schools. They give industrial and academic training. The idea is to make good housekeepers of the girls and industrious citizens of the boys.

Oahu College, a well endowed and equipped institution, does high-class college entrance work. It is one of the oldest schools in the islands, and its graduates are among the most successful professional and business men in the community.

St. Lous College is a Catholic school of long standing, and does good work in all the grades from the primary through the high school course.

In addition to schools already mentioned there is in every community having any considerable number of Japanese and Chinese a school held after 2 p. m. each day except Sunday in which the Japanese and Chinese languages are taught to Japanese and Chinese children. These schools are designed to teach these Asiatic children their mother tongue and something of the history of their country, so that the boy or girl in the future, if he or she so desires, can return to the land of his or her father with the power to use its language and with some knowledge of its history, laws, industries, and customs. It is very probable that not all of these Hawaiian-born Asiatics will return to the East; in such case the part remaining here and exercising the duties and privileges of American citizenship can exercise such duties and enjoy such privileges with intelligence, having acquired this intelligence in the schools in this Territory.

NEW SCHOOL BUILDINGS.

There have been built and contracted for during the past year 41 public school buildings—30 schoolhouses, 9 teachers' cottages, and 2 dormitories. These 30 school buildings contain 92 rooms and furnish capacity for 4,140 pupils; 35 of these 41 buildings replace buildings out of repair and unfit for further use, and 5 are for the purpose of accommodating the increase in the school population. Thus it is seen that the school accommodations, as to buildings, have been very materially improved during the past year.

The following is a list of facts that do not appear in the body of this report, but which are necessary to an intelligent understanding of the school work in this Territory:

Total population of the Territory as per last census	154,001
Total number within school age, as nearly as can be ascertained	19,374
Percentage of total population enrolled in all the schools	13¼
Percentage of total population enrolled in public schools	9¹¹⁄₁₂
Percentage of total population enrolled in private schools	3⅓
Percentage of total population within school age	11½
Percentage of total population within school age enrolled in school	91.6

Average daily attendance of pupils enrolled in public schools, per cent	87
Average wage paid to teachers in the public schools per month	$51
Number of public school buildings, schoolhouses	184
Number of public school buildings, teachers' cottages	79
Total value of all public school buildings, schoolhouses, and teachers' cottages, including land	$810,000
Total value of all private school property	$1,333,000
Average cost of tuition in public schools per annum	$16.87
Total number of school days in the last school year	182

SOCIOLOGY AND EDUCATIONAL PROBLEMS.

[By M. M. Scott.]

Hawaii may not inaptly be called a museum of ethnology, and the making of good American citizens of her mixed youth a problem in sociology. Nowhere else in the world are specimens of so many races congregated in so small a compass, and under conditions so favorable for constant contact in industries, business, schools, churches, and social gatherings. The utmost democratic spirit prevails in society, in the churches, and in the schools. Race prejudice is here reduced to a minimum. Boys from the schools, of the many races, all mixed up in the same teams, meet in football, baseball, and aquatic sports, and girls of a like mixture contest the basket-ball field. This condition of affairs sometimes astonishes and even shocks strangers from abroad, especially if they be untraveled and of a Brahmanic turn of mind.

In British India there are about 150,000 Eurasians, or half-castes, that occupy an anomalous position in the social organization. They are superior in education and social culture (according to western standards) to the native, and English society does not recognize them. To English and European society of India, the unfortunate half-caste is not only a "baboo," but he is tabu as well. Enlightened and philanthropic Englishmen have noted and regretted this state of affairs, and they characterize it as one of the darkest spots in the otherwise beneficent rule of England in India, and they also predict that it will constitute one of the chief sources of unrest and future trouble for England in her vast vice-regal empire.

The dominant note in the sociological and educational problems of the Territory of Hawaii—in short, in her civilization—is and has been since the arrival of the first missionaries American. During the monarchy the churches, schools, business methods, social usages, even the political conditions, were American. American national holidays, especially the Fourth of July and Washington's Birthday, were celebrated as regularly and with as much enthusiasm as in Boston or San Francisco.

In visiting Honolulu European travelers who expected to find a sleepy dirty South American town were surprised and pleased to observe a bustling American city in the Tropics. Even if a monarchy, the pravailing tone of unconventional American manners prevailed.

The first thing the American missionaries persuaded the King to do in his division of lands was to follow the American example and set aside the lands not otherwise appropriated at the time as part of a permanent fund to be used for the education of all children. American books were translated into Hawaiian, and thus the first knowledge the child got of any country was of the United States.

From the foregoing facts it is easy to see that the transition of Hawaii from a sovereign little mid-ocean monarchy to a dependent American territory was neither difficult, disappointing, nor unexpected.

A new and interesting problem now presents itself to the thinkers of this Territory. In the economic development of the resources of the country a very large number of Orientals have come here, and they are still coming. It was not their intention originally to bring their wives and children with them, but it was insisted upon by government and the planters many years ago that a certain proportion of the immigrants should be women. That was before annexation. Under that rule quite a large number of Japanese women and children arrived. Last year about 500 Japanese children were born in Hawaii.

According to the report of the superintendent of public instruction for the past year, there were over 4,000 Japanese and Chinese children in the public

schools of this Territory, nearly equaling in number the Hawaiian children. The male children of these two races born here will be American citizens if they choose to remain after their majority, and will become voters and office-holders. The question is, What instrumentalities can be brought to bear upon them that will make them good American citizens? Is it possible for the State and society to take the children of races so diverse from Americans as are the Japanese and the Chinese and by some educational, social, and political crucible fuse them and turn them out homogeneous Americans?

This is the practical and very interesting problem that presents itself to the people of this Territory, the solution of which is sought by both statesmen and social philosophers. There is no better place than Hawaii for an experiment of this kind. The country is small in area. The population is limited. The Orientals come into daily contact with Americans, men and women of light, and leading in every relation of life. The old missionary set the example, which the man of business and of industry has, to a large extent, followed. The Chinese have always been treated here in decided contrast with the treatment they have received in California. By the advice of the early missionaries, and through their organizing power, the King and legislature made provision for an excellent system of public schools. That system, modernized and improved, is the fundamental agency by which the children of the diverse nationalities of Hawaii are to be trained, reared, and transfused into American citizenship.

Can it be done? The most thoughtful educators of this Territory answer, emphatically, yes. It is being done now. It has been done. Both Chinese and Japanese born and nurtured in Hawaii are among our best citizens. They hold and exercise the franchise. They are industrious, accumulate property, are charitable and law-abiding.

They seem to select and vote for, as if by unerring instinct, the best men for office. The children of the Territory meet in the schoolroom, the playground, the church, and the Sunday school. They sing the same patriotic American songs. They read American history and literature. The higher grades are well instructed in the principles and practice of free government—national, State, and Territorial. It is the unanimous testimony of the teachers that no class of children respond more readily and intelligently to both moral and intellectual instruction than do the Orientals.

The recent tendency of the best scientific thought among both biologists and sociologists is that nurture has more influence upon human character than nature—environment than heredity, to put it in the language of the schools. Inborn tendencies in any race are but tendencies—mere potentialities. Education, social and political environment seize upon these potentialities and work them up into the finished product—into actualities. But this work must be done chiefly in the schools. The minds of the young are extremely plastic. Almost any system of morals may be impressed on the minds and emotions of youth.

It is also observed by the teachers in our schools that the Orientals are very fond of the study of the principles of the American democracy. These principles meet with their enthusiastic approval. There is no reason, therefore, either in theory or practice, why the children of races so strong in moral and intellectual power as the Chinese and Japanese, trained in American schools, society, and political principles, should not make excellent American citizens. All this is not mere theory. But if it were theory only, it is founded on the soundest principles of deductive reasoning. It is not mere speculation, because we have already proven the postulate in Hawaii, as shown in the foregoing statements, and we are demonstrating it now on a much more extensive scale in our wise system of free and compulsory education.

Many of the most thoughful Philippine teachers returning to America, through Honolulu, after examining our schools and their results, have declared that Hawaii has solved, and is solving, the educational and social problem for our insular possessions.

They believe that it would be of inestimable value to the educational welfare of both Porto Rico and the Philippines if an able commission could be appointed from these two possessions to inquire into and report upon the methods and progress of our system.

FINANCES.

[By A. G. Campbell.]

The report of the treasurer of the Territory to the governor of a year ago recommended several changes which needed legislative action to put into effect. The last legislature at its regular session wisely passed several of the necessary laws.

The principal change was made in the tax laws. (Acts 87–99, session 1905.) Hertofore real and personal property were returned for taxation purposes as of January 1, and income tax returns were made in July to cover the twelve months preceding, and all these classes of taxes were due September 1 and delinquent November 15. After January 1, 1906, while the time for returning real and personal property is not changed, the income tax returns will also be made in January to cover the twelve months preceding and all these taxes are to be payable in two installments, one-half in May and one-half in November. Besides dividing the payment into two installments, and thus making it easier for some classes to promptly meet this obligation, this method has the additional advantage of so distributing the receipts from this source, which now come into the treasury the latter part of the year, that the necessity for registering warrants will be reduced to a minimum.

The law with reference to the time and manner of collecting the licenses was also changed (act 32, session 1905) and now all licenses expire on June 30 of each year; this also brings money into the treasury at a time when receipts from other sources are at a minimum. Several of the license laws were amended and the liquor-license law was entirely repealed, and a new law (act 67, session 1905) enacted in its stead. This law went into effect the first of this year, and it remains to be seen how it will stand the test of trial. In the old law the governor and the treasurer had considerable discretionary power in issuing licenses, and they were not issued indiscriminately either as to persons or localities. Under the law now existing, any applicant, unless he has been convicted of a felony, gross cheat, gambling, or a violation of the said liquor law, must be granted a license, providing that a majority of property holders in the immediate vicinity consent to having the license issued.

The foreign-corporations license was also changed (act 98, session 1905) to the fixed amount of $300 per annum instead of one-tenth of a mill on the authorized capital and new licenses were imposed as follows during the session of 1905:

Physician's license (act 48)	$10	Secondhand dealer's license (act 31)	$25
Osteopath's license (act 48)	10	Emigrant agent's license (act 57)	500
Pawnbroker's license (act 35)	50		
Horseshoer's license (act 46)	5		

CORPORATIONS.

Heretofore the cost of filing corporation papers was simply the cost of recording same and $25 for stamps. In addition to these charges the last legislature imposed a schedule of filing fees (act 91, session 1905) very similar to what is in use in many of the States on the mainland.

REGISTERED WARRANTS.

While the receipts of the Territory during the twelve months ended June 30, 1905, exceeded the expenditures by $86,849.91, still during all but two months of this period all warrants drawn on the treasury by the auditor, either for salaries or for material had to be registered because cash was not available to pay them on presentation. The changes above referred to which advance the time of collection of at least $600,000 of taxes from November to May will necessarily relieve this condition. But as the necessity for registering warrants is likely to occur at any time, and as it always creates dissatisfaction, it might be well to call the attention of Congress to the advisability of so amending section 55 of the organic act that the doubt which now exists as to the Territory's right to avail itself of a bank overdraft or loan for temporary purposes would be removed. With such an amendment and the adoption of a policy of depositing Territorial funds in banks with Federal or Territorial bonds as security, no risk would be incurred and great relief might at times be rendered.

Other new legislation which may be mentioned in connection with this department is the direct inheritance tax law—act 102, session 1905. Heretofore there was a collateral inheritance tax law in force which imposed a tax of 5 per cent on all inheritances received by others than a mother, father, son, daughter, adopted child, or grandchild. All gifts or inheritances not coming under the provision of that law were taxed under the income tax law 2 per cent on the amount of money or value of personal property, real property being exempt. This collateral inheritance tax law was repealed and a direct inheritance tax law passed to take its place. This law is drawn on modern lines, excepting that the rate of tax is the same for all amounts, viz, 5 per cent for all inheritance by collateral heirs in excess of $500 and 2 per cent for all inheritance by direct heirs in excess of $1,000, and the law contains all the provisions for appraisement of the estate by appointees of the court, and gives the court supervision over the collection of the tax.

BUREAU OF CONVEYANCES.

During the year the work of this office has progressed, and the legislature passed several measures which will facilitate the work and give the public better service. The collections during the year were $13,615, against collections of the previous year of $13,926, and the expenses of the office were 57⅔ per cent of the collections, or $7,850.97, against the previous year's expenses of 84.09 per cent of the collections, or $11,710.33.

BONDED DEBT.

The bonded debt of the Territory on June 30, 1904, was $2,185,000. During the year this was further increased by the sale of one thousand 4¼ per cent $1,000 bonds at a premium of one-tenth of 1 per cent, and decreased by the payment of 5 per cent bonds amounting to $48,000.

A detailed statement of all the bonds outstanding on July 1, 1905, is as follows:

Loan act June 13, 1896 (outstanding) (issued by authority of act of the legislature of the Republic of Hawaii, approved June 13, 1896; interest at 5 per cent per annum, payable semiannually; bonds redeemable in five years and payable in twenty years from July 1, 1896)	$822,000
Fire-claims bonds (issued by act of Congress approved January 26, 1903; interest at 4 per cent per annum, payable semiannually; bonds redeemable in five years and payable in fifteen years from May 1, 1903)	[a] 315,000
Public improvement 4½ per cent bonds, series 1903–4 (issued by the authority of act of the legislature of the Territory of Hawaii, approved April 25, 1905, and approved by the President of the United States; interest payable semiannually; bonds redeemable in five years and payable in fifteen years from October 1, 1903)	[b] 1,000,000
Public improvement 4¼ per cent bonds, series 1904–5 (issued by authority of act of the legislature of the Territory of Hawaii, approved April 25, 1903, and approved by the President of the United States; interest payable semiannually; bonds redeemable in five years and payable in fifteen years from January 2, 1905)	[b] 1,000,000
Total bonded debt July 1, 1905	3,137,000

A contract has been signed whereby $600,000 of the above $822,000 5 per cent bonds will be refunded on October 4, next, by $600,000 of a refunding bond issue bearing 4 per cent interest. This 4 per cent refunding bond issue sold at 101⅝ to a Honolulu capitalist.

The next issue of bonds bearing 3½ per cent interest will be placed on the market the latter part of this year, and from all indications will sell well.

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[a] Total authorized issue, $326,000. Total required and issued, $315,000.
[b] Total authorized issue (to be approved by the United States), $5,000,000.

TAXABLE PROPERTY.

The assessable value of real and personal property in the Territory on January 1, 1904, was $123,898,504, divided as follows:

Taxation division.	Real estate.	Personal property.
First	$32,133,096	$37,451,555
Second	11,046,619	5,419,616
Third	14,916,221	11,833,177
Fourth	5,421,043	5,677,177
Total	63,516,979	60,381,525

While the assessable value of real and personal property in the Territory on January 1, 1905, was $133,924,100, divided as follows:

Taxation division.	Real estate.	Personal property.
First	$31,625,579	$38,640,381
Second	13,751,078	6,967,738
Third	15,179,975	12,640,727
Fourth	6,952,404	8,166,218
Total	67,509,036	66,415,064

Showing that during the year assessable property has increased $10,025,596. Besides the 1 per cent on the assessable taxable value as shown above, the income tax and specific taxes increase the revenue from this source. The taxes collected during the year ended June 30, 1905, amounted to $1,626,075.50, and this was $55,123.97 less than was collected during the preceding twelve months. The total cost of assessing and collecting these taxes, including costs of all stationery and material, was $59,655.71, or 3.66 per cent of the amount collected; while the total cost of assessing and collecting the taxes for the preceding year was $71,362.16, or 4.24 per cent of the amount collected.

Revenue, Territory of Hawaii, for the year ended June 30, 1905.

RECEIPTS.

Licenses	$107,303.16
Revenue stamps	26,255.70
Corporations and copartnerships	1,827.00
Inheritance tax	6,271.71
Insurance tax and filing fees	8,509.59
Accrued interest on bonds	7,757.08
Real estate tax	609,343.72
Personal-property tax	570,654.55
Carriages, carts, and dray tax	18,148.00
Road tax	99,996.00
School tax	99,996.00
Poll tax	49,998.00
Dogs and tags tax	5,395.50
Penalties and costs tax account	15,429.60
Income tax	157,057.98
Bureau of conveyances	13,615.00
Land registration court	823.22
Rents, public works	38,204.27
Excavator and garbage	8,803.25
Sewerage	13,155.88
Market	1,127.70
Weights and measures	105.65
Land sales, public works	139.85
Waterworks	131,336.90
Wharfage, Honolulu	29,270.34

Pilotage, Honolulu	$21,890.63	
Wharfage and pilotage, other islands	3,696.75	
Kerosene storage	5,910.57	
Powder storage	1,352.09	
Bureau of health	23,316.26	
Judiciary department	75,614.16	
Agriculture and forestry	459.25	
Survey	531.30	
Land sales, public lands	37,253.92	
Land revenue, public lands	130,763.95	
Department of public instruction	6,828.31	
Secretary of the Territory	7,990.25	
Auditing department	223.25	
Miscellaneous realizations	18,156.68	
		$2,354,813.02
Cash balance July 1, 1904		56,613.29
Total receipts		2,411,426.31

DISBURSEMENTS.

Outstanding warrants July 1, 1904, legislative and those drawn by the auditor	$720,093.99	
Departmental expenses July 1, 1904–June 30, 1905, being amount of warrants drawn by the auditing department	1,917,341.16	
Interest on bonded debt	119,236.40	
Interest on registered treasury warrants	19,758.20	
Regular and extra session legislature, 1905	54,679.09	
Transferred to road tax special deposit	118,144.00	
Transferred to land sales special deposit	37,980.71	
Transferred to land sales special deposit, legislative resolution No. 6	761.36	
Unpaid warrants 1898–99	62.19	
		$2,988,057.10
Less receipts		2,411,426.31
Net current indebtedness July 1, 1905		576,630.79

RÉSUMÉ.

Outstanding warrants July 1, 1904	$720,093.99	
Less cash on hand July 1, 1904	56,613.29	
Net floating indebtedness July 1, 1904		$663,480.70
Outstanding warrants, July 1, 1905	636,039.28	
Less cash on hand July 1, 1905	59,408.49	
Net floating indebtedness July 1, 1905		576,630.79
Floating debt reduced during twelve months		86,849.91

During the twelve months included in this report current receipts of the Territory have exceeded the obligations incurred during the same period by $86,849.91, which is in marked contrast to the twelve months' period preceding, where the current receipts were $495,948.91 short of meeting the obligations incurred. Figuring on a conservative basis, the floating indebtedness of $576,630.79, outstanding at the close of the period just passed, will be all paid during the present year, and on June 30, 1906, there will be a cash balance in the treasury.

PUBLIC WORKS DEPARTMENT.

[By C. S. Holloway.]

Since the passage of the county act the department has been practically relieved of all further responsibility for the repair and maintenance of public highways, and the office force was correspondingly reduced. Thus, at the present time the only work done in addition to the regular routine of the department is the completion of those improvements already contracted for

under the previous loan act and such work as the administration may carry out under the proposed loan.

In the carrying out of public improvements it has been the aim of this department to provide permanent structures and secure careful preliminary investigations by competent engineers, especially in the placing of bridges and the locating of new roads.

With the large number of contracts involved in the expenditure of loan money during the past year the routine of this department has been greatly increased. Numerous improvements have been made and new systems put into effect under the direction of the chief clerk. A complete reindexing and filing of the plans in the assistant superintendent's office has been brought about, thus affording easy reference to the records of the office. A system of receiving weekly reports from inspectors on all Government work has been put into operation, particularly to keep in close touch with the work on the other islands, and on the completion of the same the reports furnish a very fair idea of the cost of the contract to the contractor and are valuable for reference.

On account of the large amount of work which it was necessary to have under way before June 30, 1905, at which time the appropriations under the previous loan expired, it was found advisable to appoint an engineer for each island, to have general supervision of all the work in his district and to furnish the data from which plans and specifications were prepared for new undertakings.

Some of the principal improvements under way are as follows:

HONOLULU HARBOR.

In December of last year the contract for the dredging of a new slip at the foot of Alakea street was awarded to Mr. John Walker for $168,000. Owing to delays of various kinds work was not started until after July 1. Preliminary plans have been prepared for new wharves immediately adjacent to the naval docks. On the first wharf the plans provide for a two-story building, so as to facilitate the handling of passengers arriving on the large steamers. The Federal Government has provided for the widening of the channel entrance and the deepening of the inner harbor, but no arrangements have as yet been made for the removal of the shoal on which the light-house is at present located. This work is of the first importance, on account of the difficulty there is at the present time in turning the large steamers at this point.

ROADS AND BRIDGES.

During the past year 80.89 miles of new roads have been constructed, the most important work being the relocating of the main belt roads of the various islands. It has been the endeavor of the department to reduce the grades to a maximum of 6 per cent. Owing to the large rainfall in most of our districts it is necessary to secure good drainage. The surface of the road should be well crowned and top dressed with crushed rock. The use of oil has been found to be advantageous in preventing wash on roads during heavy rains.

SCHOOL BUILDINGS.

The normal school building has been accepted and will be occupied immediately by the department of public instruction. This is a three-story building of brick, having sixteen rooms, and a large assembly hall on the top floor. Ample arrangements have been made for fire protection to the same. In connection with the normal school there are accommodations for a manual department, one room being fitted up for the teaching of cooking and another for the teaching of carpentering.

A list of contracts for the erection of teachers' cottages and schools shows the number built, segregated for each island, to be as follows:

Islands.	Teachers' cottages.	School houses.
Oahu	5	11
Hawaii	7	15
Maui and Molokai	3	12
Kauai	1	9
Total	16	47

RECEIPTS.

Waterworks collections have increased and a large number of the unpaid back rates have been collected. The collection of wharfage during the past year has largely decreased. This is owing to the large amount of sugar shipped direct to New York by steamer, thus using the docks of the Oahu Railway and Land Company. The number of vessels entering this harbor for the past twelve months has been much less than for the preceding year.

The following statement shows the amounts and sources of collections by the Department for the twelve months ended June 30, 1905:

Garbage	$6,845.75	Weights and measures	$105.65
Rents	38,204.27	Market	1,127.70
Sewerage	13,155.88	Realizations	15,728.38
Excavator	1,957.50		
Land sales	139.85	Total	77,264.98

Receipts, by bureaus, from July 1, 1904, to June 30, 1905.

Harbor master:		Waterworks:	
Honolulu—		Honolulu	$115,668.26
Wharfage	$29,270.34	Hilo	6,825.04
Pilotage	21,890.63	Laupahoehoe	42.35
Hilo	1,400.75	Wailuku and Kahului	4,466.80
Kahului	2,296.00	Lahaina	3,042.15
Powder magazine:		Koloa	190.00
Honolulu	1,084.50	Waimea	1,102.30
Hilo	267.59		
Kerosene warehouse:		Total	193,457.28
Honolulu	5,666.70		
Hilo	243.87		

FRANCHISES.

No franchises have been granted during the year ended June 30, 1905, for the construction of railroads in the islands, but it was found necessary to cancel the agreement entered into with the Kohala-Hilo Railroad Company on account of their failure to comply with the conditions stipulating the time work should be started. It was then thought that the Hilo Railway Company, under its blanket franchise, might extend its line into the Hamakua district, but as they would be entirely dependent upon the plantations for freight, it would hardly warrant their constructing the line in these districts without contracts for carrying sugar to Hilo, and a number of the plantations have already made five-year contracts with the Inter-Island Steam Navigation Company. So nothing further will be done for the time being.

LANDS.

There are certain lands which, under the organic act, this department is responsible for. During the past year, when it became necessary to dispose of any portion of these, it was thought best to transfer them to the commissioner of public lands and have them offered for sale by him at public auction. This method was adopted, as all patents are signed by the governor and commissioner of public lands, and it was deemed advisable to have all the proceedings recorded in one office. However, the revised laws passed at the last legislature require the signatures of the governor and superintendent of public works on all patents for lands under the control of this department, so that in future it becomes necessary to issue patents from this office.

Herewith is a list of the lands so treated:

Lands transferred by the public works department to the department of public lands from July 1, 1904, to June 30, 1905.

1904:

November 11—1.82 acres of land at Tantalus, Honolulu, Oahu.
November 11—6,731 square feet of land at Kaalawai, Honolulu.
November 30—2.03 acres of land in Nuuanu Valley, Honolulu.

1905:

January 27—42,500 square feet of land at Kalihi, Honolulu.
January 31—10 acres of land in Kamaole, Kula, Maui.
January 31—712 acres of land in Manoa Valley, Honolulu, being known as Waaloa, Waihi-iki, and Luaalaea.
January 31—1.47 acres of land in Kuhua, Lahaina, Maui.
January 31—26.5 acres of fish pond at Weloka and adjoining Kula.
February 2—748.5 acres of land in Waiomao, Palolo, Oahu.
March 25—159 square feet of land on Richard street, Honolulu, Oahu.
April 20—8,000 square feet of land on Punchbowl Slope.

In the construction of roads and various public works under this department, certain lands have been acquired, and herewith follows a list of the same:

Lands conveyed to the Territory of Hawaii from July 1, 1904, to June 30, 1905, inclusive.

Grantors.	Date.	Amount.	Location.
	1904.		
R. A. Lyman and wife	July 6	$1.00	Convey land required for a new road in the district of Puna, island of Hawaii.
B. P. Bishop estate	July 9	1.00	Conveys land required for the extension of Pauahi street, Honolulu, island of Oahu.
Antone J. Lopez	July 12	373.40	Conveys 1,168 square feet of land required for School street extension, Honolulu, island of Oahu.
Mrs. C. K. Vivichaves and husband.	July 16	644.85	Convey 1,375 square feet of land required for the widening of King street, Honolulu, island of Oahu.
A. S. Wilcox and wife	July 12	[a] 1.00	Convey 19,566 square feet of land required for the approaches to the Kalihiwai Bridge, Kalihiwai, island of Kauai, in exchange for 8.62 acres of government land at Hanalei, island of Kauai.
James H. Boyd and wife	May 10	346.60	Convey 1,733 square feet of land required for the extension of Fort street, Honolulu, island of Oahu.
B. P. Bishop estate	July 21	650.00	Conveys 2 acres of land at Kapalama, Honolulu, island of Oahu, required for Kalihi Reservoir.
John K. Kua and wife	June 28	[b]	Convey land required for a new road at Koali, Hana, island of Maui, in exchange for the portion of the old road abandoned.
James Anahu	Aug. 13	361.00	Conveys one-fifth interest in land required for Hotel street extension, containing an area of 3,608 square feet, Honolulu, island of Oahu.
Malie Kahoopii and husband.	June 15	[b]	Convey land required for a new road at Koali, Hana, island of Maui, in exchange for the portion of the old road abandoned.
H. H. Parker	Aug. 31	280.80	Conveys 1,872 square feet of land required for Hotel street extension, Honolulu, island of Oahu.
Mrs. M. A. Humphreys and husband.	....do...	733.00	Convey 696 square feet of land required for the widening of Nuuanu avenue, Honolulu, island of Oahu.
Emalia K. Nui and husband.	Aug. 15	400.00	Convey 1,090 square feet of land required for the widening of Nuuanu avenue, Honolulu, island of Oahu.
Peter C. Jones (Limited)	Sept. 20	350.00	Convey 8,200 square feet of land required for King street, Honolulu, island of Oahu.
Fred Harrison and wife	Oct. 31	2,091.70	Convey 340 square feet of land required for the widening of Nuuanu avenue, Honolulu, island of Oahu.
James B. Castle and wife	....do...	2,450.00	Convey 44,275 square feet of land required for the extension of Fort and Kuakini streets, Honolulu, island of Oahu.
Mrs. C. F. Macfarlane and husband.	Nov. 2	101.40	Convey 780 square feet of land required for King street widening, Honolulu, island of Oahu.
Mrs. E. M. Nakuina and husband.	May 20	1.00	Convey land required for new road from Pukoo Landing, Molokai, to the main government road.
Kakani	May 23	1.00	Conveys land required for new road from Pukoo Landing, Molokai, to the main government road.
Manuel de Quadros	Dec. 15	821.80	Conveys 587 square feet of land required for the widening of King street, Honolulu, island of Oahu.
W. F. Frear and wife	Dec. 14	1,777.75	Convey 1,265 square feet of land required for the widening of King street, Honolulu, island of Oahu.

[a] And land.

[b] Land.

Lands conveyed to the Territory of Hawaii, etc.—Continued.

Grantors.	Date.	Amount.	Location.
	1904.		
D. M. Lonohiwa et al	Nov. 3	$200.00	Convey 1,350 square feet of land in Hamakua, island of Hawaii, required for a new road.
H. Renjes and wife	Dec. 31	a 1.00	Convey to the Territory of Hawaii 12,101 square feet of land required for School street extension, Honolulu, island of Oahu, in exchange for 13,225 square feet of government land in same locality.
	1905.		
B. P. Bishop estate	Jan. 16	1.00	Conveys 343 square feet of land required for Fort street extension, Honolulu, island of Oahu.
M. B. da Silveira and wife	Feb. 8	600.00	Convey 188 square feet of land required for the widening of Nuuanu avenue, Honolulu, island of Oahu.
Mrs. H. Fishel and husband	Mar. 2	201.50	Convey 403 square feet of land required for the widening of Beretania avenue, Honolulu, island of Oahu.
John Broad et al	....do...	573.90	Convey 3,826 square feet of land required for Kukui street extension, Honolulu, island of Oahu.
E. S. Cunha and wife	Mar. 13	a 1.00	Convey 2 pieces of land on Vineyard street, area 2,578 square feet, valued at 20 cents per square foot, in exchange for 2 pieces of government land situate on Maunakea street containing an area of 412 square feet, valued at $1.25 per square foot.
Mrs. A. E. Cunha and husband.	....do...	a 1.00	Convey 1,752 square feet of land required for the extension of Smith street, Honolulu, valued at $1.25 per square foot, in exchange for a piece of government land in same locality containing 1,752 square feet, valued at $1.25 per square foot.
Mele Kaholelua	Mar. 14	986.25	Conveys 6,575 square feet of land required for Kukui street extension, Honolulu, island of Oahu.
Mrs. E. S. Aseu and husband.	....do...	180.30	Conveys 1,202 square feet of land required for Kukui street extension, Honolulu, island of Oahu.
H. Auld and wife	Mar. 21	35.00	Convey one sixty-fourth interest in land taken for the widening of Waikiki road, Honolulu, island of Oahu.
B. P. Bishop estate	Feb. 28	1.00	Conveys 216,201 square feet of land required for School street extension, Honolulu, island of Oahu.
Mrs. H. M. Place and husband.	Apr. 12	1.00	Convey 4,006 square feet of land required for Kukui street extension, Honolulu, island of Oahu.
William Mahuka and wife	May 3	492.00	Convey 3,280 square feet of land required for Kukui street extension, Honolulu, island of Oahu.
H. A. Heen	May 19	1,012.50	Conveys 6,750 square feet of land required for Kukui street extension, Honolulu, island of Oahu.
Hawaiian Agricultural Co.	May 26	1.00	Conveys 0.48 acre of land for court-house and jail site at Pahala, Kau, island of Hawaii.
Mary Kahai	Apr. 7	1,087.00	Conveys 870 feet of land taken for the widening of Maunakea street, Honolulu, island of Oahu.
American Board of Commissioners of Foreign Missions.	June 23	1,000.00	Conveys 1,958 square feet of land taken for the widening of Beretania avenue, Honolulu, island of Oahu.
Mrs. Fanny Love et al	Apr. 13	2,348.75	Convey 1,480 square feet of land taken for Pauahi street extension, Honolulu, island of Oahu.
Annie K. Akong	June 26	547.50	Conveys 1,095 square feet of land taken for the extension of Beretania avenue, Honolulu, island of Oahu.
John Broad et al	....do...	45.00	Convey 300 square feet of land taken on Kukui street extension, Honolulu, island of Oahu.
B. P. Bishop estate	May 25	432.25	Conveys 57,646 square feet of land required for the Kalihi Reservoir, Honolulu, island of Oahu.
Eliza K. Palama	June 30	50.00	Conveys land for a 50-foot right of way through L. C. A., 4,094 feet, Kawaihae, South Kohala, island of Hawaii.

a And land.

DISPOSITION OF LOAN MONEYS.

[By J. H. Howland.]

At the special session of the legislature in 1903 appropriations for the department of public works were passed amounting to $2,397,270.75. The sum of $2,000,000 was finally borrowed, it having been deemed advisable to limit the

bond issue to this amount. Of this sum $1,965,680 had been expended at the expiration of the period ended June 30, 1905.

The following table will show the sums of money expended upon each of the general works of construction:

Recapitulation.

	Contracts.	Other expenditures.
Wharves and harbors[a]	$348,819.31	$22,353.83
Public buildings	158,103.93	44,706.35
Electric light	35,579.12	10,420.88
Waterworks[a]	212,940.96	147,070.28
Storm sewers	10,495.98	9,483.84
Sanitary sewers[a]	78,869.73	11,148.27
Educational buildings:		
Oahu	144,127.89	12,895.61
Hawaii	39,670.48	4,081.52
Maui, etc	79,238.29	5,761.71
Kauai	25,966.24	3,396.33
Roads and bridges	372,693.45	187,856.00
Total	1,506,505.38	459,174.62
Grand total		1,965,680.00
Cash available next period		34,320.00
Borrowed		2,000,000.00

[a] Revenue producing.

Only three of the above-listed public works are directly revenue producing, viz, waterworks, wharves and harbors, and sanitary sewers. It would be of interest in a consideration of the loan moneys expended upon these three works of construction to refer to the following table, which shows the receipts as well as the expenditures made from current appropriations for maintenance and repairs for each of the last four years:

Year ending June 30—	Waterworks.		Wharves and harbors		Sewers.	
	Receipts.	Running expenses.	Receipts.	Maintenance and repairs.	Receipts.	Maintenance and repairs.
1902	$97,501.15	$59,214.98	$91,650.71	$21,570.23	$13,999.83	$13,741.59
1903	102,841.85	36,316.12	70,305.52	33,855.04	12,643.98	19,413.00
1904	103,316.02	36,362.17	66,210.73	10,713.94	6,767.26	9,720.27
1905	115,668.26	38,265.62	51,160.97	9,358.63	13,155.88	16,706.79
Total	419,327.28	161,158.89	279,327.93	75,497.84	46,566.95	59,581.65

As will be seen from the above table, the annual receipts from the waterworks have increased from over $97,000 in 1902 to over $115,000 in 1905, while the expenditures have decreased from approximately $50,000 in 1902 to approximately $38,000 in 1905. The running expenses of the waterworks at the present time are still very high, due to the excessive cost of pumping water, which is unavoidable with the system as it is at present. The loan moneys expended for improvements in this Department have been made with the eventuality constantly in view of supplementing the pumps with a purely gravity system, which unquestionably can be developed so as to furnish an adequate, suitable economical supply.

The adjustment of the existing defective distributing system to changed conditions should receive no check, and funds appropriated for extensions and improvements must be intelligently expended within the lines of the conceived plan rather than in the haphazard patching up of a defective system. If this is done, large sums of moneys will be saved which are now expended upon running expenses. Figures show that a reservoir built in Kalihi Valley at an approximate cost of $100,000 would pay for itself in five years with the moneys saved in operating expenses at the pumping stations. The Nuuanu Reservoir now being constructed is inadequate, as a sole supply, to the city of Honolulu,

and for extended periods of drouth the supply would need to be augmented by pumping, unless other reservoirs or supplies allowed this new reservoir to be held in reserve during the first portion of a drouth.

While the urgent demands of the situation would not seem to point to an immediate radical revision of the entire system, a thorough investigation shows up the inefficiency of that system in its present condition and certainly warrants the expenditure of the loan moneys that have already been used, as well as those that have been appropriated under the new loan bill. As was shown in previous reports, with an appropriation of $300,000 in addition to the moneys already expended and the appropriations made at this last session of the legislature an adequate gravity supply is insured, resulting in an annual saving of over $50,000. A large part of this estimated saving would not appear on the waterworks books, but would indirectly be saved by the taxpayers, as will be seen upon referring to a report which was previously prepared upon this subject, a copy of which is herewith presented. We contemplate, with the waterworks appropriations made available under this last loan bill, being able to complete the large reservoir at the head of the Nuuanu Valley, the effluent pipe from same down to the newly completed electric power station, to materially improve the lower, or No. 1, reservoir, and to make the necessary and important alterations and extensions in the adjustment of the distributing system. With this work completed, much the larger portion of the work of revision will have been accomplished toward the achievement of this gravity supply for Honolulu. With the additional appropriation above referred to the system may be completed, so that the saving of $50,000 per year may be realized.

As will be seen upon referring to the receipts from "wharves and harbor," the conditions have materially changed in the last four years. The receipts are decreasing from year to year, due to the fact that the number of sailing vessels entering this port have decreased of late years to a very great extent. Many of the coal ships have been replaced by oil vessels, all of which go to the railroad wharves. A few large steamers now handle freight formerly carried by a much larger number of sailing vessels. Vessels carrying fertilizer, oil, general merchandise for the plantations, etc., all go to the railroad wharves, where the facilities permit of a more economical handling of the freight. None of the Territorial wharves to-day are suitable to accommodate the larger steamers now entering the port of Honolulu. It is therefore important to provide such accommodations as soon as possible. Out of the loan moneys already expended, the Fort street wharf has already been constructed, the brewer wharf is well under way, and the Alakea street slip will have been completed in the early part of this next year. In order to dock the large steamers which now handle the bulk of the commerce upon the Pacific, and which have displaced so many of the sailing vessels, it is absolutely necessary to build much longer slips and to construct larger wharves, with spacious shed areas.

We contemplate constructing during this present period a large wharf directly abjoining the navy wharf No. 2, and a still larger wharf between the Alakea and Kilauea street slips. In addition to the dredging of the Alakea street slip, which is now well under way, it is proposed to excavate one-half of the Kilauea street slip, thereby providing for three long berths in every way suitable to accommodate the largest steamers. All of this work, it is believed, can be accomplished with the moneys already appropriated under this new loan bill, amounting to $300,000. When these extensive improvements are completed, the Territory will undoubtedly be able to supply all demands in the way of wharfage which the commerce upon the Pacific will be likely to require for at least the next five years. The tearing up of the old Pacific Mail wharf has made it necessary for several of the large vessels to go to the navy wharves, which lost revenue, as well as that from other large steamers and sailing vessels, would be realized by the Territory upon completion of these large slips and wharves.

The expenditures shown in the table and made from current moneys for the "maintenance and repairs to the Honolulu sewerage systems" include the cost of keeping up both the sanitary sewers and the storm drains, the first of which only are revenue producing. The figures as given, covering both systems, are therefore somewhat misleading. Even these figures do not show a fair relation between probable receipts and expenditures upon both systems, from the fact that up to within one year ago we had no law which made sewer rates a lien upon the property, and a large proportion of sewer rates therefore remained unpaid. The running expenses of the sewerage pumping station, which accounts for so large a proportion of the annual expense in the "maintenance of the sewerage systems," will, no doubt, be very materially reduced

when oil is introduced as a fuel and new electric engines are installed, as the engines which are now in use in this station are not of an economical type and are in poor condition. The necessary current appropriations have already been made, which, when expended, will result in a considerable saving in the running expenses at this station. The general appropriations for all islands made on account of the loan fund for this period did not include those necessary to make extensions to the sewerage and storm-drain systems which are so necessary in order to complete the general system as originally laid out, together with extensions that have become necessary since the plans were first prepared.

HONOLULU WATER SUPPLY.

[By J. H. Howland.]

What are the possibilities in the future development of an adequate, suitable, and economical gravity supply for the city of Honolulu?

What increase in the net revenues would we realize in such an achievement?

Would the advantages resulting from the perfection of such a system outweigh the disadvantages?

This is by no means the first time this subject of water supply has been brought up here, though it is surprising that it should have excited so little attention. After some careful consideration, together with a thorough investigation into the possibilities at the heads of these valleys, so admirably located back of Honolulu, there is no question but that with the construction of large storage reservoirs the result would be the final achievement of an ample gravity supply of excellent quality, and a system in which the cost of maintenance is reduced to a minimum.

Mr. S. G. Walker has just completed a very thorough investigation into the possibilities in the upper Nuuanu Valley, and, besides submitting a full set of plans for dam, reservoir, and pipe line down to the new electric power station, has filed reports plainly showing just what can be expected from this source. We have at the present time a consuming population of about 37,000, and the mean daily consumption is approximately 7,500,000 gallons, or a per capita consumption of about 200 gallons per twenty-four hours. The present high rate of consumption is admittedly unwarranted, and may be very materially reduced (probably below 150 gallons per capita) by a rigid house-to-house inspection, thorough search for leaks in reservoirs and street mains, together with a moderate installation of meters. Disregarding this lowering of the per capita consumption, we find from diagrams and reports submitted by Mr. Walker that the new 450,000,000-gallon reservoir in Nuuanu Valley, together with the proposed improvements to No. 1 reservoir so as to contain 50,000,000 gallons, would yield a continuous flow, with two exceptions, of at least 5,250,000 gallons per twenty-four hours throughout the last fifteen years (the period covered by the rain records), or about 71 per cent of the entire consumption.

In addition to these improvements in the Nuuanu Valley, which are already provided for, should we continue and make similar improvements in the Kalihi Valley, the next largest and next best fitted for impounding a large quantity of water, we would be able to depend on a continuous supply of about 10 per cent in excess of the present consumption, except in short periods of extraordinary droughts, which, as inferred above, happened twice in the past fifteen years. A preliminary survey of an excellent reservoir site at the very head of the Kalihi Valley is conclusive that at an estimated cost of $100,000 we can obtain a storage capacity of approximately 275,000,000 gallons of water. To this cost add $150,000 for the laying of a large affluent pipe down the valley and connecting it up with the general distributing system at King street, and the system is made adequate to meet the present requirements. An additional supply could be obtained from the Makiki Valley at a comparatively small cost ($50,000), which, although of much less value than either of the Nuuanu or Kalihi sources, would serve an important function in tending to equalize the pressure in the outer or Makiki portions of the system by being so arranged that the water could be drawn from it only at such times as the pressure might be drawn down below the normal. Thus it is seen that with an expenditure of approximately $300,000 (not thus far provided for) an adequate supply is insured.

That a remarkable saving to the Territory would be realized through the perfection of such a gravity system will be readily seen from a review of the following facts:

One of the most important provinces of a waterworks system is the extinguishing of fires. The best authorities on the subject of fire protection are unanimous in their opinion that there is no system of water supply that is in any way equal to that of a gravity supply, with an abundant pressure at the hydrants (80 pounds per square inch), connected up with street mains from 6 inches in diameter upward. Such conditions might readily be realized here in Honolulu and would certainly insure prompt action with corresponding efficiency in case of fires. From the most reliable data that could be obtained, it is safe to say that not less than $250,000 is paid in annually as premiums on fire insurance here in Honolulu alone, and with the installation of an adequate gravity water supply, that at least 5 per cent of this amount, or $12,500, would be saved each year by the property owners and taxpayers, who through high insurance eventually pay for their own heavy losses, the rates being primarily fixed and controlled by the amount of fire losses. The excessive pressure which we would have on our downtown mains if the water were admitted directly into the system from the reservoirs at the heads of the valleys may be modified as desired by the introduction of reducing valves where the smaller mains branch out from the larger ones.

While the present pumping plants might be used to supplement the gravity supply in times of exceptional drought (twice in the last fifteen years), or extraordinary consumption, due to large fires, practically all of the running expenses in connection with these plants could be saved. As is shown from the figures covering the expense incurred during the past twelve months, this would amount to fully $32,000 each year. With these pumping plants kept in good repair as an auxiliary supply to that of the gravity system, we would have an ideal water supply both for domestic use and fire protection.

The government is, at the present time, running 130 arc lights, but is unable with the present power plant in Nuuanu Valley to furnish sufficient current for the remaining 70 arc lights which, together with the above, light the streets of Honolulu. Our inability to run these 70 arc lights costs the Territory $6,000 per year. With the completion of the new electric power station, this annual expense would be saved, inasmuch as with an assumed minimum draft of 3,000,000 gallons per twenty-four hours we will be able to furnish an average of 700 actual horsepower, distributed over a period of eight hours, which amount is ample for the present demands, with a considerable margin of growth. By putting in another electrical unit, in addition to the one already provided for in this new station, the government would be able to run 400 arc lights if necessary, besides having ample power to run an electric engine at the sewage pumping station, which would result in a further saving of not less than $250 per month, or $3,000 annually. With the Nuuanu source alone we could not depend on a supply sufficient to develop this power, but with the additional sources made available to help out on the daily consumption we would seldom feel restricted in the use of the necessary quantity of water desired.

After making a careful canvass in the upper portions of these valleys, it is estimated that an additional revenue might be received from those at present not supplied with government water, on account of their being located at too high an elevation, a sum of not less than $1,000 per annum.

It is evident from the above that with the achievement of an adequate gravity supply a very material increase in the net revenue would be realized, and that with an expenditure of some $300,000 we would make an annual saving of over $54,000, or an 18 per cent investment. Is it not a good business proposition for the government to entertain? Would a private company take it up.

With the installation of such gravity system of water supply the cost of maintenance would be reduced to a minimum, and would certainly tend to decrease the burden on those paying water rates.

That the direct advantages would outweigh the disadvantages with the perfection of such a system is unquestioned. The only disadvantages that would be experienced would be at times of exceptional drought, when the valley waters might become more or less turbid and carry in suspension particles of freshwater algæ, which grows much more readily in shallow and necessarily warmer water. Trouble from either of these sources, however, would be very infrequent, as the reservoirs would seldom be drawn down low enough to affect the quality of the water. There has been in the past a disposition to question the advisability of having to depend solely on valley waters for domestic use, and that the pump or artesian water was much the more preferable. At the request of Mr. Walker, chemical examinations were made, indicating that the water

at the valley sources is very satisfactory in quality, and unquestionably will provide a safe and suitable source of supply for the city use. These analyses indicate that the organic matter increases as the course of the water is followed from the various sources at the head of the Nuuanu Valley down to the No. 1 reservoir, which is to be expected when the surrounding facts are taken into consideration, and the appearance of the water is not improved by its flowing a mile or more in shallow, open channel.

It is certainly a subject for congratulation that in this case the possibility of animal pollution, by far the most dangerous element affecting a water supply, is by the location of the watersheds and proposed reservoirs practically eliminated. The quality of the water stored in reservoirs such as it is proposed to construct near the sources would unquestionably be far superior to that in the present reservoirs located farther down the Nuuanu Valley, which are of inferior design and construction.

Altogether, the adjustment of the existing defective system by proposed improvements along the lines suggested and which would eventually result in the achievement of an adequate, suitable, and economical gravity supply for Honolulu, is one of the most important problems in the way of public improvements that has thus far been brought up. It is to be hoped that this work, already started and undertaken, may receive no check and that it may be perfected within a reasonably short time. Should we not make what may seem at the present time extraordinary expenditures for these permanent improvements, which will be of material benefit to those living in Honolulu in future years?

PUBLIC LANDS AND THEIR ADMINISTRATION.

[By J. W. Pratt.]

In an article on "Public lands and land laws" in the governor's report for 1904 is a brief description of the divisions of public lands and how they were brought about; also a digest of the present land laws.

RECORD OF PAST YEAR'S WORK.

During the past year those in charge of the department of public lands have endeavored to dispose of unfinished business and to institute an up-to-date system in handling all land matters.

All accounts overdue have been placed in the hands of the attorney-general for collection. All land areas have been carefully checked and lists of lands revised. The various section books and maps of lands opened for settlement have been carefully checked up and lists compiled of all unoccupied lots or parcels of land. The cases of those settlers who appeared to have forfeited their holdings through noncompliance with conditions of agreements have been taken up and examined, and all agreements canceled in the cases of those who have willfully violated the law, and the land which has thus reverted to the control of the Territory has been again opened for settlement. On the other hand, the right to cancel has been waived for the time being in the cases of those who have failed to comply, but have shown that this failure was brought about by conditions beyond their control.

NEW FEATURES AND DIFFICULTIES.

A new feature of the work of those responsible for the administration of public lands in Hawaii is the cutting up of sugar lands that have been planted for years under leases by various corporations, some of which are now expiring. The opening of these lands must necessarily be proceeded with in a cautious manner. They have a market value of from $40 to $150 per acre, and there is therefore a great demand for them. The applicants in a large majority of cases have no means with which to keep the land under cultivation. This is no inconsiderable item, for sugar culture as conducted in this Territory requires from $150 to $200 outlay per acre before the crop can be matured. Thus with many of the applicants there is a prospect of seeing good cane fields lapse into jungles again, unless the capitalist meets the demand of the so-called settlers and buys them out, or takes a mortgage for the funds necessary to plant, cultivate, and harvest the crop.

With many of the small plots of land a lack of transportation facilities and a market for products other than sugar on the one side of the case, as against the fact that a ready and convenient market is at hand for all sugar cane, renders cane planting the only use the settler of such lands can put his soil to and be assured of anywhere near satisfactory results at the end of the season.

In this connection it should be understood that a "season" in the cane field means a period of from eighteen months to three years, according to the altitude of the land, and the farmer from the mainland, who has been in the habit of taking off his crops from three to five months from time of planting, is often discouraged here when he finds that he must wait from one and a half to four years for a crop of sugar cane, bananas, pineapples, coffee, or sisal.

A SIGNIFICANT FACT.

It is greatly to the credit of some of our most advanced sugar planters that they have signified their approval of the opening of lands to bona fide settlers and their willingness to assist these people by giving them employment, and in some cases by advancing the necessary funds to develop the lands taken up, provided the settlers will agree to occupy the land for a period of years and actually cultivate it.

AREA TO BE ALLOTTED.

There has been considerable complaint at the attitude taken by Territorial officials in reducing the area open for settlement to small tracts from 25 to 50 acres, according to the quality of the land; but it should be borne in mind that the average cane land requires the constant attention of one man for every 7 acres, and often the applicant who considers he has been mistreated unless he is allotted from 75 to 100 or more acres is absolutely ignorant regarding cane culture or he proposes to depend on oriental labor to cultivate it. Sometimes he does not propose to cultivate it at all—simply to get possession to sell out at the best price possible. These conditions show the difficulty of administering this department judiciously.

RECOMMENDED CHANGES IN THE ORGANIC ACT.

In connection with the statement made above, regarding the length of time necessary to take off a crop in the Tropics, attention should be called to that portion of the organic act limiting the term of a lease of agricultural land to five years.

It can be truthfully stated that there is nothing in the law which covers our Territory that is a greater hinderance in developing our lands and retarding our progress than this limit of time in which argricultural lands can be leased. Thousands of acres of what should be good agricultural land producing crops of some kind are covered by a thick jungle of weeds. Land that is under cultivation if left idle is soon taken possession of by a growth of vegetation which is unequaled elsewhere and the cost of clearing this land is often from $20 to $80 per acre. This expense is practically prohibitive to the prospective settler without funds, and those with means will not take such lands under a five-year lease, for at best they can get off but two crops before the lease expires and the land leaves their control. Few have sufficient means to purchase the land outright and carry themselves through until they can secure returns from their crops. Therefore much of the land lies idle, of no use to anyone. The term of leases covering the agricultural lands in these islands should be a multiple of four, and there is no question but that the law should allow leasing of all undeveloped land for a term of eight to twelve years (preferably twelve). This may appear to be a long time, but still it would be a definite time, while if the present condition continues the lands are tied up indefinitely.

Another limitation in the land law that should receive attention, with a view to altering the same, is that section which limits the quantity of land that can be sold in any one block. The Government owns many acres of barren waste lands, much of it without the slightest sign of vegetation—nothing but the rough clinkers of former lava flows. Then again there are many ancient flows where vegetation is just beginning—ferns and grasses are appearing in the crevices; in fact, from the one extreme there are various grades up to those lands that are rich and fertile.

Thus the public lands in Hawaii are classified by law as follows:

AGRICULTURAL LANDS.

1. *First class.*—Land suitable for the cultivation of fruit, coffee, sugar, or other perennial crops with or without irrigation.
2. *Second class.*—Land suitable for the cultivation of annual crops only.
3. *Third class.*—Wet lands such as kalo and rice lands.

PASTORAL LAND.

4. *First class.*—Land not in the description of agricultural land, but capable of carrying live stock the year through.
5. *Second class.*—Land capable of carrying live stock only part of the year, or otherwise inferior to first-class pastoral land.

PASTORAL AGRICULTURAL LAND.

6. Land adapted in part for pasturage and in part for cultivation.

FOREST LAND.

7. Land producing forest trees, but unsuitable for cultivation.

WASTE LAND.

8. Land not included in the other classes.

If land is sold for cash outright at public auction, the quantity to be sold in any class of land can not exceed 1,000 acres. If the sale is to be made on any other terms, such as deferred payment, then the limit is but 600 acres, and in either case there is no reference to the kind of land.

Much of the waste land could perhaps be used for sheep or fancy breeds of goats, with an outlay of capital for sowing the same with grass seeds, but no one cares to undertake this outlay on so small an area as a thousand acres. It will greatly facilitate many of the problems which confront the officials in charge of these lands if the limitations as to the quantity of land to be sold were left to the discretion of the commissioner of public lands, subject to the approval of the governor. If this suggestion, however, does not meet with the approval of Congress, then it would be better to have the limitations as to the amount that can be sold graded as to the classification provided for by law, and the following limitations would be far more suitable than those at present in existence:

Agricultural: (1) First class, limit 100 acres; (2) second class, limit 200 acres; (3) third class, limit 20 acres. Pastoral: (4) First class, limit 1,000 acres; (5) second class, limit 5,000 acres. (6) Pastoral-agricultural: Limit 500 acres. (7) Forest: To be sold only in such quantities as may be approved by board of agriculture and forestry. (8) Waste: No limit. This would facilitate the handling of the poorer classes of land.

DISPOSITIONS OF LANDS DURING THE YEAR.

OPENED FOR SETTLEMENT.

The following lands were opened for settlement:

Twenty-two lots, under homestead leases, Hanalei, Kauai. All taken.

Twenty-two lots, under right of purchase leases, Pupukea, Oahu. Sixteen taken.

Twenty-two lots under right of purchase leases, Homonu, Hawaii. Eighteen taken.

Twenty lots, under right of purchase leases, Palolo, Oahu. All taken.

Fourteen lots, under homestead leases, Palolo, Oahu. All taken.

Twenty lots, under cash freeholds, Palolo, Oahu. Fourteen taken.

At the present time the survey department is laying out roads and plotting small tracts, from 1 to 2 acres in extent, of about 1,000 acres of land within 3 miles from the post-office in Honolulu. It is hoped these small areas will be suitable for grape culture and garden truck, as well as furnishing suburban homes.

RECEIVED FROM OTHER DEPARTMENTS.

The following lands have been transferred by the department of public works to the department of public lands:

1. November 11, 1904. 1.82 acres of land at Tantalus, Honolulu, Oahu.
2. November 11, 1904. 6,731 square feet of land at Kaalawai, Honolulu.
3. November 30, 1904. 2.03 acres of land in Nuuanu Valley, Honolulu.
4. January 27, 1905. 42,500 square feet of land at Kalihi, Honolulu.
5. January 31, 1905. 10 acres of land in Kamaole, Kula, Maui.
6. January 31, 1905. 712 acres of land in Manoa Valley, Honolulu, being known as Waaloa, Waihi-iki, and Luaalaea.
7. January 31, 1905. 1.47 acres of land in Kuhua, Lahaina, Maui.
8. January 31, 1905. 26.5 acres of fish pond at Weloka, and adjoining Kula.
9. February 2, 1905. 748.5 acres of land in Waiomao, Palolo, Oahu.
10. March 25, 1905. 159 square feet of land on Richard street, Honolulu, Oahu.
11. April 20, 1905. 8,000 square feet of land on Punchbowl Slope.

The foregoing lands have been disposed of as follows:

Lot 1, 1.82 acres land at Tantalus. Pursuant to request of superintendent of public works, this land was advertised for sale at public auction at upset of $1,000 per acre; it was put up at upset of $1,820, and sold to E. H. Wodehouse for $1,821.

Lot 2, 6,731 square feet of land at Kaalawai. Pursuant to request of superintendent of public works, this land was advertised for sale at public auction at upset of 5 cents per square foot ($336.55), and sold to Charles F. Peterson for $337.55.

Lot 3, 2.03 acres land in Nuuanu Valley. Pursuant to request of superintendent of puubliс works, this land was advertised for sale at public auction at upset price of $1,500, and sold to P. C. Jones, esq., at that figure.

Lot 4, 42,500 square feet of land at Kalihi. Pursuant to request of superintendent of public works, this land was advertised for sale at public auction at upset price of $600, and sold to Wilhelm H. Kuhlmann at that figure.

Lots 5, 6, 7, and 8 still in hands of this department. No. 8 is held by Mrs. Frear under an old lease.

Lot 9, 748.5 acres land, Palolo, Oahu. Three hundred and ten acres of this land has been cut up into lots and taken up under R. P. and homestead leases. The balance, say, 438 acres, has been reserved, and will probably be included in Oahu Forest Reserve.

Lot 10, 159 square feet of land on Richard street, Honolulu. Pursuant to request of superintendent of public works, this land was advertised for sale at public auction at upset of $2 per square foot ($318), and sold to August Drier at that figure.

Lot 11, 8,000 square feet of land on Punchbowl Slope. Pursuant to request of superintendent of public works, this land was advertised for sale at public auction at upset of 7 cents per square foot ($560), and sold to August Drier at that figure.

SUGGESTIONS TO PROSPECTIVE SETTLERS.

To insure success as cultivators of the soil, with agreeable and acceptable neighbors, the prospective settlers on the public lands of this Territory should form settlement or cooperative associations, taking up tracts of land sufficiently large to insure employment for all, and upon receiving applications from associations of this kind the land can be cut up into lots of such shape and size (within prescribed limits) as each individual member may desire, and the members of the association have first choice of lots as against outside applicants.

By cooperating the association is able to cultivate a larger area of land than the same number of individuals could hope to handle separately, and there are many other advantages in this method of acquiring lands, which so far has proven the most successful.

In connection therewith it may be of interest to furnish the following table

of lands available for such settlement, after which appear the usual tables from the lands department and transactions connected therewith:

Lands available for settlement, lease, sale, or other disposition each year, from 1905 to 1926.

[Not under lease, 400,809.65 acres.]

Expiration of lease.	Land available.	Annual rent.	Expiration of lease.	Land available.	Annual rent.
	Acres.			*Acres.*	
1905	5,528.00	$735.00	1919	20,639.43	$6,187.00
1906	256,762.40	17,749.20	1920	68,993.47	8,304.00
1907	224,203.43	8,446.00	1921	57,300.00	1,100.00
1908	131,568.16	8,645.12	1923	51,750.00	5,900.00
1909	25,312.60	7,859.75	1924	13,799.49	276.75
1910	5,696.08	2,146.00	1925	8,293.50	1,291.60
1911	41,334.50	2,830.00	1926	4,800.00	322.00
1912	14,100.68	3,190.50	1928	(a)	500.00
1913	109,510.02	8,922.00	1930	(a)	10.00
1914	15,398.25	1,770.00	1939	(a)	20.00
1915	1,626.46	710.00	1948	(a)	3,010.00
1916	17,369.00	5,500.00	1954	(a)	1,000.00
1917	78,300.00	3,955.00			
1918	165,065.50	6,081.00	Total	1,719,160.62	106,460.32

[a] Water license.

Lots surveyed and available for settlement—Island of Hawaii.

FIRST LAND DISTRICT, PUNA AND HILO.

Map No.	Location.	Lots untaken.	Area.	Appraised value.	Remarks.
			Acres.		
17	Kupahua, Puna, Hawaii	2	37.00	$81.50	Mixed agricultural.
2	Kaimu Section, Puna, Hawaii	7	354.30	1,325.40	Mixed agricultural and pastoral.
32	Kaimu Makena, Puna, Hawaii	10	284.54	316.91	Do.
33	Kaimu Kalapana, Puna, Hawaii.	1	12.70	38.10	Agricultural and pastoral land.
34	Kikala-Keokea, Puna, Hawaii	11	770.75	642.75	Pastoral and waste land.
40	Keonepoko-iki	18	175.04	417.22	Waste and forest land.
35	Keanohana, Kehena, Keekee, and Kamaili.	9	484.66	312.99	Pastoral and forest land.
16	Opihikao	1	104.60		
3	Ponahawai, Hilo, Hawaii	1	98.20	491.10	Do.
13	Kaiwiki, Hilo, Hawaii	5	201.50	1,612.00	Agricultural land.
22	Maulua, Hilo, Hawaii	2	12.70	190.50	Do.
14	Kaohe, Puna, Hawaii	4	322.76	1,858.25	Mixed agricultural and forest.
23	Brugehelli Settlement Association.	5	1,000.00	3,000.00	First-class pastoral land.
23	Kilauea Settlement Association.	1	200.00	600.00	Do.
23	Lewis Settlement Association, Hawaii,	1	12.30	98.40	Mixed agricultural.
23	27½-mile tract, Hawaii	10	2,000.00	6,000.00	Do.
23	Otto Rose Settlement Association.	8	1,600.00	4,800.00	Do.
23	Olaa new tract	272	13,480.46	74,615.12	Do.
23	Olaa reservation	11	392.75	480.00	Mixed agricultural and pastoral.
22	Nanawale	1	3.65	21.90	Do.
2	Kamaili	3	190.30	827.95	Do.
	Honomu, Hilo	4	125.36	1,730.91	Do.
	Total	387	21,863.57	99,460.27	

Lots surveyed and available for settlement—Island of Hawaii—Continued.

SECOND LAND DISTRICT.

Map No.	Location.	Lots untaken.	Area.	Appraised value.
			Acres.	
12	Niupea, Hamakua	2	88.47	$792.36
26	Kaauhuhu, Hamakua	2	42.80	129.00
15	Puukapu, Waimea	18	236.08	470.84
27A	Kaapahu and Pohakea	39	853.50	6,718.00
18	Ahualoa, Hamakua	1	20.80	156.00
10	Ahualoa, Honokaa section	1	100.00	----------
11	Paauilo, Hamakua	2	124.00	----------
37	Kaauhuhu, N. Kohala	9	71.31	----------
18	Awini, N. Kohala	2	159.40	637.60
	Total	76	1,696.36	8,903.80

THIRD LAND DISTRICT.

6	Kohanaiki, Hamanamana, and Kalaoa, N. Kona	2	4.07	$122.30
14	Kaulana section	4	132.17	278.62
17	Ninole and Wailau, Kau	5	86.11	357.18
25	Kalamakowali	2	33.30	333.00
26	Olelomoana and Opihihali 1 and 2	3	85.70	332.70
27	Kukuiopae	2	33.20	84.56
2176	Kiolakaa and Keaa, Kau	5	159.90	412.95
36	Papa, S. Kona	11	80.01	----------
	Kalaoa and Ooma	6	737.5	229.97
	Total	38	1,351.96	2,151.28

Islands of Maui, Molokai and Lanai.

FOURTH LAND DISTRICT.

Map No.	Location.	Lots untaken.	Area.	Appraised value.
			Acres.	
7	Pulehuiki and Kamehameiki	3	33.84	$92.50
13	Waiakoa, Kula	7	123.00	482.09
23	Kamiloloa, Molokai	1	20.00	45.00
24	Hoolehua, Molokai	5	76.14	350.00
20	Nahiku, Koolau, Maui	2	59.40	68.10
20A	Nahiku, Koolau, Homestead	2	10.30	----------
9	Kahakuloa, Maui	9	786.75	1,017.00
9A	Kahakuloa, Homestead	29	3.34	358.70
1	Kaupo, Maui	8	210.87	386.82
	Total	66	1,323.64	2,800.21

Island of Oahu.

FIFTH LAND DISTRICT.

Location.	Lots untaken.	Area.	Appraised value.
		Acres.	
Pupukea, Paumalu, Oahu	4	646.46	$8,080.75
Pukele, Makai, Palolo	6	12.18	1,065.00
Hauula beach lots, Koolau	13	3.96	----------
Total	23	662.60	9,145.75

Island of Oahu—Continued.

SUMMARY.

Land district.	Number of lots.	Area.	Appraised value.
		Acres.	
First	387	21,863.57	$99,460.27
Second	75	1,696.36	8,903.80
Third	38	1,351.96	2,151.28
Fourth	66	1,323.64	2,800.21
Fifth	23	662.60	9,145.75
Total	590	26,898.13	122,461.31

Receipts of the public lands department for the year ended June 30, 1905.

LAND REVENUE.

Rents:		
General leases	$119,540.59	
Right of purchase leases	7,027.80	
Olaa leases	1,316.73	
Puukapu leases	3.00	
Kaimu leases	29.95	
Interest:		
Homesteads	53.10	
Special agreements	1,683.05	
Cash freeholds	124.22	
Olaa agreements	301.62	
Office fees	358.90	
Patent fees	325.00	
		$130,763.96

LAND SALES.

Purchase right of purchase leases	3,835.93	
Purchase Olaa agreements	856.35	
Purchase homesteads	128.80	
Purchase special agreements	10,818.50	
Purchase cash freeholds	742.12	
Cash sales "auction"	19,112.15	
Government commutation fees	1,734.82	
		37,228.67
Government realizations		402.10
Total		168,394.73

Comparative statement of receipts.

	Twelve months to June 30, 1904.	Twelve months to June 30, 1905.
RENTS.		
General leases	$112,543.81	$119,540.59
Right-of-purchase leases	8,230.40	7,027.80
Olaa leases	726.34	1,316.73
Puukapu leases	34.91	3.00
Kaimu leases	14.48	29.95
Miscellaneous	1,248.00	----------
Total	122,797.94	127,918.07
INTEREST.		
Homesteads	309.10	53.10
Special agreements	659.72	1,683.05
Cash freeholds	50.18	124.22
Olaa agreements	84.30	301.62
Office fees	314.80	358.90
Patent fees	195.00	325.00
Total	1,613.10	2,845.89

Comparative statement of receipts—Continued.

	Twelve months to June 30, 1904.	Twelve months to June 30, 1905.
LAND SALES.		
Right-of-purchase leases	$14,133.99	$3,835.93
Special agreements	2,735.20	10,818.50
Homesteads	946.17	128.80
Cash freeholds	652.48	742.12
Olaa agreements	405.23	865.35
Kaimu leases	29.35	----------
Government commutations	----------	1,734.82
Cash sales (auction)	60.00	19,112.15
Government realizations	----------	402.10
Total	18,962.42	37,630.77
Grand total	143,373.46	168,394.73

Statement of expenditures for the year ended June 30, 1905.

Item.	Appropriation.	Drawn.	Balance.
Salary of—			
Commissioner	$3,600.00	$3,600.00	----------
Secretary and subagent fifth land district	1,800.00	1,800.00	----------
Patent clerk	1,200.00	1,200.00	----------
Subagent first land district	1,200.00	1,200.00	----------
Subagent third land district	480.00	480.00	----------
Subagent fourth land district	600.00	600.00	----------
Ranger first land district	600.00	600.00	----------
Ranger second land district	360.00	280.00	$80.00
Incidentals and general expenses	3,100.00	3,098.68	1.32
Total	12,940.00	12,858.68	81.32

General expenses, public lands act 3, 1905.

Item.	Appropriation.	Drawn.	Balance.
Incidentals, land office	$500.00	$497.67	$2.33
To reimburse—			
T. Awana for 36 acres purchased under erroneous patent to Mrs. Kahananui in 1888	201.60	201.60	----------
Lam Wo Sing for rent paid March 9, 1903, under general lease No. 551, now declared illegal	272.50	272.50	----------
A. M. McBryde	12.00	12.00	----------
C. B. Makee	37.00	37.00	----------
W. J. Sheldon	16.00	16.00	----------
Total	1,039.10	1,036.77	2.33

Land patents issued during the year ended June 30, 1905.

Patent No.	Date issued.	Patentee.	Area.	Location.	Consideration.	Remarks.
	1904.		*Acres.*			
4828	July 1	M. Machado	23	Ponahawai, Hilo, Hawaii.	$255.00	Cash freeholds.
4829	....do....	Antone P. Martines	7.92	Waipunalei, Hilo, Hawaii.	80.65	Right-of-purchase lease.
4830	....do....	Antone P. Soares	11.3	Kaauhuhu, N. Kohala, Hawaii.	34.00	Time payment.
4831	July 15	A. S. Wilcox	8.62	Hanalei, Halelea, Kauai.	1.00	Land exchange.
4832	July 19	A. Hocking	[a]2,624	Makiki, Honolulu, Kona, Oahu.	131.20	Land purchase.
4833	Aug. 1	Teresa Feries	25.48	Kaiwiki, Hilo, Hawaii.	203.84	Right-of-purchase lease.

[a] Square feet.

Land patents issued during the year ended June 30, 1905—Continued.

Patent No.	Date issued.	Patentee.	Area.	Location.	Consideration.	Remarks.
	1904.		*Acres.*			
4834	Sept. 3	Kahoohanohano	16.91	Puukapu, Waimea, S. Kohala, Hawaii.	$42.02	Right-of-purchase lease.
4835	....do....	Joao de Castello	33.95	Waikaumalo, Maulua. Hilo, Hawaii.	509.25	Do.
4836	....do....	B. F. Kuhns	13.90	Kaiwiki, Hilo, Hawaii.	114.72	Do.
4837	....do....	K. W. S. Kaehamoku	9.7	Olaa Puna, Hawaii	24.25	Cash freeholds.
4838	....do....	B. K. Pea	10	Kaimu Kiula, Puna, Hawaii.	25.00	Do.
4839	Sept. 29	D. H. Hitchcock	194.54	Olaa, Puna, Hawaii	767.24	Olaa reservation.
4840	....do....	J. Keahilihau	8.88	.....do.....	22.00	Cash freeholds.
4841	....do....	Mrs. Kapalu Keahi	8.81	Kaauhuhu, N. Kohala, Hawaii.	27.00	Time payment.
4842	....do....	Nalu (w.)	52.25	Kalaoa, 3 N. Kona, Hawaii.	26.12	Homesteads.
4843	....do....	Henry J. Isles	20.11	Ninole Wailau Kau, Hawaii.	201.10	Do.
4844	....do....	Julio M. Machado	18.38	.....do.....	91.90	Do.
4845	Oct. 6	A. S. Wilcox	984	Puupehu, Hanalei, Kauai.	9,100.00	Cash purchase.
4846	....do....	W. F. Allen	879	.....do.....	4,050.00	Do.
4847	Oct. 31	Jas. D. Dole	61	Wahiawa, Waialua, Oahu.	4,000.00	Time payment.
4848	....do....	Kuahineliilii	9.5	Olaa, Puna, Hawaii.	29.75	Cash freeholds.
4849	....do....	Maoea (w)	11.55	.....do.....	28.87	Do.
4850	....do....	Waikuaala (w)	8.5	.....do.....	21.25	Do.
4851	....do....	Mariano Raposa	24.44	Kaiwiki, Hilo, Hawaii.	195.52	Right-of-purchase lease.
4852	....do....	Joao Fernandes	17.7	Ponohawai, Hilo, Hawaii.	141.60	Do.
4853	Nov. 15	S. Kahananui	4	Kohanaiki, N. Kona, Hawaii.	120.00	Homesteads.
4854	....do....	Manl. d'Almeida	34.24	Kaiwiki, Hilo, Hawaii.	273.92	Right of purchase.
4855	....do....	James B. Castle	282	Kaipapau, Koolauloa, Oahu	1,000.00	Cash purchase.
4856	....do....	John Hind	3.91	Puako, S. Kohala, Hawaii.	196.00	Do.
4857	Dec. 6	W. B. McCormick	77	Wahiawa, Waialua, Oahu.	231.00	Right-of-purchase lease.
4858	....do....	J. M. Hind	20.02	Puuanahulu, N. Kona, Hawaii.	50.00	Time payment.
4859	....do....	S. B. Dole	32	.....do.....	75.00	Do.
4860	....do....	S. Pali	10.20	Olaa, Puna, Hawaii.	25.36	Cash freeholds.
	1905.					
4861	Mar. 11	H. Renjes	[a] 13,225	Hauhaukoi, Kona, Hawaii.	1.00	Land exchange.
4862	Jan. 18	Robt. Hind	25.38	Puuwaawaa, N. Kona, Hawaii.	507.60	Cash purchase.
4863	....do....	Chas. F. Peterson	[a] 6,731	Kaalawai, Kona, Oahu.	337.55	Do.
4864	....do....	E. H. Woodhouse	1.82	Tantalus, Honolulu, Kona, Oahu.	1,821.00	Do.
4865	....do....	Peter C. Jones, Limited	2.03	Nuuanu Valley, Honolulu, Oahu.	1,500.00	Do.
4866	....do....	Hannah Awana	92.46	Keanae, Koolau, Maui.	924.60	Right-of-purchase lease.
4867	Mar. 11	E. S. Cunha	[a] 276	Maunakea street, Honolulu, Kona, Oahu.	1.00	Land exchange.
4868	....do....	Mrs. Angela E. Cunha	[a] 1,752	Honolulu, Kona, Oahu.	1.00	Do.
4869	Feb. 14	Mrs. Kawai Naiheauhau	12.58	Puukapu, S. Kohala, Hawaii.	31.45	Right-of-purchase lease.
4870	....do....	John Crowley	14.35	.....do.....	71.75	Do.
4871	....do....	Rose Kaopua	12.31	.....do.....	40.22	Do.
4872	....do....	Jose Marques	19.42	Ahualoa, Hamakua, Hawaii.	145.65	Homesteads.
4873	....do....	Lino de Oliveira	16.90	.....do.....	126.75	Do.
4874	....do....	Mrs. Mary Hanuna	108.25	Nahiku, Koolau, Maui.	940.00	Time payment.
4875	Mar. 17	Puaa	10.65	Olaa, Puna, Hawaii	26.63	Cash freeholds.

[a] Square feet.

Land patents issued during the year ended June 30, 1905—Continued.

Patent No.	Date issued.	Patentee.	Area.	Location.	Consideration.	Remarks.
	1905.		*Acres.*			
4876	Mar. 17	M. J. Soares	19.71	Nanawale, Puna, Hawaii.	835.00	Time payment.
4877	....do....	Ioela	10.10	Olaa, Puna, Hawaii	25.25	Cash freeholds.
4878	....do....	William Campbell	19.47	Puukaku Waimea, S. Kohala, Hawaii.	48.70	Right-of-purchase lease.
4879	....do....	Antonio F. Jil	19.11	Kahuku, Hilo, Hawaii.	95.55	Do.
4880	....do....	Manuel Cabrinha	20.19	.....do.....	100.95	Do.
4881	....do....	Kaoi (W.)	8.26	Olaa, Puna, Hawaii	20.65	Cash freeholds.
4882	....do....	S. B. Nuhi	6.32	Waipunalei, Hilo, Hawaii.	73.80	Homesteads.
4883	Mar. 25	W. H. Kuhlmann	[a] 42,500	Niau Kalihi, Kona, Oahu.	600.00	Cash purchase.
4884	....do....	Aola Ke	14.34	Ninole and Wailau, Kau, Hawaii.	71.70	Homesteads.
4885	June 19	August Drier	[a] 159	Richards street, Kona, Oahu.	318.00	Cash purchase.
4886	....do....	.....do.....	[a] 8,000	Punchbowl Slope, Honolulu, Kona, Oahu.	560.00	Do.
4887	....do....	Mrs. Lucy E. Jakins	67.50	Waikaumalo, Hilo, Hawaii.	4,200.00	Time payment.
4888	....do....	J. W. Koakulana	9.46	Olaa, Puna, Hawaii	19.80	Olaa reservation.
4889	....do....	Mary K. Nailima	18.36	.....do.....	110.16	Do.
4890	....do....	Kawai	18.5	.....do.....	111.00	Do.
4891	....do....	J. W. Kahoiwai	12.24	Nanawale Puna, Hawaii.	73.44	Homesteads.
4892	....do....	R. H. Atkins	38.26	Kaauhuhu, N. Kohala, Hawaii.	115.00	Time payment.
4893	....do....	Thome de Aguiar	18.3	Kaapahu, Hamakua, Hawaii.	137.25	Homesteads.
4894	....do....	Antone Andrade	17.32	Ninole and Wailau Kau, Hawaii.	121.25	Do.
4895	....do....	Kuabara Jutaro	48.45	Nahiku, Koolau, Maui.	405.00	Time payment.
		Total	3,606.57		36,613.26	

[a] Square feet.

Land exchanges.

District.	No.	Area.
		Acres.
First land district	.....	(a)
Second land district	.....	(a)
Third land district	.....	(a)
Fourth land district	.....	(a)
Fifth land district	3	0.34
Sixth land district	1	8.62
Total	4	8.96

[a] No exchange.

SUMMARY, NOT INCLUDING EXCHANGES.

	Area.	Consideration.	Average per acre.
	Acres.		
Right of purchase lease	442.01	$3,105.74	$7.02
Homesteads	199.58	1,188.96	5.95
Time payment	415.30	10,681.00	25.71
Cash freehold	120.34	504.01	4.18
Cash purchase	2,179.52	20,121.35	9.23
Olaa reservation	240.86	1,008.20	4.18
Total	3,597.61	36,606.26	10.17

Lands taken up under general provisions of land act, 1895.

[Other than cash sales and Olaa purchases under special conditions of Part IX.]

Land districts.	Right of purchase lease.			Cash freeholds.			Special agreement.			Homesteads.	
	No.	Acres.	Value.	No.	Acres.	Value.	No.	Acres.	Value.	No.	Acres.
1. Hilo and Puna	4	80.80	$835.00	11	113.19	$282.97	3	75.34	$964.50		
2. Hamakua and Kohala	10	290.22	3,100.88				2	20.18	1,290.00	2	10.80
3. Kona and Kau	5	151.18	470.30							10	197.86
4. Maui, Molokai, etc											
5. Oahu	27	1,335.72	15,936.00							1	.58
6. Kauai										23	89.77
Total	46	1,857.92	20,342.18	11	113.19	282.97	5	95.52	2,254.50	36	299.01

SUMMARY.

	No.	Acres.	Value.
Right of purchase leases	46	1,857.92	$20,342.18
Cash freeholds	11	113.19	282.97
Special agreements	5	95.52	2,254.50
Homestead leases	36	299.01	
Total	98	2,365.64	22,879.65

Comparative statement of lands taken up under general provisions of land act, 1895.

	No.	Right of purchase leases.	No.	Cash freeholds.	No.	Special agreement.	No.	Homestead leases.	Total area.	Total value.
		Acres.		*Acres.*		*Acres.*		*Acres.*	*Acres.*	
Twelve months to June 30, 1904	75	5,483.58	6	817.46	1	360.00	23	164.24	6,825.28	$27,795.17
Twelve months to June 30, 1905	46	1,857.92	11	113.19	5	95.52	36	299.01	2,365.64	22,879.65

Cash sales—(Auction).

Location.	Area.	Purchase price.
	Acres.	
Makiki, Honolulu, Oahu	0.05	$131.20
Lot 1, Puupehu, Hanalei, Kauai	984	9,100.00
Lot 2, Puupehu, Hanalei, Kauai	879	4,050.00
Kaipapau, Koolouloa, Oahu	282	1,000.00
Puako, South Kohala, Hawaii	3.91	196.00
Puuwaawaa, North Kona, Hawaii	25.38	507.60
Kaalawai, Kona, Oahu	.15	337.55
Tantalus, Honolulu, Oahu	1.82	1,821.00
Nuuanu Valley, Honolulu, Oahu	2.03	1,500.00
Niau, Kalihi, Kona, Oahu	.97	600.00
Richard street, Honolulu, Kona, Oahu	.03	318.00
Punchbowl slope, Honolulu, Kona, Oahu	.18	560.00
Total	2,179.52	20,121.35

SUMMARY.

	Area.	Consideration.	Average per acre.
	Acres.		
Right of purchase leases	442.01	$3,105.74	$7.02
Homesteads	199.58	1,188.96	5.95
Land exchange	8.96	4.00	
Time payment	415.30	10,681.00	25.71
Cash freehold	120.34	504.01	4.18
Cash purchase	2,179.52	20,121.35	9.23
Olaa reservation	240.86	1,008.20	4.18
Total	3,606.57	36,613.26	10.15

Comparative statement of summary.

	No. of patents.	Right of purchase leases.	Homesteads.	Land exchange.	Time payment.	Cash freeholds.	Cash purchase.	Olaa reservation.	Total.	Total consideration.	Average per acre.
		Acres.	*Acres.*	*Acres.*	*Acres.*	*Acres.*	*Acres.*	*Acres.*	*Acres.*		
12 months to June, 1904	96	1,443.54	243.86	7,581.40	253.53	177.03		86.08	9,785.44	$17,839.86	$18.23
12 months to June, 1905	68	442.01	199.58	8.96	415.30	120.34	2,179.52	240.86	3,606.57	36,613.26	10.15

General leases issued during the year ended June 30, 1905.

Date of lease.	Name of lessee.	Location.	Class of land.	Area.	Term of lease.	Annual rent.	Lease to commence from—
1904.				*Acres.*	*Years.*		
July 20	W. F., H. G., and M. E. Dillingham.	Mokuleia, Waialua, Oahu.	Grazing	203.00	21	$56.00	July 25, 1904
Dec. 12	Pepeekeo Sugar Co.	Kulaimano, Hilo, Hawaii.	Agricultural.	347.00	5	2,200.00	Dec. 27, 1904
1905.							
Jan. 10	J. G. Henriques and F. Gomes.	Honuaula, N. Kona, Hawaii.	Grazing	3,044.00	21	610.00	July 29, 1903
Jan. 21	A. M. Brown	Kaohe, Hamakua, Hawaii.	do	18,000.00	21	4,550.00	Sept. 10, 1906
Apr. 17	Onomea Sugar Co.	Kaieie, Hilo, Hawaii.	Agricultural, pastoral, and waste.	252.00	5	1,050.00	July 1, 1905
June 9	Haleakala Ranch Co.	Nakula, Kaupa, Maui.	Grazing	1,075.00	21	50.00	Sept. 1, 1905
June 13	F. Gouveia, Carl, James, and Hy. Ontai.	Opihihale, S. Kona, Hawaii.	do	2,400.00	21	272.00	June 9, 1905
June 26	Hawaiian Agricultural Co.	Kaalaala, Kau, Hawaii.	Agricultural, pastoral, and waste.	224.00	5	470.00	June 15, 1905
Do	do	Moaula, Kau, Hawaii.	do	467.00	5	900.00	June 15, 1906
Do	do	Makaka, Kau, Hawaii.	do	80.45	4	255.00	May 1, 1905
	Total			26,092.45		10,413.00	

SUMMARY.

General leases:	
Number	10
Area	26,092.45
Annual rental	$10,413.00

Land patents issued on land commission awards during the year ended June 30, 1905.

Patent No.	Area.	Patentee.	Location.
8166	0.93 acre	Poki	Kuhimana, Kapalama, Oahu.
8167	19,838 acres	Kamaikaaloa	Kalialinui, Kula, Maui.
8168	150.49 acres	Paulo Kanoa	Manana, Ewa, Oahu.
8169	253 fathoms 14 feet	Louis Gravier	Kapuukolo, Honolulu, Oahu.
8170	12,524 square feet	Kaunuohua for W. L. Moehonua.	Kalihi, Kona, Oahu.
8171	8,435 square feet	M. Kekauonohi	Queen street, Kona, Oahu.
8172	4,520 acres	Keoni Ana	Kukuau, first Hilo, Hawaii.
8173	8,600 acres	W. C. Lunalilo	Kalihiwai, Halelea, Kauai

JUDICIARY DEPARTMENT.

[By W. F. Frear.]

The chief justice and associate justices of the supreme court and those of the circuit judges who had received recess appointments in June, 1904, were reappointed for full terms by the President, by and with the advice and consent of the Senate, on December 12, 1904. Mr. Justice Hatch, of the supreme court, resigned on January 31, 1905, owing to ill health, and Arthur A. Wilder, of the Honolulu bar, was appointed in his place. The term of Second Judge Gear, of the first circuit court, expired on March 1, 1905, and Judge Alexander Lindsay, then district magistrate of Honolulu, was appointed to succeed him. Very few changes have taken place among the district magistrates, whose appointment, it may be stated in passing, was transferred by the last legislature from the governor to the chief justice.

SUPREME COURT.

About two years ago the supreme court calendar gained somewhat upon the court, but during the last year a vigorous effort was made to catch up with the calendar, with the result that that object was accomplished last June. There were 149 cases disposed of during the October term, 1904, the sessions of which continued until the early part of June, 1905. Volume 16 of the Hawaiian reports, covering the decisions rendered during that period, contains 859 pages. A volume of these reports has been published yearly for several years. A decade ago it took from two to three years to fill a volume. The work of the court was expedited somewhat, among other things, by the adoption of new rules of court last September designed to facilitate the work of the court, among which mention may be made of those providing for regular monthly sessions of the court, the specification of a definite number of cases to be heard at each session, the requirement of briefs before instead of after oral argument, the limitation of time for argument, condensation in bills of exceptions, and the prevention of unnecessary delays in the presentation of cases.

It will be borne in mind that the courts of Hawaii, as provided for originally in the organic act, corresponded with the courts of the States rather than with those in the other Territories. For instance, there is, entirely distinct from the Territorial courts proper, a United States district court, which has also the jurisdiction of a United States circuit court. The Territorial courts proper, consisting of a supreme court, 5 circuit courts, and 29 district courts, have the jurisdiction given to similar courts in the various States. Cases could be taken from the Territorial supreme court, as from the State supreme courts, only to the Federal supreme court only on writ of error and only when Federal questions were involved. This seems to have been the general scheme originally intended (see 187 U. S., 309; 183 U. S., 545; 108 Fed., 113; 13 Haw., 174), but at the close of the last Congress a proviso was added to section 86 of the organic act by way of amendment to an act then before Congress (33 Stats., 1035) to the effect that writs of error and appeals may be taken from the supreme court of the Territory to the Federal supreme court in all cases in which the amount involved, exclusive of costs, exceeds $5,000.

There has been much discussion in the Territory as to the advisability of this provision on account of the expense and delay that necessarily results from an

appeal to the Federal Supreme Court, owing to the distance these islands are situated from the national capital. One of the principal objects which it is believed was intended to be accomplished by this provision was to enable a citizen of one of the States or other Territories or a foreign country, involved in litigation with a citizen of this Territory, to take his case to the Federal courts—an object the desirability of which probably no one would question. But it is suggested that this object might better be effected here, where the courts are organized on the lines of the Federal and State courts, in the same way in which it is effected in the several States in cases of diverse citizenship, that is, by removal of causes from the Territorial courts of original jurisdiction to the United States district court rather than by permitting every case involving more than $5,000, even though not involving a Federal question or diverse citizenship, to be taken to Washington. This perhaps was originally intended by section 86 of the organic act, but if so, such intention has been supposed to be inadequately expressed. (See 1 Estee, 12.) In this view, cases involving diverse citizenship as well as those involving Federal questions could be taken to the Federal courts by removal from the Territorial courts of original jurisdiction; those involving Federal questions could also be taken up from the Territorial supreme court by writ of error, and those of a purely local nature could be determined finally in the Territorial courts as in the corresponding State courts.

Another question relating to the supreme court that has been discussed to some extent during the last few years has been as to whether the number of the supreme court justices should be increased from three to five. One reason which has been urged in support of this, namely, that the number of cases brought to this court has increased to such an extent as to require an increase in the membership of the court in order to enable it to keep up with its work has not as great force as formerly. Other reasons, however, might be deemed sufficient to justify such an increase in the number of justices. A great many very important cases, some involving large amounts, come before this court, and a decision by a bench of five would naturally be more satisfactory than one by a bench of three, especially in the event of a dissenting opinion by one member of the court. An increase in the number of justices would also in some degree meet the argument for allowing appeals to the Federal Supreme Court in cases in which Federal questions are not involved, or, if it is deemed best to allow such appeals, it would tend to reduce the number of cases in which such appeals would be taken. The supreme court of the Territory of Oklahoma has a membership of seven, and the supreme courts of Arizona and New Mexico, in each of which there is probably less litigation than in Hawaii, consist of five members.

CIRCUIT COURTS.

The circuit courts in general are pretty well up-to-date in their work. The circuit court of the first circuit, which a few years ago was very far behind in this respect, has made great progress in catching up with its calendar.

Some question has been raised as to the jurisdiction of the circuit courts in naturalization matters. This arises from the language of section 2165 of the Revised Statutes, which confers such jurisdiction upon the "district" courts of the Territories. The question is whether the circuit courts of the Territory of Hawaii are "district" courts within the meaning of that statute. Since the organization of the Territory these circuit courts have naturalized nearly 1,000 persons. This, of course, is exclusive of those naturalized by the supreme court and the Federal court in the Territory, the jurisdiction of which is unquestioned. It is very desirable that the circuit courts should have such jurisdiction for the convenience of persons desiring to be naturalized who live on islands or in circuits in which the supreme court and the Federal court do not sit. It might be well to amend section 100 of the organic act of the Territory so as to ratify all naturalizations hitherto granted by the circuit courts and at the same time place their jurisdiction beyond question.

MISCELLANEOUS.

Much has been accomplished during the last few years in remedying defects in the laws relating to the organization, administration, and procedure of the courts and in conforming them to the new conditions brought about by annexation. This has been done partly through the general revision of the laws which was enacted by the last legislature and partly by the enactment of many par-

ticular laws by the last two legislatures. The establishment of county government by the last legislature did not materially affect the judiciary department.

The supreme court library, to which free access is had also by the circuit court of the first circuit, the United States district court, and members of the bar, contains nearly 8,000 volumes. Of these over 900 have been added during the last two years. A new catalogue of this library is now nearly completed. Each of the circuit courts in the circuits other than the first has a small but well-selecetd and growing library containing from 400 to 700 volumes.

In several of the circuits other than the first there is much need of new court-houses, which, it is hoped, will be erected in the near future, as appropriations have already been made for them.

STATISTICS.

The statistics of the judicial work of the courts are made up by the calendar years. The following will give a general idea of the number and character of the cases, both civil and criminal, and the nationality of the convicted in criminal cases. There are some duplications owing to appeals from one court to another, and in some instances to a third court.

SUMMARY.

	1903.	1904.
Civil cases	2,907	2,947
Criminal cases (persons charged)	10,059	10,048
Total	12,966	12,995

Cases in the—	1903.	1904.
Supreme court	99	149
Circuit courts	1,385	1,685
District courts	11,424	10,895
Naturalizations	58	266
Total	12,966	12,995

Nationality.	Convicted.		Drunkenness.		Gambling.	
	1903.	1904.	1903.	1904.	1903.	1904.
Chinese	1,331	1,555	4	7	904	1,201
Japanese	2,083	2,101	154	132	862	951
Portuguese	454	427	91	89	101	10
Hawaiians	1,527	1,562	573	484	82	287
Others	1,313	1,242	615	476	108	119
Total convictions	6,708	6,887	1,437	1,188	2,057	2,568
Total arrests			3,950	2,785	3,207	3,750

Liquor selling and distilling.	1903.	1904.
Total convictions	138	121
Total arrests	234	241

	Offenses.											
	Against the peace.		Against chastity.		Against property.		Homicides.				Miscellaneous.	
							Manslaughter.		Murder.			
	1903.	1904.	1903.	1904.	1903.	1904.	1903.	1904.	1903.	1904.	1903.	1904.
Arrests	1,472	1,499	347	295	594	771	5	4	8	14	2,664	2,219
Convictions	831	859	229	186	304	384	4	1	4	4	1,704	1,563

SUMMARY—continued.

Offenses.	Summary of arrests.		Summary of convictions.	
	1903.	1904.	1903.	1904.
Drunkenness	1,517	1,268	1,437	1,188
Liquor selling and distilling	234	241	138	121
Gambling	3,207	3,750	2,057	2,568
Offenses against chastity	347	293	229	184
Offenses against property	594	771	304	384
Offenses against the peace	1,472	1,499	831	868
Homicides	13	18	8	5
Miscellaneous	2,675	2,208	1,704	1,563
Total	10,059	10,048	6,708	6,881

POLICE.

[By William Henry.]

Police matters of the Territory were under the direction of Arthur M. Brown, as high sheriff, from July 1, 1904, to October 21, 1904, and of William Henry from that date until June 30, 1905.

An act was passed by the legislature April 14, 1905, which created counties within the Territory of Hawaii, provided for the government thereof, made the sheriffs of the respective counties elective, and vested them with the powers, privileges, and authority formerly exercised and performed by the high sheriff of the Territory, excepting the care, custody, and control of Territorial jails, houses of correction and penitentiary, and the care and custody of the prisoners confined therein.

This act went into effect July 1, 1905, an election taking place June 20, 1905. A. M. Brown was chosen sheriff for the county of Oahu, William H. Rice, jr., for the county of Kauai, William Keolanui for the county of Hawaii, and William E. Saffery for the county of Maui.

The number of regularly paid police throughout the Territory has averaged for the annual period 220 per month, including deputy sheriffs and captains of police, and the wages paid have averaged $9,451.50 per month. Of the total number of policemen employed all but 43 were Hawaiians.

Japanese and Porto Ricans lead in the commission of the more serious crimes, convictions among Chinese being largely for gambling, which also appears to have increased somewhat among the Japanese. Drink is largely responsible for the commission of crime by Hawaiians, and to the former existence of the so-called social clubs, which were patronized almost exclusively by Hawaiians, can be traced much of the origin of reckless conduct among the natives.

One of the most important events during the year was the strike at Lahaina plantation, on the island of Maui, which occurred on May 20, 1905. Seventeen hundred Japanese refused to work and became riotous by breaking the windows and doors of the "sugar mill" and gathering together in the night, striking terror to the private residents of the town of Lahaina, and making an attack on the house of one of their own countrymen.

The police, officered by Sheriff Baldwin, of Maui, assisted by the militia of that island, endeavored to disperse the mob, which resulted in the death of one Japanese laborer and the wounding of two more.

Word was received in Honolulu by wireless of the critical condition, and a force of 150 men, consisting of the militia, under Captain Johnson, and the police, under Captain Parker and myself, went to Maui, accompanied by two attachés of the Japanese consulate. The rioters were found in a sulky mood, no doubt enhanced somewhat by the shooting of one of their number.

After five days' continuous work amongst them their grievances were adjusted, saving the plantation the loss of $20,000 in sugar cane, which lay cut down in the field previous to the strike.

The erection of a new jail, whereby misdemeanor prisoners can be segregated from felons, will have a wholesome effect on our prison population in the future.

The advancement made by the last legislature in passing a parole law for

prisoners is in line with similar action on the part of several of the States on the mainland, and will no doubt have a beneficial effect, both for the prisoners and for society in general.

The necessity of adopting a rule for the absolute abstinence from intoxicants during parole has been forcibly brought to the attention of the board of prison inspectors by the fact that 80 per cent of the prisoners in the penitentiary attribute their downfall directly or indirectly to the use of alcohol.

The highest number of prisoners in Oahu prison at any given time during the fiscal year was reached on December 14, 1904, there being on that day 351, and the lowest number was on June 25, 1905, as 273.

The percentages of nationalities were as follows:

Hawaiian males	25.31	Chinese males	15.00
Hawaiian females	2.58	Chinese females	.55
Japanese males	18.38	Other nationalities, males	34.22
Japanese females	1.11	Other nationalities, females	2.85

The total number of days' imprisonment is shown and classified as follows: For criminal offenses, 70,271; misdemeanor offenses, 26,274; committed offenses, 16,072; total imprisonment at Oahu prison, 112,617.

The total imprisonment of prisoners reduced will show the daily average to have been: For criminals, 193; misdemeanors, 72; committed, 44; making an average daily total of 309 prisoners at the Oahu prison.

Classification of the daily incarceration will show that 62.46 per cent were criminals; 23.30 per cent were misdemeanors, and 14.24 per cent were committed. The average sick was 13.

The labor performed by convicted prisoners for the fiscal year was: On roads and bridges, 36,777 days; Oahu prison male servants and manufacturers, 26,818 days; performed by women in the manufacturing of hats and clothing, 4,293 days; police station servants, 2,555 days; total, 70,443 days.

The total number of days' imprisonment of convicted prisoners is shown in the foregoing part of this report to have been 96,545 days, which leaves unaccounted 26,102 days. The balance of time is made up as follows: At rest on Sundays, rainy days, and holidays, 19,833 days; days of sickness, 4,869 days; days of entry into prison, 811 days; dark-cell punishment, 180 days; under death sentence, 409 days; total, 26,102 days.

Receipts of fines and costs amounted to $945.55. In addition to this the receipts for the support of the United States prisoners amounted to $7,133.50. The full expenditures, inclusive of all salaries, throughout the fiscal year is shown as follows: Support of prisoners, $37,284.71; pay of Oahu prison guards and lunas, $26,519.08; total, $63,803.79.

Having shown the total imprisonment at the Oahu prison to have been 112,617 days and the total net cost for the care and guarding of prisoners throughout the fiscal year to have been $63,803.79, the actual cost per day was 56 cents per prisoner.

FORESTRY.

[By Ralph S. Hosmer.]

The essential features of the forestry work now being conducted in the Territory of Hawaii are the creation of forest reserves and the planting of waste and barren land with trees of economic value.

Forest reserves are established with the main object of protecting the watersheds of streams important for irrigation. For this purpose the Hawaiian forest is admirably adapted, for with its dense mass of luxuriant undergrowth it makes a cover which absorbs a large portion of the heavy precipitation, retards the run-off on the steep slopes, and equalizes the flow in the streams which lower down supply the irrigation ditches.

The forest work of the Territory is performed by the division of forestry of the board of commissioners of agriculture and forestry, an unpaid board appointed by the governor and constituting, with its several divisions, the Territorial department of agriculture. Under the terms of the law creating the board the superintendent of forestry must be a professional forester of experience. To him is intrusted the administration and execution of all matters pertaining to forestry within the Territory.

During the past year the energies of the division of forestry have been largely directed toward the creation of forest reserves on the several islands.

Much work of a preliminary nature has been done in the way of examining lands and preparing reports, which in the coming months will lead to action of far-reaching importance. Two tracts of forest land on the islands of Oahu and Hawaii have been set apart as forest reserves by proclamation by Governor Carter. These reserves comprise, respectively, 913 and 18,940 acres. Pending on June 30, and proclaimed a reserve by Acting Governor Atkinson on July 24, 1905, was a tract of 110,000 acres in the district of Hilo, island of Hawaii. Other large projects on Maui and Kauai, embracing, respectively, 43,000 and 37,500 acres of forest land, are so well under way that final action will be taken on them during July or August.

In creating forest reserves it is the custom of the board of agriculture and forestry to recommend a definite area, which it believes it is to the best interest of the Territory to maintain under forest cover. The governor in declaring this area a reserve sets apart as compartments thereof the government lands within its boundaries not then under lease or on which the existing leases have less than two years to run. The individuals or corporations owning or leasing land within the reserve are then requested to cooperate with the government, under the law, in carrying out the objects for which the reserve is set apart. This they are usually willing to do, because the establishment of the reserve is almost directly to their advantage in that they reap the most direct and immediate benefits from the stream protection afforded by the forest cover.

Not only are the large interests willing to cooperate with the government in forest work, but many have gone so far as to establish and maintain private forest reserves covering extensive areas and protected from cattle at great expense. Prominent in this work is the Bishop estate, which has for some time maintained private forest reserves aggregating 18,500 acres on the island of Hawaii and 20,700 acres on Oahu. Plans for setting apart large additional areas on these two islands and on Kauai are already well developed, and in each case where the Bishop estate had lands within the areas proposed by the government as forest reserves, the response of the trustees to suggestions of cooperation has been prompt and cordial.

Other notable instances of corporation interest in forestry are afforded by Messrs. C. Brewer & Co., who have for a number of years maintained a private forest reserve of approximately 25,000 acres in the district of Kau on Hawaii; by the Baldwin interests on Maui, and by the Lihue Plantation Company on Kauai. This phase of forest work will be continued during the coming year, and will be vigorously pushed until the protection of the forest on the important watersheds on each of the larger islands is secured.

The work of the division of forestry toward the introduction of exotic trees and the planting of waste areas has, during the past year, been mainly in the way of furnishing good tree seed to prospective planters and by advising them as to the ways and means to be followed to insure success in making forest plantations. Seed of the important trees, both native and introduced, has been collected, and is held on sale at prices just covering the cost, while those wishing only a few trees can obtain them as seedlings from the government nursery. The nursery also provides, free of charge, ornamental and forest trees for use on school grounds and around public institutions.

Limited appropriations have prevented any extensive forest planting by the government, but in cooperation with ranch and plantation companies throughout the Territory a considerable quantity of seed has been furnished for experimental purposes. As this seed is tried under varying conditions of soil, aspect, and elevation, the results obtained will, when compiled, be of much value in future work.

A number of the large corporations have taken an active interest in forest planting in past years and, with certain of them, it has become a fixed policy to put in annually a certain number of thousand trees or to plant a definite area. The forest plantations near Lihue, Kauai, and on the island of Maui stand out with special prominence because of the size of the areas planted and the sustained interest manifested throughout a long term of years. But throughout the Territory much commendable work has been done by other corporations and by individuals. It is the desire and intention of the division of forestry to help and encourage this work in every possible way.

During the long drought from which the Territory suffered during the early months of 1905 there were a number of forest fires on the different islands. While the areas burned over were not large in terms of the mainland, the damage done was considerable. As Hawaiian forests are easily destroyed,

forest fire is a serious menace here as it is elsewhere. Prompt action by the legislature, which was then in session, in appropriating a special fund for fighting fire enabled the board to put a force of men in the field and to get the largest of the fires, which was on government land, under control. The others were extinguished by the corporations on whose lands they occurred. Later in the session a forest-fire law was enacted, which, it is believed, will help in controlling if not in preventing future fires.

One other matter of forest interest should be mentioned here. That is the decision of the Bishop estate to lumber a section of the koa forest on its land in the district of Kau, on Hawaii. Koa is the most valuable of the Hawaiian woods and for beauty of color, grain, and texture should easily take its place in the first class of woods used for high-grade interior finish and cabinet work. As a step toward the economic development of the Hawaiian forests this undertaking is significant.

As a whole the outlook for forestry in Hawaii is promising. The necessity of watershed protection makes the needs of a forest cover apparent, and an excellent public sentiment supports the work which is undertaken. This, with the increasing interest in forest planting, should assure continued financial support. The field for forest work in Hawaii is a large one, and the results obtained help to strengthen the foundations on which the continued prosperity of the Territory rests.

ENTOMOLOGY.

[By Alexander Craw.]

Hawaii early recognized the importance of naturally controlling the destructive insects that had been introduced upon trees and plants brought from other countries by her citizens, in an effort to secure the best plants and fruits to be had in the world. In the primary efforts to subdue the injurious insects recourse was taken to the old methods of controlling such pests—by the use of spray mixtures, poisons, and poisonous gases for fumigation—but without any practical results. The successful work with beneficial insects in subduing insect pests in California was taken up by the agricultural authorities of Hawaii and the services of Prof. Albert Koebele were secured for collecting beneficial insects in foreign countries and introducing and establishing them in Hawaii. His work in this line has been so successful that now some of the former serious introduced pests have been brought under subjection without any immediate personal outlay to the agriculturist or fruit grower.

A few years ago a sugar-cane pest (*Perkinsiella saccharicida*, Kirk.) made its appearance in the sugar-cane fields of Hawaii, introduced, it was supposed, from Australia. It has been stated that this pest caused a monetary loss of upward of $3,000,000 to the sugar interests of Hawaii the past year. It was so destructive to the industry that the Hawaiian Sugar Planters' Association a year ago joined the Territorial board of agriculture and forestry and engaged Prof. R. C. L. Perkins, then acting superintendent of entomology for Hawaii, to accompany Professor Koebele on a mission to Australia to search for the natural enemies of the "cane-leaf hopper." It did not take their trained eyes long to discover the insects that were holding that insect in check. A few of each were successfully introduced and established here, and now they have been propagated and planted on the various islands and are well established wherever placed. One of the most important is a very minute fly that destroys the eggs of the "leaf hopper" by inserting its ovipositor into the leaf-hopper egg and depositing therein an egg, which soon hatches into a small, blind, footless grub, afterwards changing to a pupa and fly; and in the latter stage it cuts its way out and is soon ready to continue the good work.

For the better protection of the Territory the board of agriculture and forestry has issued regulations against the importation of certain fruits from countries or districts infested with fruit flies. To further protect the islands from injurious insects and plant diseases, I addressed a letter, on November 28, 1904, to the Hon. James Wilson, Secretary of Agriculture, who, in conjunction with the Secretary of the Treasury, obtained for us permission to immediately fumigate with hydrocyanic-acid gas all cases of plants or trees arriving for this Territory. This privilege is most important, as it will destroy any insects that have developed on the voyage or on the dock before inspection and delivery of the plants.

One of the most important divisions of the work of the board is the propagation or collection and distribution of beneficial insects and fungous disease for the suppression of insects pests. Not only that, but economic entomology has been drawn upon for checking the too great increase of noxious weeds and undesirable plants. Probably Hawaii is the first country that purposely introduced insects for the suppression of the latter, as instance the work but recently accomplished in checking the lantana that was introduced as a choice flowering shrub, and by the assistance of the wild doves and "Mynah" birds the seed was scattered until it took possession of all uncultivated lands, destroying the value of it for pasture, as the hills and valleys were covered with an almost impenetrable jungle of thorny bushes. Professor Koebele collected in Mexico the various insects that work exclusively upon the plant and forwarded them to Professor Perkins, who propagated and distributed them on the islands, and the value of their work is now evident in the dried-up, defoliate branches of lantana.

The more important insects are a small, bluish butterfly, the larvæ of which destroys the flowers, and a small, dark fly, the maggots of which destroy the lantana seeds, thus checking the increase and spread of the pest, so that hereafter when land is cleared it remains so. In the destruction of the foliage a leaf miner and a tingidæ play important parts.

Agriculture and horticulture will probably continue to be the principal industries of this Territory, and the Territorial and Federal governments, as well as the Hawaiian Sugar Planters' Association, have well-equipped entomological establishments for carrying on the particular work that each has to attend to.

The Federal experiment station has a division of entomology, of which Mr. D. L. Van Dine has charge, and it gives special attention to agricultural pests. The Hawaiian Sugar Planters' Association has a large and well-organized staff of entomologists devoting their entire time to insects pertaining to sugar cane and the propagation of parasites and predaceous insects that infest cane. Prof. R. C. L. Perkins is in charge, and has a thorough knowledge of the fauna of the islands.

The Territorial board of agriculture and forestry entomologists are located at the board's headquarters and grounds on King street. The duties of that division are to guard against the further introduction of insect pests and diseases into the Territory. Inspectors board all vessels arriving from outside points and all plants are examined and, if deemed necessary, are fumigated with hydrocyanic-acid gas. The board is well equipped with fumigating chambers on the principal docks, where the work of disinfection can be thoroughly and promptly done. By the sanction of the postal authorities all plants received by mail are also inspected, as it is a well-known fact that such small plants frequently harbor injurious pests and diseases. All this work should reduce to a minimum the danger of introducing new pests and blights on the islands. The Territorial entomologists also attend to the propagation and distribution of parasitical and beneficial insects for the suppression of noxious insects infesting trees and plants, as well as insects for the control of lantana.

Under the instigation of Mr. Jacob Kotinsky, assistant Territorial entomologist, an entomological society was organized on January 26, 1905, of which Prof. R. C. L. Perkins is president and Jacob Kotinsky is secretary-treasurer. The society meets monthly and now has a membership of 20.

SUGAR PLANTATION PESTS.

[By R. C. L. Perkins.]

During the summer of 1904 the Hawaiian Sugar Planters' Association appointed a staff of entomologists to form a division of entomology in connection with their prior established experiment station at Makiki, providing fully equipped offices, a laboratory, library, and all the necessaries for scientific work.

This association has always given liberal financial aid to the Territorial entomologists of the bureau of agriculture, but the serious loss to the sugar industry occasioned by an imported insect on various plantations, rendering it necessary for the entomologists to give their undivided attention to this pest, largely brought about the establishment of the division of entomology above mentioned.

Such undivided attention could never be given by the entomologists in the

Territorial offices, who are naturally subject to inquiries from the public for information and advice on all manner of insect pests, many of these being comparatively of quite trivial importance.

In May of last year Mr. Albert Koebele, accompanied by the writer, visited Australia in search of such predaceous and parasitic insects as might be found to attack the above-mentioned insect pest of the sugar cane, with a view to importing them into these islands. About six months were spent mainly in this work, and an extensive study was made of many leaf hoppers, to which class the pest in question belongs, and the natural enemies that keep them in check. Every two or three weeks living predaceous insects or parasites, such as attack or might attack the sugar-cane leaf hopper, were sent to the islands to be tended by the resident members of the staff.

It is gratifying to know that several of the leaf-hopper enemies are now fully established here, and all are in the way of being distributed to every plantation on the several islands. As far as time permitted, attention was also given to beneficial insects which would destroy some other of our imported pests, such as various scale insects, hornfly, etc., and many were sent to the islands for this purpose.

It is now possible for the many plantations to be visited and thoroughly inspected by competent entomologists at regular intervals; and full records are kept as to the abundance or otherwise of insects beneficial or noxious on each plantation. The publication of the results of the Australian mission will, it is expected, be completed within a few months, the work on the material collected being already far advanced, and it can not fail to be of great scientific interest as well as of practical use.

COMMERCE AND NAVIGATION.

[By E. R. Stackable.]

Commercial statistics of the Territory of Hawaii for the fiscal year ended June 30, 1905, are extremely satisfactory. While they show a decrease in round numbers of $1,000,000 in value of our imports, they also show an increase of $11,000,000 in the value of our exports, making a net gain of $12,000,000 in the Territory's trade balance for the year.

From foreign countries our imports have decreased by $780,000, Great Britain, the British colonies, and Japan all showing smaller shipments to Hawaii, while the German trade has gained considerably. These changes also affect our foreign transportation, there being a corresponding decline in the British and Japanese tonnage entering Hawaiian ports.

In Hawaii's trade with the mainland there has been a decrease of $280,000 in the value of goods imported; on the other hand, the value of our exports to the mainland has gained by nearly $11,000,000, from $25,133,533 up to $36,114,985, nearly the whole of which can be attributed to the higher price paid for sugar.

In the 1904 fiscal year the quantity of sugar exported was 736,491,992 pounds, worth $24,359,385, an average of 3.30 cents per pound. For the 1905 fiscal year the quantity of sugar exported amounted to 832,721,287 pounds, worth $35,112,127. The average price of the raw sugar exported last year was 4.187 cents per pound, an increase of 0.887 cent over the previous year. But in the last year's sugar trade there were also shipped to San Francisco 21,118,058 pounds of refined sugar, worth $1,166,091, an average of 5.52 cents per pound. This was an export price of 1.333 cents per pound higher than the export price of the raw sugar.

While there was very little difference in the quantity and value of coffee shipped to the mainland in 1904 and 1905, the quantity of rice exported increased from 39,911 pounds in 1904 up to 2,771,083 pounds last year. The value of the fruit exported last year showed a gain of $66,000, and of honey, $7,600. There has been a falling off in the quantity of hides, partially due, no doubt, to the establishment of the tannery in Honolulu, but at the same time the value of hides has increased.

The statistics compiled at the custom-house office at Honolulu show for the first time, in detail, the nature and value of our different articles of import. Manufactures of iron and steel amounted to almost $1,500,000 in value last year; manufactures of cotton, and animal food, such as hay and grain, each reached $1,000,000 in value, while the value of the oil imported was $995,000 last year. This table is of particular interest, and is given, as follows:

Principal domestic articles shipped from the United States to the District of Hawaii, with values, for the fiscal year ended June 30, 1905.

Domestic articles.	Value.	Domestic articles.	Value.
Animals	$93,146	Provisions (meat and dairy products)	$547,162
Animal food (hay, grain, etc.)	1,044,642	Rice	143,142
Breadstuffs	645,818	Sugar and molasses	110,005
Cotton and manufactures of	1,020,125	Spirits, wines, and malt liquors	468,179
Chemicals	202,436	Soap	103,178
Fertilizers	644,491	Tobacco, manufactures of	522,945
Fish	241,046	Vegetables	202,466
Fruits and nuts	173,492	Wood and manufactures of	589,884
Iron and steel, manufactures of	1,453,160	Wool, manufactures of	183,584
Jewelry	182,477	All other articles	1,529,503
Leather and manufactures of	336,460		
Oils	995,751		
Paper and manufactures of	168,988	Total	11,602,080

Exports for the fiscal year ended June 30, 1905.

Domestic merchandise to noncontiguous territory or mainland	$36,072,039
Domestic merchandise to foreign countries	54,758
Foreign merchandise to noncontiguous territory or mainland	42,946
Foreign merchandise to foreign countries	4,783
Total	36,174,526
Total specie exported to foreign countries and shipped to noncontiguous territory or mainland	214,912

Total value of all articles imported from and exported to foreign countries for the fiscal year ended June 30, 1905.

Countries.	Imports.	Exports.	Countries.	Imports.	Exports.
Great Britain	$305,879	$810	Chile	$448,278	
British colonies	544,679	22,661	France	14,967	
Germany	544,534	1,324	Other countries	19,847	$3,821
Hongkong	174,129	9,016			
Japan	962,651	21,909	Total	3,014,964	59,541

Shipments received from the United States	$11,703,519
Imports from foreign countries	3,014,964
Total	14,718,483
Shipments to noncontiguous territory	36,114,985
Exports to foreign countries	59,541
Total	36,174,526

Domestic exports to foreign countries for the fiscal year ended June 30, 1905.

Articles.	Foreign countries.		Noncontiguous territory.		Total.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Pounds.		*Pounds.*		*Pounds.*	
Sugar, raw	100	$4	811,603,229	$33,946,036	811,603,329	$33,946,040
Sugar, refined	250	17	21,118,058	1,166,091	21,118,308	1,166,108
Coffee, raw	106,309	12,966	1,437,053	173,617	1,543,362	186,583
Rice	3,100	104	2,771,083	84,414	2,774,183	84,518
Fruits and nuts		1,453		193,373		194,826
Honey		287		21,977		22,264
Hides			899,963	84,092	899,963	84,092
Wool, raw			423,114	53,558	423,114	53,558
Other		39,927		348,881		388,808
Total		54,758		36,072,039		36,126,797

Quantity and value of sugar exported for ten years.

Year ended June 30—	Pounds.	Value.	Price per pound.
			Cents.
1896	352,175,269	$11,336,796	3.22
1897	431,196,980	13,164,379	3.05
1898	499,766,798	16,660,109	3.33
1899	462,299,880	17,287,683	3.72
1900	504,713,105	20,392,150	4.05
1901	690,877,934	27,093,863	3.92
1902	720,553,357	24,147,884	3.35
1903	774,8?5,420	25,665,733	3.31
1904	736,491,992	24,359,385	3.30
1905 (raw)	811,603,329	33,946,040	4.19
1905 (refined)	21,118,308	1,166,108	5 52

Value of the carrying trade to and from the district of Hawaii for the fiscal year ended June 30, 1905.

Nationality.	Imports.	Exports.
American	$1,550,898	$33,437
British	655,601	21,247
French	18,222	----------
German	605,228	----------
Italian	7,835	----------
Norwegian	24,348	4,757
Other	152,832	100
	3,014,964	59,541
American (noncontiguous territory)	11,703,519	36,114,985
Total	14,718,483	36,174,526

Vessels entering and clearing in the district of Hawaii for the fiscal year ended June 30, 1905.

Nationality.	Entered.		Cleared.	
	Number.	Tonnage.	Number.	Tonnage.
American	406	800,485	375	800,287
British	63	148,989	57	135,624
Chilean	2	2,622	3	4,400
French	2	3,151	2	3,151
German	6	8,501	8	11,449
Italian	2	2,943	2	2,943
Japanese	4	13,840	4	13,840
Norwegian	1	1,885	1	1,585
Total	486	982,116	452	973,279

Total number of vessels entering and clearing in the district of Hawaii during the fiscal year ended June 30, 1905.

	Coastwise.[a]				Foreign.			
	Entered.		Cleared.		Entered.		Cleared.	
	Number.	Tonnage.	Number.	Tonnage.	Number.	Tonnage.	Number.	Tonnage.
Honolulu	253	502,043	253	537,743	141	384,811	102	341,107
Hilo	33	42,417	30	39,791	3	4,118	----------	----------
Kahului	19	24,871	24	26,890	6	7,542	1	1,399
Koloa	8	6,851	19	16,342	1	743	----------	----------
Mahukona	20	7,451	23	10,007	2	•1,269	----------	----------
Total	333	583,633	349	630,773	153	398,483	103	342,506

[a] The figures under the title "Coastwise" refer to American vessels doing business between the Hawaiian and mainland ports, but do not include vessels engaged in traffic among the Hawaiian Islands.

Passengers departed from the port of Honolulu to oriental ports for the fiscal year ended June 30, 1905.

Ports.	Cabin.	Steerage.	Total.
Yokohama	92	4,764	4,856
Kobe	2	77	79
Nagasaki	3		3
Hongkong	58	1,376	1,434
Shanghai	12	7	19
Total	167	6,224	6,391

Customs receipts for fiscal year ended June 30, 1905.

Duties on imports	$976,946.91	Navigation fees	$1,202.75
Tonnage dues	21,203.16	Overtime of officers	476.00
Official fees	7.00	Immigration fund	22,540.00
Fines, penalties, and forfeitures	3,764.28	Other collections	12,689.16
Storage, labor, and drayage	4,511.12	Total	1,043,340.38

POSTAL AFFAIRS.

[By Joseph G. Pratt.]

Formerly and before annexation the postmaster-general of Hawaii was ex officio postmaster of Honolulu, and a report made by him embraced the business transacted at all of the offices in the Hawaiian Islands, whereas now the offices and postmasters are for the most part independent of each other and under the supervision of the honorable Postmaster-General, to whom reports are regularly made.

The Honolulu office acts as the depository for all the other offices, including Pago-Pago, Samoa, for the deposit of money-order and postal funds, which in turn transmits through its designated depository to the subtreasuries at San Francisco and Chicago. The money-order division of the Honolulu post-office also acts as the exchange office for international money orders issued in Hawaii and payable in China, Japan, and Australian colonies, and makes regular reports thereof to the honorable First Assistant Postmaster-General.

POSTAL REVENUE.

The following table will show the gross receipts of this office (arranged by quarters) for the year ended June 30, 1905. These receipts show the amount of postage stamps and stamped paper sold, rents collected for lock boxes, postage on second-class matter, and sale of empty cases:

	Stamps and stamped paper.	Box rents.	Second-class postage.	Waste.	Total.
1904.					
September	$12,770.72	$1,380.15	$270.50	$1.50	$14,422.87
December	15,932.79	1,372.55	278.73	2.00	17,586.07
1905.					
March	15,039.33	1,365.40	273.98		16,678.71
June	16,009.08	1,381.30	300.89	1.70	17,692.97
Total	59,751.92	5,499.40	1,124.10	5.20	66,380.62

The gross receipts for the year ended June 30, 1904, were $64,271.69, thus showing an increase of $2,108.93.

MONEY-ORDER DIVISION.

On June 30, 1905, there were in this Territory 59 money-order offices, of which 34 were international money-order offices, where money orders can be

purchased payable in any part of the world. A list of these offices is herewith attached:

HAWAII COUNTY.

Hakalau.[a]
Hilo.[a]
Holualoa.[a]
Honokaa.[a]
Honomu.[b]
Hookena.[b]
Kailua.[b]
Kamuela.[b]
Kawaihae.[a]
Kohala.[a]
Kukuihaele.[b]
Kurtistown.[a]
Kealakekua.[a]
Laupahoehoe.[a]
Mahukona.[b]
Mountainview.[b]
Naalehu.[a]
Olaa.[a]
Ookala.[a]
Paauilo.[b]
Paauhau.[b]
Pahala.[a]
Papaaloa.[a]
Papaikou.[b]
Pepeekeo.[a]
Waiohinu.[b]

MAUI COUNTY.

Hamakuapoko.[b]
Hana.[b]
Kahului.[b]
Kamalo.[b]
Kaupo.[b]
Kihei.[b]
Kipahulu.[b]
Lahaina.[a]
Makawao.[b]
Paia.[a]
Puunene.[a]
Wailuku.[a]

KALAWAO COUNTY.

Kalaupapa.[b]

OAHU COUNTY.

Aiea.[a]
Ewa.[a]
Haleiwa.[b]
Honolulu.[a]
Kahuku.[a]
Wahiawa.[b]
Waialua.[a]
Waianae.[b]
Waimanalo.[a]
Waipahu.[a]

KAUAI COUNTY.

Eleele.[a]
Hanalei.[b]
Hanapepe.[b]
Kealia.[a]
Kekaha.[a]
Kilauea.[a]
Koloa.[a]
Lihue.[a]
Makaweli.[a]
Waimea.[a]

Money-order business transacted at the Honolulu post-office during the year ended June 30, 1905.

	Number.	Amount.	Fees.	Total.
Domestic orders issued	21,420	$395,505.43	$1,993.11	$397,498.54
International orders issued	5,531	122,954.43	884.09	123,838.52
Remittances from other offices				2,158,541.81
Total	26,951	518,459.86	2,877.20	2,679,878.87

Value of orders paid and repaid (60,835)	$1,825,899.43	
Transmitted to depository	844,797.41	
		$2,670,696.84
Balance on hand July 1, 1905		9,182.03
Total		2,679,878.87

International orders and amount issued in the Territory on Japan, China, and the Australian colonies.

	Orders.	Amount.
Payable in Australian colonies	242	$3,637.70
Payable in New Zealand	118	2,196.30
Payable in Hongkong	13	316.00
Payable in Japan	15,281	383,258.30
Total	15,654	394,408.30

COMPARISON OF MONEY-ORDER BUSINESS OF 1905 WITH THAT OF 1904.

1. There were 1,290 less domestic orders issued.
2. There were 85 more international orders issued.
3. The amount of domestic orders issued, $397,498.54, represents a decrease of $11,720.
4. The amount of domestic and international orders paid and repaid, $1,825,899.43, represents a decrease of $148,724.54.

[a] Domestic money-order offices. [b] International money-order offices.

5. The amount received in fees was $674.03 less than in 1904.
6. The average amount of each domestic order issued was $18.46.
7. The average amount of each international order issued was $22.23.
8. The average fee on domestic orders was 9 cents.
9. The average fee on international orders was 16 cents.

REGISTRY DIVISION.

The registry system insures safe transit and correct delivery of all mail matter and reaches every post-office in the world. Valuable letters and parcels, and those which the sender wishes positively to know have been correctly delivered, should be registered.

The registry fee is 8 cents for each separate letter or parcel, in addition to the postage, both to be fully prepaid with postage stamps attached. In case of loss the sender or owner of a registered article prepaid at the letter rate of postage mailed at and addressed to a United States post-office is indemnified for its value up to $25.

The following table will show the amount of registry business transacted at this office during the year ended June 30, 1905:

Domestic letters registered with fee attached	13,826
Domestic parcels registered with fee attached	8,677
Foreign letters registered with fee attached	6,519
Foreign parcels registered with fee attached	347
Total number of paid registrations	29,369
Letters and parcels registered free	1,073
Total number of registrations	30,442

Amount collected for registry fees, $2,349.52.

As compared with a similar statement of the volume of business transacted during the fiscal year ended June 30, 1904, these figures show increases and decreases as follows:

Increase in domestic letters registered	2,704
Decrease in domestic parcels registered	208
Decrease in foreign letters registered	924
Increase in foreign parcels registered	2
Increase in free registrations	101
Net increase in articles registered with fee paid	1,574

Increase in registry fees, $125.92.

One feature of the registry system which seems to be not fully understood by residents of Honolulu is that letter carriers receive for registration any letter or parcel mailed at the letter rate of postage and sender is given a receipt therefor. This may explain why so few letters are registered by carriers on their respective routes, there being but 106 letters and parcels received by carriers for registration during the year.

During the year ended June 30, 1905, the registry division handled 147,982 pieces of registered mail, as against 141,780 pieces for 1904, showing an increase of 6,202 pieces.

RAILWAY-MAIL SERVICE.

The transportation of all mails in the Territory is under the office of the honorable Second Assistant Postmaster-General and in charge of an assistant superintendent of the railway-mail service, located at Honolulu, who supervises the details connected with this branch of the service.

As was the case in preceding years, so last year the local steamboat routes covered all navigable waters in and around the different islands. Every landing in the islands is touched by some mail steamer.

All steamers plying between Hawaiian ports carry the mail. The star route and mail messenger service on the islands is so arranged as to connect with mail steamers at any time, whether on a regular schedule or at irregular intervals. At the first port at which a steamer lands on any island telephone communication is had with all post-offices on that island advising as to mails carried on that steamer and at what point they will be landed; with this

information the carriers meet the steamer and take the mails to destination without delay.

Summary of mail service in operation in Hawaii on June 30, 1905.

Service.	Routes.	Miles.	Cost.
Star	27	565.62	$19,608.00
Steamboat	13	13,981.00	85 000.00
Railroad	4	108.05	3,550.38
Mail messenger	17	73.49	4,340.00
Special office	1	1,400.00	
Total	62	16,128.16	112,498.38

The above does not include 31 routes of gratuitous mail messenger service, with a total length of 39.80 miles.

FREE-DELIVERY SERVICE.

Free delivery was established at the Honolulu office on August 13, 1901, with 9 letter carriers and one collector, and at that time between Liliha street and McCully street, and from the water front to Wilder avenue and as far up Nuuanu Valley as Judd street. At that time all carriers were unmounted and made deliveries afoot, using the car lines to and from their respective routes. Since the above date the service has been extended to cover additional territory, and at this date there are 11 carriers and 2 collectors; 8 carriers have carts, 1 the use of a bicycle, and 4 foot carriers, and practically all of the city from Diamond Head to Moanalua and from the water front to the electric-light station in Nuuanu Valley is served by carriers.

SPECIAL-DELIVERY SERVICE.

Immediate delivery is made by messenger to all parts of the city within letter-carrier limits of letters and parcels bearing a 10-cent special-delivery stamp, in addition to the lawful postage.

Special delivery can only be effected by the use of the special-delivery stamp.

PARCELS POST.

Parcels post affords the only channel for the legitimate exchange of packages of miscellaneous merchandise by mail between different countries. That the service is appreciated is evident by the increasing volume of business in this particular branch of the service.

During the fiscal year ended June 30, 1905, there were dispatched from this office 385 parcels, with a total weight of 644 pounds, an increase in the number of parcels of 353 and an increase in weight of 604 pounds. During the same period there were received 1,407 parcels, with a total weight of 2,905 pounds, an increase in the number of parcels of 1,360 and an increase in weight of 2,794 pounds.

Customs duties amounting to $1,664.60 were collected on 808 dutiable importations through the mails from July 1, 1904, to June 30, 1905, and, in addition to this number, 29 dutiable parcels were either forwarded or returned to senders.

STATIONS.

Three numbered stations have recently been ordered established under jurisdiction of the Honolulu post-office, to become effective October 1, 1905. At these stations postage stamps and stamped paper of all kinds will be on sale, money orders may be purchased, and letters and parcels registered. It is anticipated that the establishment of these stations will prove a great convenience to the public. Location and numbers of stations will be as follows: Station No. 1, corner of River and Hotel streets; station No. 2, 1872 King street (Kalihi); station No. 3, corner of King and McCully streets.

POST-OFFICE INSPECTOR.

The post-offices in the Territory of Hawaii are included in the California division, under the supervision of the post-office inspector in charge at San Francisco, and a resident inspector is detailed to Hawaii, with headquarters at Honolulu.

Inspectors are authorized to enter and inspect post-offices at all times and to make such other inquiries and investigations as the interest of the service may demand.

DEAD-LETTER BUREAU.

At the Honolulu office is located a branch of the dead-letter office, a feature of the service which is connected with no other office on the mainland. Owing to the nature of the population of Hawaii and the distance from the mainland being so great, the Department, a short while after annexation, deemed it advisable to establish a dead-letter bureau here. This has proved a great advantage to the residents in Hawaii, as all undelivered correspondence originating in the islands is treated here, thus obviating the long delay which would ensue if such matter were forwarded to Washington, D. C., and then returned to the islands.

During the fiscal year ended June 30, 1905, the dead-letter bureau handled the following undelivered correspondence:

RECEIVED.

Mailable letters	11,378	Foreign prints, etc	3,206
Unmailable letters	1,914	Registered matter	907
Third and fourth classes	376		
Foreign letters	7,719	Total	25,500

Of this number 12,340 pieces were opened and either returned to writers or destroyed, 12,893 pieces were returned unopened, and 267 pieces are now on hand.

In this mail was found letters containing money amounting to $13.34; drafts, notes, etc., $1,157.54; 89 packages of merchandise, 55 photographs, 29 receipts and paid notes, and 58 letters containing stamps.

The annual report of the year 1904 shows receipts of 22,585 pieces, and that of the year 1905 shows 25,500 pieces handled—an increase of 2,915 pieces.

List of post-offices and postmasters.

COUNTY OF HAWAII.

Post-office.	Postmaster.	Post-office.	Postmaster.
Hakalau [a]	Wm. Ross.	Lalamilo	W. Vredenberg.
Hilo [a]	Geo. Desha.	Laupahoehoe [a]	E. W. Barnard.
Holualoa [a]	L. S. Aungst.	Mahukona [b]	E. A. Fraser.
Honokaa [a]	A. B. Lindsay.	Mountainview [b]	E. L. Rackliff.
Honomu [b]	Wm. Hay.	Naalehu [a]	Carl Wolters.
Honuapo	Geo. Dawson.	Napoopoo	R. Wassman.
Hookena [b]	Kate M. Kaai.	Olaa [a]	Jno. Watt.
Hoopuloa	D. L. Keliikuli.	Ookala [a]	W. G. Walker.
Kailua [b]	J. P. Curts.	Paauhau [b]	James Gibb.
Kalapana	D. Koloi.	Paauilo [b]	A. Lidgate.
Kamuela [b]	Moses Koki.	Pahala [a]	T. C. Wills.
Kawaihae [a]	Chas. B. Wells.	Pahoa	W. G. Carpenter.
Kealakekua [a]	Maggie Wassman.	Papaaloa [a]	A. C. Palfrey
Keauhou	H. L. Kawewehi.	Papaikou [b]	G. V. Jakins.
Kohala [a]	Mabel R. Woods.	Pepeekeo [a]	E. N. Deyo.
Kukuihaele [b]	Wm. Horner.	Volcano House	
Kurtistown [a]	A. G. Curtis.	Waiohinu [b]	Anna McCarthy.

COUNTY OF KAUAI.

Eleele [a]	John I. Silva.	Kilauea [a]	Isaac M. Cox.
Hanalei [b]	C. H. Willis.	Koloa [a]	A. Buccholtz.
Hanapepe [b]	H. H. Brodie.	Lihue [a]	Frank Crawford.
Kealia [a]	Jno. W. Neal.	Makaweli [a]	B. D. Baldwin.
Kekaha [a]	Olaf Omsted.	Waimea	C. B. Hofgaard.

[a] International money-order offices. [b] Domestic money-order offices.

List of post-offices and postmasters—Continued.

COUNTY OF KALAWAO.

Post-office.	Postmaster.	Post-office.	Postmaster.
Kalaupapa [a]	Jno. S. Wilmington.	Kalawao	William Clark.

COUNTY OF OAHU.

Aiea [b]	Jas. A. Low.	Wahiawa [a]	L. G. Kellogg.
Ewa [b]	Geo. F. Renton.	Waialee	T. H. Gibson.
Haleiwa [a]	A. Waikoloa.	Waialua [b]	W. W. Goodale.
Heeia	Frank Pahia.	Waianae [a]	Fred'k Meyer.
Honolulu [b]	Joseph G. Pratt.	Waikane	S. P. Kaiwi.
Kahuku [b]	Andrew Adams.	Waimanalo [b]	Arthur Irvine.
Laie	J. Keaulama.	Waipahu [b]	John Travis.
Pearl City	Jno. P. Keppler.	Midway	B. W. Colley.

COUNTY OF MAUI.

Haiku	James Lindsay.	Kihei [a]	James Scott.
Hamakuapoko [a]	W. F. Mossman.	Kipahulu [a]	Andrew Gross.
Hana [a]	Nils Omsted.	Lahaina [b]	Arthur Waal,
Halawa	Emma Kane.	Makawao [a]	Antone F. Tavares.
Honokahau	R. C. Searle.	Makena	J. M. Napoulou.
Huelo	W. F. Pogue.	Paia [b]	David C. Lindsay.
Kaanapali	Frank Stark.	Peahi	George Groves.
Kahului [a]	R. W. Filler.	Pelekunu	Jennie Kapahu.
Kalae	Ellen Sobey.	Pukoo	Andrew T. Bannister.
Kamalo [a]	D. McCorriston.		
Kaupo [a]	M. H. Kane.	Puunene [b]	H. P. Baldwin.
Keanae	J. W. K. Halemano.	Waiakoa	Joaquin Vincent.
Keomuku	Chas. Gay.	Wailuku [b]	V. A. Vettleson.

[a] Domestic money-order offices. [b] International money-order offices.

FEDERAL LAW WORK.

[By Robert W. Breckons.]

During the fiscal year ended June 30, 1905, 67 criminal cases were instituted in the Federal court in Hawaii, and during the same period 64 were terminated. Of the cases terminated, 3 arose under the customs laws, 14 under internal-revenue laws, 9 under postal laws, and 38 under miscellaneous laws. Cases were terminated as follows: Fifty-one convictions, 3 acquittals, and nolle prosequi entered in 9 cases.

Of the miscellaneous cases, many were charges of conspiracy, based on section 5440, Revised Statutes of the United States. This section is utilized to prevent and punish, as far as possible, the sale of women in the Territory. In many cases the women themselves are not averse to sale—in fact, in more than one case coming under my observation the woman arranged the sale. Under these circumstances a charge of slavery can not be made.

Inasmuch as the Edmunds Act is in force in the Territory, the charge is made that the husband and purchasers, together with the "go-betweens," conspired together to have the crime of adultery committed between the wife and the purchaser. In some of the cases, however, downright slavery is shown to exist. During the year convictions were obtained against two defendants for holding a girl to a condition of slavery, and the evidence established beyond a doubt that a girl, when about 12 years of age, had been purchased, and for five years had been literally forced to act as a prostitute. At the time of the arrest of the men this girl, then about 17, was a physical, a mental, and a moral wreck.

During the year, at the suggestion of the Attorney-General of the United States, an investigation was made on the Mormon question in so far as the Territory was concerned. It had been stated to that official that at Leia there was a large settlement of Mormons, and that polygamy was generally practiced. The investigation was made by the district attorney, and later the matter was called to the attention of the grand jury. That body had subpœnaed several

prominent gentlemen well acquainted with conditions at Leia. All were agreed on the proposition that no polygamy was practiced, and even went to the extent of saying that one individual was excommunicated from the church because he lived with two women.

During the year 7 civil cases, in which the United States were parties, were terminated—4 customs, 1 post-office, and 2 miscellaneous. Of these 2 were discontinued on settlement and 5 resulted in judgments in favor of the Government. On these judgments were collected $27,455.08, and $1,500 by compromise.

This department has had a great deal of work to do during the year in looking up titles to land. The Government is acquiring considerable property in the islands for various purposes. Before this land can be paid for a certificate of title must be secured from the Attorney-General of the United States, who is assisted in the matter by the district attorney. Inasmuch as land titles in the Territory are not as clear as they might be, considerable work is necessary to get at the facts. In several instances titles were found to be so faulty that friendly condemnation suits became necessary.

In passing it might be noted that Government agents securing land have in every case but one been able to secure the land desired at reasonable prices, thus avoiding the delay and vexation incident to a condemnation suit, and I am inclined to believe the one exception will be compromised before trial.

LIGHT-HOUSE ESTABLISHMENT.

[By A. P. Niblack, Lieutenant-Commander, U. S. Navy.]

The following improvements have been made by the inspector's department of the Hawaiian division of the Twelfth light-house district during the fiscal year ended June 30, 1905:

CHANGES IN LIGHTS.

The intensity of the light was increased by substituting a lens lantern in place of the former inadequate lantern at each of the following light stations: Laupahoehoe Point, Hawaii; Paukaa Point, Hawaii; Cocoanut Point, Hilo, Hawaii; Kewaihae, Hawaii (second change); Mahukona, Hawaii; Kanahena Point, Hawaii; Lahaina, Maui; Honolulu range, rear, Oahu.

The intensity of the light was increased by substituting a post lantern in place of the former inadequate lantern at each of the following light stations: Kawaihae, Hawaii (first change); Maalaea, Maui; Kaunakakai range, front, Molokai; Kaunakakai range, rear, Molokai.

New and improved fourth-order lamps were substituted for the former ones at Lae o Ka Laau Point, Molokai, and Barbers Point, Oahu, light stations.

The color of the light was changed from white to red at Laupahoehoe Point, Kawaihae, and Maalaea light stations. New structures have been erected by the assistant to the engineer of this district at Laupahoehoe Point, Kanahena Point, and Lahaina light stations, and repairs of a more or less extensive nature made at the following light stations: Laupahoehoe Point; Lahaina; Paukaa Point; Kaunakakai range; Cocoanut Point; Lae o Ka Laau Point; Kawaihae; Honolulu range, front; Kauhola Point; Honolulu range, rear; Kanahena; Barbers Point; Maalaea; Nawiliwili Harbor; light-house depot at Honolulu; Pearl Harbor entrance range beacons.

On May 8 the expense of supplying the current for the electric arc light at the Waiakea light station, Hilo, formerly borne by the Territorial government, was assumed by this department.

BUOYS ESTABLISHED.

The following buoys have been established during the fiscal year ended June 30, 1905: Blonde Reef whistling buoy, Hilo Bay, Hawaii; Blonde Reef southwest end buoy, No. 3. a second-class can, Hilo Bay, Hawaii; Maalaea Anchorage bell buoy, Maalaea Bay, Maui; Kamalo Point Reef bell buoy, southeasterly side of Molokai; Pearl Harbor entrance buoy, No. 1, a second-class tall-type can, Oahu; Pearl Harbor entrance buoy, No. 2, a second-class tall-type nun, Oahu; Pearl Harbor entrance buoy, No. 3, a second-class can, Oahu; Pearl Harbor entrance buoy, No. 4, a second-class nun, Oahu; Middle Loch Shoal buoy, a HS. second-class can, Pearl Harbor, Oahu; Kalanipuao Rock buoy, a HS. first-class can, off the southerly coast of Kauai.

BUOYS DISCONTINUED.

Blonde Reef buoy, Hilo Bay, Hawaii, a second-class nun, was discontinued and a whistling buoy substituted; Pearl Harbor mid-channel entrance buoy, a PS. second-class can, was discontinued and instead the entrance of this channel was marked by buoys Nos. 1 and 2.

MISSING BUOYS REPLACED.

The following buoys, missing previous to January 1, 1904, the date upon which the Hawaiian light-house establishment was turned over to the United States, were replaced during the year: Kaunakakai mid-channel entrance buoy; Kaunakakai entrance buoy, No. 1; Kaunakakai entrance buoy, No. 2; Kaunakakai entrance buoy, No. 3; Peninsula Point Shoal buoy, No. 17, Pearl Harbor; Ford Island Spit buoy, No. 19, Pearl Harbor.

All the buoys in the Hawaiian Islands have been overhauled, cleaned, and painted; all in and about Honolulu Harbor have been replaced with new and improved types; all the aids in Pearl Harbor were improved and numbered in sequence, and throughout the buoyage in this subdistrict has been put in good condition; improvements have been made at most of the light stations, and they have been well maintained. The entire cost of maintaining this branch of the light-house department amounted to $21,821.32.

FEDERAL EXPENDITURES.

[By J. R. Slattery, first lieutenant, Corps of Engineers, U. S. Army.]

LIGHT STATIONS.

Beacon lights have been reconstructed at the following places at the amounts stated: Laupahoehoe Point, Hawaii, $481.50; Kanahena Point, Maui, $976.16; Lahaina, Maui, $1,396.91.

Minor repairs and improvements were made to the various lights at other points.

The total amount expended on this work during the fiscal year was $7,196.69.

FORTIFICATIONS.

Sites for fortifications in the Hawaiian Islands have been acquired during the fiscal year at a total expenditure of $129,962.13. Negotiations were also carried on for the acquisition of additional sites.

RIVERS AND HARBORS.

The river and harbor act approved March 3, 1905, appropriated $200,000 for improving the harbor at Honolulu. Project for expenditure of available funds was submitted, approved, and proposals for bids were advertised for June 20, to be opened July 20, 1905.

A resurvey of the harbor at Honolulu was made during the fiscal year, at an expenditure of $1,404.75.

IMMIGRATION SERVICE IN HAWAII.

[By F. M. Bechtel.]

The new immigrant station was opened on July 3, 1905. Theretofore the executive offices of the immigration service had been located in practically one room of the appraiser's building. The quarters for detained immigrants and the station for examination and other work in connection with new arrivals were located on channel wharf. Needless to say, the old accommodations for the work were entirely inadequate. The new home of the service, by contrast, is nothing short of ideal, everything being under one roof, and the arrangement and equipment are perfectly adapted for the purposes sought to be accom-

plished. The executive offices are spacious, airy, and light. The Chinese division has waiting rooms for Chinese who act as witnesses in cases. After giving their testimony they may step out onto one of the broad porches which surround the building, there to enjoy the cool breezes until their friends are ready to accompany them. There are seven large rooms or dormitories, equipped with modern iron standees, or beds of woven wire, furnishing sleeping accommodations for 400 persons should emergency arise.

Adjacent to the dormitories are two rooms used as a hospital for arriving aliens requiring immediate medical treatment. On the ground floor are numerous shower baths, sinks, and closets for both sexes, with up-to-date sanitary appliances. In the rear of the building, on the ground floor, is a large dining room with a seating capacity for 200 persons. Adjoining is a spacious kitchen with sinks and pantries. The kitchen is provided with a large United States army range. A completely equipped photographic operating and dark room and large baggage room are also features of the new station.

At this time the work of filling in the land on which the immigrant station is located is rapidly approaching completion. Sodding the land and the planting of alligator pear, papaia, banana, and other trees is contemplated, so that ultimately the property will present an attractive appearance and become one of the beauty spots of the Kakaako district in Honolulu.

The immigration service in Hawaii, of which Honolulu is the port of entry and departure, as at other ports, is charged with the administration of the general immigration laws and of the laws and regulations relating to the exclusion of Chinese. This work is exceedingly important, and, owing to the peculiar geographical location of Hawaii, presents many questions requiring a high order of administrative discrimination and judgment. Japanese and Koreans are the only two classes of aliens who present themselves for admission in any great numbers. The lure to Hawaii for these Asiatics is the opportunity for immediate employment in the sugar-raising industry, which offers to them better wages and homes than they can find in their native lands. Under the provisions of existing laws Chinese laborers are, of course, excluded from the United States. Registered Chinese laborers, however, are permitted under certain conditions to depart for visits to their native land and return to Hawaii.

With a Chinese population of 20,000 in this Territory, the work of the Chinese division is very heavy, for in addition to hearing and investigating the claims of Chinese applicants for return certificates there is much labor connected with determining the status of such Chinese as claim to be members of the exempt classes, or Hawaiian-born, and as such, entitled to the privileges which the laws afford to such excepted classes. This work is performed by the inspectors and involves the taking of considerable testimony, as well as personal investigations locally, or, in many instances, on the various islands of the group.

From January, 1903, to the close of the current fiscal year there arrived at this port 7,388 Korean aliens. During the same period 18,027 Japanese arrived, and 816 Chinese of the various classes applied for readmission.

The immigration service in Hawaii has greatly increased since annexation, with the result of greater efficiency in administration of all departments of the work. At the present time there are five inspectors, whose commissions authorize them to act alternately as immigrant and Chinese inspectors, and who are assisted by a force of watchmen, Japanese, Chinese, and Korean interpreters, and a matron.

All arriving aliens are subjected to a medical examination to determine the presence of any loathsome or dangerous contagious disease. As provided by the immigration laws, this part of the work is performed by the officers of the Public Health and Marine-Hospital Service. Proper facilities for this work are provided at the new immigrant station.

The immigration service at the port of Honolulu has an arrangement by which the launch *Waterwitch* is at its disposal at all times as a boarding launch, and all vessels arriving at the port are boarded by an immigrant inspector for the purpose of determining the admissibility of any aliens seeking a landing. The boarding officer also performs various other functions required by the regulations.

Statistics are here furnished regarding the immigration of aliens to the port of Honolulu for the fiscal year ended June 30, 1905, as follows:

Arrivals for fiscal year ended June 30, 1905.

Month.	Japanese.	Chinese.	Koreans.	Miscellaneous.	Total.
1904.					
July	569	35	382	9	995
August	203	28	286	5	522
September	311	31	396	9	747
October	318	20	151	12	501
November	782	30	403	9	1,224
December	297	15	294	6	612
1905.					
January	505	3	583	6	1,097
February	1,147	3	533	5	1,688
March	312	----	148	4	464
April	763	6	467	3	1,239
May	473	27	1,003	18	1,521
June	261	9	92	23	385
Total	5,941	207	4,733	109	10,995

Of the above arrivals there were held for action by the board of special inquiry the following number of cases:

Japanese	527
Koreans	366
Other nationalities	7
Total	900

Of these there were deported to the country whence they came, for the causes given, the following:

Nationality.	Dangerous contagious diseases.	Liable to become public charges.	Alien contract labor.
Japanese	106	16	1
Koreans	23	2	----
Other nationalities	----	7	----
Total	129	25	1

The balance of those detained for the board of special inquiry were principally women, and children held for the arrival of their natural guardians, to whom they were released in due time.

The falling off in alien arrivals at Honolulu during the past few months it is believed is due in a large degree to the diversion of Japanese immigration to Korea and Manchuria, new spheres of Japanese influence, the policy of the Japanese Government being also toward the restriction of emigration of the Koreans themselves.

The abuse of the confidence of their home Government by Japanese securing passports to Hawaii as their ostensible destination, while in reality they intended to, and ultimately did, proceed to the mainland of the United States, may also have considerable to do with the diminished number of arrivals during the past few months, the Japanese Government having taken cognizance of this deception.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

[By Dr. S. E. Cofer.]

Congress has imposed upon our United States Public Health and Marine-Hospital Service Corps in Hawaii maritime quarantine, epidemic work, medical relief to the merchant marine, the examination of all aliens entering the United

States, general medical and bacteriological research, the collection, tabulation, exchange, publication, and general distribution of sanitary news and statistics, other miscellaneous duties almost too numerous to mention, and finally the investigation of leprosy. Although this Service applies in a greater or less degree all of its functions to the public benefit of Hawaii, the importance of the latter place from a quarantine standpoint has awakened a special interest on the part of Surgeon-General Wyman, so that in the interest of the whole country much liberality has been extended in the making of a quarantine service at this port commensurate with the probable requirements.

The more important Hawaii becomes as a military mobilization point, naval strategic base, and commercial port of call, the more important will it become in the eyes of the medical world as a possible disease center. Therefore, to the Public Health and Marine-Hospital Service falls the task of protecting not only Hawaii, but the mainland and insular possessions as well, from the infection possible under present and future conditions.

The geographical position of Hawaii in its relation to the principal ports of North America and Asia is not unlike that of the hub of a wheel, surrounded by a tire of such places as Manila, Hongkong, Shanghai, Nagasaki, Kobe, Yokohama, Port Arthur, Vladivostock, Victoria, Portland, Port Townsend, San Francisco, Acapulco, Salina Cruz, Panama, and to complete the circle, Auckland and Sydney. Let the various lines of travel represent the spokes and we have a disease radius offering unlimited possibilities for the infection of the central point, Honolulu. The people of Hawaii, taken as a whole, are familiar with the quarantine and are not unappreciative of its advantages. This fact makes it much easier to exercise proper vigilance. Indeed, it would be difficult to find a community more ready to lend intelligent and substantial aid to the work of preserving their sanitary integrity. In anticipation of the growing need therefor, Honolulu will be equipped with a very large and complete quarantine station before another year has passed.

The equipment will include a large wharf especially constructed and arranged for the treatment of infected vessels, a runway connecting the wharf with the station proper, a sea wall surrounding the station proper, and the buildings and appurtenances sufficient for the proper handling of 30 sick persons, 100 first-cabin passengers, 300 second-cabin passengers, 1,600 troops, and 600 immigrants. The buildings are new and are kept in a state of perfect order and preparedness. The hospital and detention facilities are absolutely first class. The station is equipped with a bacteriological laboratory, dispensary, crematory, electric-light plant, its own telephone system, and in the near future will have a steam laundry. When all of the contemplated improvements are made Honolulu will have the finest quarantine station in the world.

During the past four years 1,826 vessels, carrying 98,564 persons, have been inspected, 27 persons have been sent to the quarantine station on account of quarantinable disease, 14,390 have been held as suspects, and 23,438 pieces of baggage have been disinfected.

On account of actual or supposed infection, 280 ships have been disinfected and a vast amount of other work performed which it is not necessary to mention further.

In all our work we have been given much valuable aid by the board of health and the public works department of the Territory of Hawaii, and this acknowledgment is made with thanks. I believe that with the increase in oriental commerce and the development of the Panama and Isthmus of Tehuantepec projects the problem of quarantine and sanitation here in Honolulu is destined to grow to a point where the ingenuity of both the Public Health and Marine-Hospital Service and the board of health will be taxed to its utmost if a proper health status is preserved. The people of Honolulu can make no better investment than to give cooperation and support to the two organizations just named and carry out individually any measures devised by them for the public good.

CLIMATE AND CROP SERVICE.

[By Alex. McC. Ashley.]

During the months of July and August, 1904, office quarters for the Hawaiian weather bureau of the United States Department of Agriculture were secured and furnished in the Alexander Young Building, Honolulu, the necessary instrument platforms were constructed on the King street tower of the building, and

a complete equipment of meteorological instruments of standard pattern was installed. A note as to the character of this equipment may be of interest. On a substantial platform, 16 feet square and 6 feet above the roof, is an 18-foot wind vane and anemometer support of steel, upon which are exposed a 6-foot wind vane and a Robinson anemometer. On another portion of the same platform is located a standard instrument shelter, in which are exposed maximum, minimum, wet-bulb, and dry-bulb thermometers and a Richard Fréres thermograph. On the roof of the shelter is an electrical sunshine recorder. On smaller platforms are a 12-inch self-recording rain gauge, an 8-inch stick rain gauge, and a nephoscope.

In the office rooms are mercurial barometers, a Richard Fréres barograph, a meteorograph (quadruple register), and a complete duplicate set of instruments displayed for the benefit of visitors. The wind vane, anemometer, 12-inch rain gauge, and sunshine recorder on the roof are connected electrically with the meteorograph in the office, records being thereby automatically secured of the direction of the wind every minute, the velocity and time of occurrence of each mile of wind passing over the station, the time at which each one-hundredth of an inch of rain falls, and the exact time of occurrence of all sunshine. From the thermograph in the instrument shelter and the barograph in the office quarters are secured continuous records of all variations of temperature and atmospheric pressure.

The observatory in the Young Building has been in uninterrupted operation since September 1, 1904, on which date, by previous arrangement, the records and instruments of the Territorial meteorological service were formally transferred to the United States Weather Bureau, and the former service ceased to exist, its duties being then assumed by the Federal Bureau. Beginning with September 1, 1904, complete sets of eye readings of all the observatory instruments have been made at twelve-hour intervals, and the results have been cabled at 8 a. m. and 8 p. m. daily to the central office of the United States Weather Bureau in Washington, D. C., for publication on the national weather map. By an elaborate system of telegraphic relays, the cable messages have also been received daily at a great number of the more important local offices of the Weather Bureau in the mainland States and Territories.

The data obtained by eye observation from the self-recording instruments have been tabulated and presented to the general public in the shape of daily and monthly reports appearing in the newspapers, the publications of our local station, and the publications of our central office in Washington, D. C. The records have also at all times been available in the Honolulu office for consultation by interested parties. During the past ten months Honolulu weather data has been supplied by mail to many applicants in the United States and elsewhere. In this connection it may be well to advise you of a fact, not generally known, concerning the status of our records in courts of law, viz, that the United States Supreme Court has decided (case of Evanston *v.* Gunn, October, 1878) that the record kept by a person employed in the Weather Bureau of the United States, whose public duty it is to record truly the facts therein stated, is competent evidence of such facts. Duly certified copies of Weather Bureau records are therefore furnished to applicants who desire them for legal purposes.

As you are aware, the Territorial meteorologist, in addition to his observation work in Honolulu, collected and published reports of temperature and rainfall at various points in the islands, these reports being supplied by public-spirited citizens, cooperating without salary or other compensation, many of them, indeed, maintaining their own instrumental equipments. At the time the Territorial service went out of existence, rainfall reports were being received from 101 points and temperature reports from 9 points. With these as a valuable nucleus, the Federal office has developed a Hawaiian section of the climate and crop service of the Weather Bureau, the section center being the Honolulu office of the Weather Bureau. During the past year a great many new instruments of standard pattern have been issued to cooperative observers, at the present writing 142 rainfall and 50 temperature reports being received monthly at the section center. In addition to the increase along these lines, we have secured the cooperation of 63 crop correspondents in various sections of the islands, who render weekly reports on the character of the weather in their respective localities, the effect of this weather on the growing crops, the present condition of the crops and their promise, and the agricultural operations in progress.

From the beginning of the present calendar year the Honolulu office of the United States Weather Bureau has published this climatic and crop information

in the form of 1-page weekly and 10-page monthly bulletins, which are mailed gratis to all interested parties who apply for them.

The weekly bulletin is compiled from the weekly reports of the cooperating crop correspondents, and consists of a single large sheet upon which are printed the remarks of the various correspondents and a general summary of the present crop situation. As the value of this information depends to a great extent upon the promptness with which it is disseminated, the reports, which reach Honolulu on Saturday afternoon or Sunday, are immediately digested, and the printed bulletin is ready for mailing on the following day. The newspapers of Honolulu reproduce the weekly bulletins in extenso, thereby insuring a complete distribution.

The Monthly Bulletin merits a detailed description, as in it we aim to place, in permanent and easily accessible form, complete statistics concerning climate and crop conditions throughout the group. It contains:

(1) In text form, a careful survey of the weather and crop conditions which have prevailed in the various sections of the islands during the month; also temperature, precipitation, and other averages for the separate islands and for the group, with especial reference to the places and times of occurrence of extremes.

(2) In tabular form, records from 50 stations of daily maximum temperatures, daily minimum temperatures, monthly mean temperatures, highest and lowest temperatures and dates of occurrence, greatest daily ranges of temperature, number of clear, partly cloudy, and cloudy days, and prevailing wind directions.

(3) In tabular form, records from 142 stations of daily amounts of precipitation, monthly amounts, departures from normal in all cases where records of sufficient length are available, and greatest twenty-four hour rainfalls during the month.

(4) Four pages of maps, printed in three colors, showing graphically the monthly distribution of temperature, rainfall, and wind direction for each island.

It is the intention of this office also to issue an annual bulletin of monthly and annual values at the close of each calendar year.

During the coming year our work will be developed along the lines indicated by the work of the present year. Ultimately, when sufficient data has been collected, a detailed climatology of the Hawaiian Islands will be written and will issue as a Government publication.

In closing this report, I desire to make public acknowledgment of the many courtesies which have been extended to the Federal Weather Bureau, during the initial year of its existence in the islands, by Governor George R. Carter, by Secretary A. L. C. Atkinson, by Prof. Curtis J. Lyons, and Mr. Robert C. Lydecker (the former Territorial meteorologists), Mr. Walter E. Wall, of the Hawaii Territory survey, and the many cooperative observers and crop correspondents whose voluntary services have been so material to our success.

BANANA INDUSTRY OF HAWAII.

[By H. Vicars.]

The growth of a country depends upon what may be obtained from the soil, and Hawaii affords no exception to this absolute fact. At present we have but one industry, and in view of the governor's opinion, as expressed in his last annual report, wherein he says "with the largely increased world production of sugar, it is only with difficulty that cane can be grown here with profit," it is astonishing to note what little support and encouragement is given the banana industry.

There is perhaps no industry carried on in our district or county in such an irregular and haphazard manner as that of the recently started banana industry. Yet possibly there is no industry that would yield greater profits and do more to increase the prosperity of a town and district, provided it was carried on intelligently and it received only a small quota of the encouragement that our principal industry has received.

With ordinary care in cultivation, intelligent methods in packing and handling, and a semimonthly steamer service, this business could be made in the Hilo district alone to return, within twelve months' time, $20,000 per month. Our climate is perfect, the soil is excellent for raising the most luscious variety of

bananas, and our nearness to a market is another important advantage. With our natural advantages there is no reason why Hawaii should not be supplying the entire market of the Pacific coast.

Three years ago only 1,700 bunches of bananas were shipped during the whole year. During 1904 the shipments amounted to 45,335 bunches, or an average of 4,533 per month for ten months, the local steamer *Enterprise* making only ten trips in the year. For the year ended June 30, 1905, there were shipped 62,721 bunches. During the first seven months of this year the *Enterprise* made six trips to San Francisco and carried on an average 7,158 bunches, and in one instance there were left over 2,000 bunches. The steamer can carry 7,000 bunches only, while 10,000 bunches are now raised.

The area now planted to bananas, as shown by the records of the Hilo Agricultural Society, is approximately 1,000 acres, sufficient to produce over 20,000 bunches per month. Owing to the inadequate steamer service, and unsatisfactory marketing of the fruit some of the lands have been diverted to sugar cane and pineapples, yet the banana area has increased.

Notwithstanding this rapid growth, the marketing of the crop is in a chaotic condition and the shipping facilities inadequate. The one steamer makes the round trip to San Francisco in five weeks, and, there being no other shipping medium, a large percentage of the crop ripens between trips and is a loss to the growers, who are of various nationalities—American, Japanese, Portuguese, and Hawaiian—and who ship independently to as many commission houses as exist in San Francisco. They ship the fruit in various conditions—overripe, green, diseased, and undersized bunches—and the packing and handling is just as erratic. The natural sequence is universally low prices and an unenviable reputation for the fruit leaving our port.

A very excellent plan for starting the banana industry and placing it upon a firm basis was formulated by leading members of the Hilo Agricultural Society in June, 1904. Had it not been for the difficulty in making growers see that the success of their efforts as growers depended solely upon just such organized plans they would to-day be in an unassailable position, with their industry as firmly established as the sugar industry.

The most urgent need of growers at the present time is for two steamers running between here and the coast on schedule time. This would enable those in the business to ship all their product and would also stimulate the industry.

Certain facts should be made known, not only to the natives and those of other nationalities dwelling in the Territory of Hawaii, but to the people of the mainland, especially those who may be seeking for an opportunity to make a living by cultivating the soil. Here, on Hawaii, the opportunity exists. The Anglo-Saxon will run no risk of being sunstruck in cultivating bananas or pineapples, a danger that is advanced by those who argue that he can not work in cane fields. The demand for bananas has steadily increased until now they are considered one of the staples—a necessity. No other industry can offer greater inducements for settlers, and it is well adapted for people of moderate means.

To illustrate, one small planter's experience will be given. This planter has 4 acres in bananas, and during the six months ended June 30, 1905, he sold for cash 1,000 bunches at an average price of 25 cents per bunch, or $250 altogether. Had this man 10 acres in bananas his annual income, in spite of the chaotic state of the industry and the consequent low returns, would have been $1,250. The expense of cultivating the 10 acres, including fertilizer, would be approximately $300. The labor would be mainly performed by the grower, aided during a portion of the year by an intelligent helper. When the plants have been growing for six months the shade produced reduces the time necessary in weeding by about two-thirds.

There are thousands of acres in our district suitable for growing desirable fruit which might be opened for settlement for a class of people who, were it made known to them, would gladly turn to Hawaii as a desirable place to live in and bring up their children. This locality needs the kind of communities New England gave to the West rather than immigration from foreign-speaking nations.

VANILLA.

[By Edward H. Edwards.]

One of the principal features in connection with the development of the vanilla industry in Kona, Hawaii, during the past year has been the consensus of opinion by experts as to the commercial value of the beans produced in that

locality, and it is gratifying to be able to note that they have been highly commended, both as the result of chemical analysis and by those directly interested in the many uses to which the fragrant bean is applied.

It is not to be expected that the Hawaiian-grown vanilla will at the outset commend itself to the wholesale purchaser of high-class beans in the same ratio as does the firmly established Mexican, for be the quality never so good there is always a prejudice against a new product, be it what it may. But as the Hawaiian vines mature, so will the quality of the bean improve, and seeing that the character of the beans already produced is admitted to be a good second to those which now command the highest price in the American market, it may be inferred without being optimistic that in the near future Hawaiian-grown vanilla beans will hold their own against all comers. The early crystallization that takes place in the locally grown bean is in itself a warrant of its excellent quality; moreover, in every family into which the essence made from this product has been introduced it has "come to stay." Statistics as to the demand for vanilla beans in the United States show that the importations are taking giant strides. In 1903 their value, as passed through the customs, was computed at $1,032,654; in 1904, $1,424,647.

The past year may be looked upon as a test of the staying power of the vines in seasons of drought, inasmuch that the Kona district was visited by an abnormal spell of dry weather. The vines themselves did not appear to suffer in any way, but many of the flowers were not as strong as they would have been under ordinary conditions. With the advent of rain the blossoms assumed their usual strength, and the vines commenced to make wood for next year's crop.

Considerable interest is being taken in the industry, both in this Territory and on the coast. The present difficulty is the obtaining of cuttings, many inquirers preferring to wait until they can obtain acclimatized slips instead of importing them. The "Vanilla Park estate," of 98 acres, has recently been incorporated, and 100 acres adjoining are now being cut up into about 5-acre lots to enable the small capitalist and others interested to embark in the enterprise. The whole "Vanilla Valley" has been leased with a right-of-purchase clause, so that the prospect of a vanilla-growing colony in Kona in the not distant future is fairly well assured.

RUBBER INDUSTRY.

[By R. H. Anderson.]

For several years it has been thought by many people in Hawaii that rubber trees could be grown for profit in many parts of the Territory. Seeds have been obtained and planted from time to time, with the result that many of the finest shade trees in Honolulu are rubber trees of the Ficus variety.

In 1898 Mr. Hugh Howell, of Nahiku, Maui, obtained some seeds of the *Manihot glaziovii* (Brazilian), and planted them in Nahiku. These seem to be the first trees of any commercial species that have been tried.

In 1904 R. H. Anderson, a tourist familiar with rubber culture, was shown the trees, and found, by tapping them, that they yielded a large amount of rubber, which was pronounced by San Francisco manufacturers to be of superior quality.

Upon this showing several business and professional men in Honolulu purchased about 800 acres of land in Nahiku, and the Nahiku Rubber Company (Limited) was incorporated on January 24, 1905, with a capital stock of $150,000.

The few seeds immediately available were planted, and in five months some of the plants had attained a height of 7 feet. One hundred thousand seeds (*Manihot glaziovii*) were imported in May, the plants from which are making a satisfactory growth.

Some plants of the *Castilloa nicoyensis* were sent by the Bureau of Plant Industry, Washington, arriving in May. In six weeks these had rooted and attained an average height of 20 inches. Seventeen thousand plants of *Hevea braziliensis* arrived from Ceylon in June, as well as 500 *Castilloa elastica*. They are growing splendidly, although it is too soon to give measurements.

These four principal commercial varieties seem to grow equally well, showing that the country is adapted for the purpose, and the initial results have encouraged others, so that the Koolau Rubber Company has been incorporated, and many individuals contemplate planting their lands to rubber.

The Nahiku Rubber Company has arranged for continuous shipments of *Hevea braziliensis* plants from Ceylon, as well as 50,000 seeds in September, so that they expect to have from 100,000 to 125,000 plants by the end of this year. Their intention is to plant their entire acreage within the next two years. As they have secured the services as manager of a man who is familiar with rubber culture, and have ample funds for carrying out their plans, the results within the next two years should prove conclusively whether or not this modern industry is practicable for Hawaii.

The soil at Nahiku is about the same as that of the Mexican plantations. It is better than that of Ceylon and nearly as good as the soil at the mouth of the Amazon. There are 23 men now employed on the plantation, divided between Portuguese and Japanese. When the tapping season comes, about 80 men will be required. The manager has a contract out for clearing 50 acres at a cost of about $10 an acre, but when it comes to lantana clearing the expense will be $2 or $3 greater.

The plantation is situated 6 to 8 miles from Hana landing, to which a road leads.

HAWAIIAN TANNERY ENTERPRISE.

[By G. J. Waller.]

The first export shipment of Hawaiian tanned leathers was made to San Francisco in February, 1905. It was the result of an inspection of samples by two of the largest boot and shoe manufacturing concerns on the Pacific coast. Among the full samples sent were uppers, laces, and other forms of the local product, mostly for the making of uppers for shoes, while valve leather was also forwarded. Two firms immediately sent orders for all the leather that could be exported. The tannery got together about $700 worth of goods, mostly of the kangaroo and black-sheep variety, and shipped them. Samples were also sent to the Japanese Government, the tannery people believing that the local leathers would make up well in army shoes. A tentative offer was received from Japan for a shipment for trial.

The tannery was started half a year ago at Kalihi, with George Sahlin in charge. Since beginning the new industry the tannery capacity has been twice enlarged.

At the end of the fiscal year, June 30, 1905, the tannery had been in operation less than a year, and, as is customary with manufacturing enterprises, the initiatory period is really no just criterion of what may be expected during subsequent periods, when the proper business bearings have been found and a definite course established.

During the recent operating period we have had to do considerable sounding in the leather markets on the mainland and in the Orient, and the fund of information derived from these inquiries has been both encouraging and profitable. Our circular letters and leather samples have brought responses from very widely-separated points in the United States, and in numerous instances these responses have been accompanied, or followed, by substantial orders.

Besides our local trade we have done business with Fort Worth, Dallas, Denver, Seattle, San Francisco, Los Angeles, and even Boston, the leather market of America, has condescended to praise our goods and favor us with extensive orders—in fact, larger orders than the present capacity of our tannery can supply.

Our sales for the past fiscal period have approximated $19,000, of which amount about $6,000 represents leather products of other tanneries which we do not manufacture but carry in stock as an auxiliary line. Aside from these sales our unsold product in finished state amounted to over $3,500 and our unfinished product to over $9,000, so that the output of our tannery to the end of June can be safely placed at $25,000. While the margin of profit arising from this business period was inconsiderable there is still some satisfaction in knowing that it was a profit, and that fact alone ought to act as a stimulus to future efforts in the direction of further development of the industry.

Some facts are now patent to us which at the outset were somewhat obscure. In the first place, the market for leather is assured—quality and price considered, of course—since the demand for leather goods of all kinds exceeds the supply, and consequently the market continues healthy. Then we find that the climatic conditions prevailing here are favorable, while labor conditions are not

unfavorable to the tannery business, as in several stages of the treatment the hides do not require skilled labor.

Our aim is to introduce all the latest methods known to the trade in the manufacture of leather and to produce an article that shall give as good satisfaction, both in appearance and wear, as any similar article manufactured elsewhere, and with the aid of the latest improved machinery we feel confident of accomplishing such results. In speaking of commodities that are scarce, the Sketch, an English periodical, says in its number for February 15, 1905:

"The third substance is leather, which we learn from the law courts is sometimes replaced by cardboard, but with unsatisfactory results. The demand for boots and shoes is increasing faster than the supply of properly tanned hides, and the consequence is that imperfect and partially cured skins are too often employed."

From the aforegoing we gather much to encourage our local enterprise and feel confident of its becoming a permanent and successful industry.

HONOLULU IRON WORKS.

[By C. Hedemann.]

The Honolulu Iron Works Company was established in 1853 by Mr. D. Weston, the inventor of the suspended centrifugal machine now used in almost all sugar factories. It was first incorporated on December 22, 1876, and reincorporated on December 22, 1896, at which time nearly all the plantation agents in Honolulu became stockholders, and new modern works were erected on land acquired near the harbor front.

The works occupy about 6½ acres and consist of machine, molding, boiler, blacksmith, carpenter, pattern, and coppersmith shops, all of the most modern and improved type, equipped with hydraulic, electric, steam, and compressed-air powers, and electric traveling cranes of 60 feet span in all the principal shops. All the buildings were built and erected by Milliken Brothers, of New York. They are constructed entirely of structural steel material, and the three main shops are each 300 to 400 feet long and 90 feet wide. The number of employees varies from 300 to 600 men, about 8 draftsmen, and a staff of about 15 to 20 clerks and storekeepers.

The large majority of all the new machinery installed in the Territory's sugar factories has been manufactured by the Honolulu Iron Works Company, and all repairs to plantation machinery, pumping plants, steamers and ships, including United States war vessels, have been executed in its shops, excluding almost entirely foreign competition, principally on account of the excellent workmanship, better knowledge of exact local requirements, and reasonable prices. While about a dozen modern mills (crushing plants) of foreign manufacture are at present working in the islands, the Honolulu Iron Works Company has over 30 modern nine-roller mills of their manufacture in operation and 1 twelve-roller mill, besides a number of older types of mills; and they are at present building one 34 by 78 twelve-roller mill to be used in connection with cane cutters and a Krajewski crusher.

They have since 1899 contracted for and wholly or partially designed and built the following modern complete sugar factories in the Hawaiian Islands. The noted cane capacities per diem may be considered present averages as the various mills are worked with different speeds, according to the methods used in the factories, supply of cane, grinding hours, duration of crops, etc.

Oahu, 1,450 tons; Waialua, 1,000 tons; Ewa, 2,000 tons; Olaa, 1,100 tons; Puunene, 2,400 tons; Puako, 200 tons; Hawi, 350 tons; the first five are arranged as far as the buildings are concerned, for increasing the capacity. All of the above factories were recently built except Ewa, which was greatly enlarged, steel buildings were erected over the old wooden ones, and large additional new machinery was installed without delaying or interrupting the continuous working of the old factory. Besides the above, one new factory, to begin with a capacity of 1,000 tons of cane per diem, is now being constructed by the Honolulu Iron Works Company for the Oaxaquena plantation in Mexico, and other new factories are also in hand at present.

As the Honolulu Iron Works Company is located near the plantations, executing all their repair work and building practically now all of their machinery, of whatsoever nature, except such installations as centrifugals, small pumps,

electric plants, and other specialties, it is reasonable to expect that they must have an exceptionally good knowledge of the special requirements of sugar plantations and the proper working of their machinery. It is, however, principally due to the efficient and extensive chemical control in the principal Hawaiian factories that the losses in the various branches of manufacture are being determined and gradually greatly reduced.

RAPID-TRANSIT SERVICE.

[By C. G. Ballentyne.]

During the year ended June 30, 1905, the Honolulu Rapid Transit and Land Company has added to its rolling stock equipment 10 open motor cars of the cross-seat, center-aisle type, each capable of seating 56 persons. They are mounted on maximum traction trucks, and equipped with Westinghouse No. 49 motors, K. 10, controllers and automatic circuit breakers. These cars are being operated on the King street line and add greatly to the comfort of patrons.

During the latter part of 1904 there were erected and equipped with power tools a complete set of workshops, consisting of repair, machine, and blacksmith shops, carpenter shop, and paint shop, where all the company's repair work is now done. These buildings have been substantially constructed, having concrete foundations and floors, and iron walls and roofs, and they are well lighted and ventilated.

In the matter of track construction not very much has been done, the only new work being an extension of the Queen street line from River street to Iwilei road, 895 feet, connecting the system with that of the Oahu Railway and Land Company, and an extension of the King street line from Kamehameha IV road to Kahauiki, 2,300 feet. The War Department having decided upon the establishment of a military post at Kahauiki, the object of this latter extension is to reach that point. This will give the post, which will be situated about 3 miles from the center of the city, a ten-minute service with all parts thereof. It is anticipated that this addition to the system will prove very profitable.

There have been inaugurated a freight and express service, the latter being under the management of the Wells-Fargo Express Company. These additions will be of great convenience to the Honolulu public. Delivery of express matter is made over the entire system twice daily.

It is a well-known fact that the fish which inhabit the waters adjacent to the Hawaiian Islands are among the most beautiful in the world. The wonderful variations in hues and oddity of shapes are very interesting. For the purpose of enabling the people of this city and the strangers who visit Hawaii an opportunity of seeing and studying these wonders of the deep, the company has, with the assistance of some well-disposed friends, erected an aquarium at Kapiolani Park. The property extends from the park road to the beach, and the building, a one-story structure, consisting of three wings and rotunda of artistic design, is located in a grove of beautiful cocoanut palms.

Certain changes made in the routing of the cars have enabled a reduction in the passenger-car service from 25 to 23 cars without in any way impairing its efficiency.

Submitted herewith is a statement showing the financial results of operations for the year ended June 30, 1905:

Passenger-car mileage	1,502,921.95
Passengers carried	6,526,157.00
Gross earnings	$329,824.32
Operating expenses	$202,437.27
Net earnings	$127,387.05
Fixed charges, including interest on bonds, taxes, etc	$57,677.25
Net income	$69,709.80
Per cent of operating expenses to earnings	61.39
Per cent of operating expenses and fixed charges to earnings	78.90
Capital stock outstanding	$1,150,000.00
Bonded debt	$690,000.00

Statement of monthly earnings and expenses.

Month.	Car mileage.	Passengers carried.	Earnings.	Operating expenses.	Net earnings.
1904.					
July	127,525.26	525,647	$26,766.25	$19,864.29	$6,901.96
August	126,694.99	522,337	26,387.65	15,979.86	10,407.79
September	128,869.76	543,951	26,741.65	15,779.98	10,961.67
October	126,825.25	569,948	28,074.65	16,767.45	11,307.20
November	123,527.67	560,478	27,706.80	15,443.76	12,263.04
December	123,108.04	576,427	28,730.35	17,021.60	11,708.75
1905.					
January	126,734.83	530,868	26,288.90	16,220.39	10,068.51
February	115,399.73	503,232	24,951.20	15,092.25	9,858.95
March	128,823.41	531,598	26,284.20	16,578.46	9,705.74
April	117,090.89	526,106	26,247.65	17,149.27	9,098.38
May	129,325.71	572,253	28,501.95	19,799.87	8,702.08
June	123,996.41	563,311	28,027.75	16,740.09	11,287.66
Total	1,502,921.95	6,526,157	324,709.00	202,437.27	122,271.73

Net earnings	$122,271.73
Income from other sources	5,115.32
Net income after deducting operating expenses	127,387.05
Fixed charges, bond interest, taxes, insurance, etc	57,677.25
Net income over all charges	69,709.80

Very respectfully,

G. R. CARTER,
Governor of the Territory of Hawaii.

The SECRETARY OF THE INTERIOR.

APPENDIX.

A.—CHAMBER OF COMMERCE APPROPRIATION RECOMMENDATIONS.

HONOLULU, *August 14, 1905.*

SIR: The chamber of commerce respectfully asks that in your annual report you call attention to the following matters of importance requiring Federal assistance:

LIGHT-HOUSES.

Mid-Pacific commerce of great value demands that the dangerous points of navigation in this Teritory should be attended to. This would require the following very necessary appropriations:

New front and rear range lights in Honolulu Harbor	$40,000
A first-order light at Makapu Point, Oahu	60,000
Storehouse and wharf at Honolulu	40,000
Third-order light at Kalaupapa, Molokai	40,000
First-order light at Mana Point, Kauai	60,000
For lights throughout the group, necessary for interisland and coastwise traffic	120,000
Total	360,000

HONOLULU HARBOR.

The former appropriation of $400,000 for dredging Honolulu Harbor is but for a portion of a very necessary work This work should be continued until the plan as approved by Congress is completed.

PEARL HARBOR.

That Congress authorize the preparation of complete survey and plans for the improvement of Pearl Harbor.

FORTIFICATIONS.

For the purchase of additional fortification sites there will be required the sum of $150,000. This Territory is without any fortifications whatsoever, and taking into consideration the time required to complete these works we think that the sum of $1,500,000 should be asked for to start the construction of 12-inch mortar and 12-inch rifle batteries at Honolulu and Pearl Harbor.

REVENUE CUTTER.

The revenue service should be assisted in its work by having a revenue cutter stationed at Honolulu. This would require an appropriation of $325,000.

FEDERAL BUILDINGS.

All districts of the Territory attest to the want of buildings. We recommend an earnest attempt to procure Federal aid in this matter.

HARBOR DEFENSE.

Until the establishment of fortifications, we think that a coast defense or other vessel of war should be detailed for permanent service at Honolulu. A request should also be made that there should be quartered at Honolulu sufficient troops for defense of the Territory or to be drawn on for foreign service.

HILO HARBOR.

That authority be obtained from Congress for the preparation of survey and plans for improvement of said harbor in accordance with preliminary examinations made in compliance with river and harbor act, approved March 3, 1905.

IRRIGATION.

That irrigation surveys now authorized by law under the Department of Agriculture and Geological Survey be extended to Hawaii.

LAND RETURN.

That the return of the property to the Territory of Hawaii, known as the barracks lot on Hotel and Miller streets, be consummated.

In conclusion we suggest that as this Territory contributes to the Federal Government annually a very large amount of revenue, we think that until needed improvements are made here, at least the amount of our revenues be spent here annually.

HONOLULU CHAMBER OF COMMERCE.
[SEAL.] By E. D. TENNEY, *President.*
JAS. GORDON SPENCER, *Secretary.*

A. L. C. ATKINSON, Esq.,
Acting Governor, Territory of Hawaii.

B.—MERCHANTS' ASSOCIATION OF HONOLULU.

HONOLULU, *September 16, 1905.*

SIR: The Merchants' Association of Honolulu, in reply to the letter addressed to the association by Acting Governor Atkinson and under date of July 19, beg to state that the following are the most pressing requirements of the mercantile community and are essential to the maintenance and advancement of the entire population of the Territory of Hawaii.

First. A Federal building which will accommodate the departments of customs, post-office, judiciary, and administrative bodies in a convenient form for officials and public, and in a manner befitting the dignity of the departments of state represented therein. This need should be given preference to all others from the fact that the post-office is now inadequate, small, and crowded; the custom-houses, composed of a series of buildings erected at different times in the history of Hawaii and inconveniently arranged; the district court and United States Federal court, having since annexation occupied quarters belonging to the Territory which is needed by the local courts.

Second. The establishment of a naval station at Pearl Harbor, with a dry dock, and the opening up of these waters to the extent of bringing them in practical use for naval and merchant vessels.

Third. The construction of a breakwater at Hilo, the only possible harbor on the large productive island of Hawaii, the construction of which would secure a permanency of prosperity in general commercial and shipping circles.

Fourth. A revenue cutter, for the purpose of giving a reasonable protection to the large American interests in and about the Territory. The islands should at no time be without the services of a revenue cutter, and we can not refrain from urging the very grave importance of stationing such a vessel at Honolulu at the earliest possible date.

Fifth. A Federal experimental station. This we regard as of vital importance to the future welfare of the Territory, it being essential to the development of general business in the islands that new agricultural enterprises be inaugurated and encouraged, particularly with crops other than produced here—as sugar, rice, and coffee—and to this end we recommend a large increase of funds.

Sixth. A military post. The small number of men maintained in Honolulu is entirely inadequate and out of proportion for its needs. We understand that the Secretary of War, Hon. William H. Taft, favors an increase in the number of men to be stationed here, and we respectfully suggest that no better experience could be given to those troops intended for service in the Tropics than an assignment to duty at this port for a short time.

Seventh. Fortification. We are informed that certain recommendations made by the United States military experts are being acted upon. It is of great importance to have these defenses fully equal to the grave question of our isolated location in the midst of the Pacific. We believe the great safeguard against war is being prepared, and we respectfully urge upon Congress to the end that these works of defense be pushed to completion.

Eighth. Mosquito pest. From first appearances this may be considered a matter for local control and one in which the Federal Government should take no interest, but we claim our peculiar location and the large quantity of shipping that touches our port exposes us to exceptional danger. Already the Navy Department has made one station at Honolulu, forming with San Francisco and Panama a triangular course for its vessels. It is well known that the species of mosquito that carries yellow fever exists in Honolulu, but it is harmless until the yellow fever arrives here; and in view of the probability in the near future of frequent calls being made at this port by vessels from Central American ports we consider this a question of great national importance and one in which it would be eminently proper for the Marine Hospital and Quarantine Service to assist. Much valuable work has already been rendered in the local campaign against mosquitoes. We believe, in conjunction with the Federal authorities, this pest could be practically exterminated.

We trust the foregoing Territorial needs may be secured at an early date, and thanking you for the opportunity of making public our views,

Very respectfully, GEO. W. SMITH, *President.*

Hon. GEORGE R. CARTER,
Governor Territory of Hawaii.

C.—TERRITORIAL REGISTER AND DIRECTORY FOR 1905.

TERRITORIAL OFFICIALS.

EXECUTIVE.

George R. Carter, governor.
A. L. C. Atkinson, secretary.
Lorrin Andrews, attorney-general.
A. J. Campbell, treasurer.
J. H. Fisher, auditor.
C. S. Holloway, superintendent of public works.
J. C. Davis, superintendent of public instruction.
J. W. Pratt, commissioner of public lands.
W. E. Wall, surveyor.
L. E. Pinkham, president board of health.
William Henry, high sheriff.
F. D. Creedon, private secretary to governor.
Alex. Craw, superintendent of entomology.
R. H. Hosmer, superintendent of forestry.

J. K. Kalanianaole, Delegate to Congress.

JUDICIAL.

W. F. Frear, chief justice, supreme court.
A. S. Hartwell, associate justice, supreme court.
A. A. Wilder, associate justice, supreme court.
Henry Smith, clerk, judiciary department.
J. T. De Bolt, first judge, first circuit, Oahu.
Alex. Lindsay, jr., second judge, first circuit, Oahu.
W. J. Robinson, third judge, first circuit, Oahu.
A. N. Kepoikai, judge, second circuit, Maui.
J. A. Matthewman, judge, third circuit, Hawaii.
Chas. F. Parsons, judge, fourth circuit, Hawaii.
J. Hardy, judge, fifth circuit, Kaui.
P. L. Weaver, judge, court of land registration.

LEGISLATIVE.

Senators:
- Hawaii—J. T. Brown, G. C. Hewitt, J. D. Paris, Palmer P. Woods.
- Kauai—J. K. Gandall, S. W. Wilcox.
- Maui—C. H. Dickey, A. N. Hayselden, S. E. Kalama.
- Oahu—W. C. Achi, E. F. Bishop, J. M. Dowsett, D. P. R. Isenberg, John C. Lane, L. L. McCandless.

Representatives:
- Hawaii—A. Fernandez, F. R. Greenwell, H. L. Holstein, H. M. Kaniho, J. D. Lewis, Chas. H. Pulaa, W. H. Shipman, Carl S. Smith.

Representatives—Continued.
- Kauai—Eric A. Knudsen, Geo. W. Mahikoa, Chas. A. Rice, W. J. Sheldon.
- Maui—W. J. Coelho, Geo. Copp, W. P. Haia, John Kalino, P. Pali.
- Molokai—M. K. Nakuina.
- Oahu—Frank Andrade, R. W. Aylett, Chas. Broad, Oscar P. Cox, W. W. Harris, Theo. H. Kalawaia, A. S. Kaleiopu, E. K. Lilikalani, Carlos A. Long, Sol. Mahelona, E. W. Quinn, F. T. P. Waterhouse.

FEDERAL OFFICIALS.

DEPARTMENT OF JUSTICE.

United States district court:
- Sanford B. Dole, presiding judge.
- R. W. Breckons, United States district attorney.
- J. J. Dunne, assistant United States district attorney.

United States district court—Cont'd.
- E. R. Hendry, United States marshal.
- W. B. Maling, clerk.

TREASURY DEPARTMENT.

Customs Division:
- E. R. Stackable, collector of customs.
- R. C. Stackable, special deputy collector.
- Raymer Sharp, chief examiner.
- A. B. Ingalls, examiner and gauger.
- M. H. Drummond, deputy collector and cashier.
- C. H. Raven, deputy collector.
- W. O. Aiken, deputy collector, Kahului, Maui.
- J. C. Ridgway, deputy collector, Hilo, Hawaii.
- W. D. McBryde, deputy collector, Koloa, Kauai.
- E. A. Fraser, deputy collector, Mahukona, Hawaii.

Internal-Revenue Service:
- R. H. Chamberlain, collector internal revenue.
- H. D. Couzens, chief deputy collector.
- W. F. Drake, division deputy.
- R. S. Johnstone, deputy and gauger.

Public Health and Marine-Hospital Service:
- L. E. Cofer, passed assistant surgeon, U. S. M. H. S., in command.
- W. C. Hobdy, passed assistant surgeon.
- C. Ramus, assistant surgeon.
- A. N. Sinclair, acting assistant surgeon.
- Miss E. F. Smith, acting assistant surgeon.
- C. Slough, pharmacist.
- John J. Grace, acting assistant surgeon, Hilo, Hawaii.
- John Weddick, acting assistant surgeon, Kahului, Maui.
- J. B. Molony, acting assistant surgeon, Lahaina, Maui.
- R. C. McLean, acting assistant surgeon, Koloa, Kauai.
- B. D. Bond, acting assistant surgeon, Mahukona, Hawaii.

DEPARTMENT OF COMMERCE AND LABOR.

Immigration Service:
- F. M. Bechtel, inspector in charge.
- J. K. Brown, Chinese inspector.
- R. C. Brown, immigrant inspector.
- G. R. Cullen, immigrant inspector.
- R. L. Halsey, immigrant inspector.

United States Light-House Establishment:
- Lieut. Commander A. P. Niblack, assistant to inspector Twelfth district.

Coast survey division:
- W. D. Alexander, assistant in United States Coast and Geodetic Survey, in charge of branch office.

Navigation bureau:
- Norman Watkins, United States shipping commissioner.

DEPARTMENT OF AGRICULTURE.

Hawaii experimental station:
- Jared G. Smith, expert and special agent in charge.
- D. L. Van Dine, expert and special agent.

Weather bureau:
- A. McC. Ashley, section director.

POST-OFFICE DEPARTMENT.

Postal service, Hawaii:
- Joseph G. Pratt, postmaster.
- L. T. Kenake, assistant postmaster.
- F. E. Colby, chief clerk, money-order department.
- Wm. McCoy, sr., chief clerk, registry department.

Postal service, Hawaii—Continued.
- W. C. Kenake, chief mailing clerk.
- E. M. Brown, superintendent of delivery.
- I. J. Hare, inspector in charge.
- George W. Carr, assistant superintendent railway-mail service.

NAVY DEPARTMENT.

United States marine barracks:
- Maj. B. F. Fuller, U. S. M. C., commanding marines.
- First Lieut. W. C. Harllee, U. S. M. C.

United States naval station, Hawaii:
- Capt. H. W. Lyon, commandant, U. S. Navy.
- Lieut. Commander A. P. Niblack, U. S. Navy.

United States naval station, Hawaii—Continued.
- W. E. Taylor, surgeon, U. S. Navy, medical inspector.
- P. S. Rossiter, assistant surgeon, U. S. Navy.
- A. S. Brown, assistant paymaster, U. S. Navy.
- O. G. Haskett, pay clerk, U. S. Navy.

WAR DEPARTMENT.

United States military in Hawaii:
- Maj. Robert C. Van Vleet, commanding.
- Capt. C. F. Humphrey, quartermaster, U. S. Army, depot quartermaster and commissary.
- Capt. John D. Yost, assistant surgeon, U. S. Army, military hospital.

United States military in Hawaii—Continued.
- Capt. R. L. Bush.
- First Lieut. Jas. G. Hannah.
- First Lieut. Jas. S. Young, jr.
- First Lieut. J. B. Shuman.
- Second Lieut. M. M. Garrett.
- Second Lieut. M. A. Wells.
- C. S. Baker, contract surgeon.

DEPARTMENT OF THE INTERIOR
GENERAL LAND OFFICE
WILLIAM A. RICHARDS, COMMISSIONER.

MAP
OF THE

TERRITORY OF HAWAII

Compiled from data on file in the U.S. Coast and Geodetic Survey; Hydrographic Office; Hawaiian Government Surveys, and other authentic sources under the direction of

FRANK BOND
Chief of Drafting Division G.L.O.

1905

Scale: 1 Inch = 12 Miles.

Longitude West from Greenwich

KAMUAELI CHANNEL

KAIEIE WAHO CHANNEL

KAIWI CHANNEL

KAI O KALOHI

PAILOLO CHANNEL

ALENUIHAHA CHANNEL

KEALAIKAHIKI CHANNEL

ALALAKEIKI CHANNEL

NORTH PACIFIC OCEAN

KAUAI

OAHU

MOLOKAI

LANAI

KAHOOLAWE

MAUI

HAWAII

NORTH KOHALA

SOUTH KOHALA

HAMAKUA

KAU

PUNA

HILO

HAWAIIAN ARCHIPELAGO

Scale of Miles

PACIFIC OCEAN

NORTH

Compiled and Lettered by I.P.Berthrong - Revised

REPORT OF THE GOVERNOR OF OKLAHOMA.

REPORT OF THE GOVERNOR OF OKLAHOMA.

TERRITORY OF OKLAHOMA,
EXECUTIVE DEPARTMENT,
Guthrie, Okla., September 15, 1905.

SIR: Complying with instructions contained in your communication dated June 7, 1905, I have the honor to submit my report of the affairs and wonderful development of the Territory of Oklahoma for the year ended June 30, 1905.

PART I.

For convenience of reference the contents of this report have been arranged and classified in two parts.

Part I contains miscellaneous matter of general interest, several topics being treated by persons who, because of their occupation or familiarity with the subject, are peculiarly fitted to impart information.

STATEHOOD.

Oklahoma is qualified for and entitled to statehood. There are in the Territory of Oklahoma approximately 800,000 people. These people have come from every part of the United States and represent the best energies and highest possibilities of citizenship peculiar to any and all of the States of the American Republic.

That the people of this Territory are capable of exercising in the highest degree the rights of government is a fact self-evident to all who are conversant with the social conditions which prevail here, where we have a cosmopolitan citizenship representing the very highest standards of intellectual and moral development.

THE TWO TERRITORIES.

For years it has been the opinion of the statehood promoters that Oklahoma and the Indian Territory would ultimately be included in the area of one State. An agitation was first commenced in Oklahoma for immediate statehood for this Territory, with the provision that the Indian Territory should be added when conditions would permit. It became evident that Congress would not admit one Territory without the other.

The sentiment now prevailing in Oklahoma is for immediate joint statehood, and a similar sentiment, beyond question, prevails in the Indian Territory. The proposed State will be very rich in natural resources and possibilities along all lines of development.

The Indian Territory has already demonstrated, even under difficulties, a great capacity for progress. The towns have built with a wonderful rapidity. The population is largely represented by that hardy, energetic class of American citizens who do things and develop Commonwealths when given an opportunity. While the people of the Indian Territory have built cities and made marvelous advancement along many lines, yet they are handicapped by numerous embarrassing conditions. They are deprived of the rights and advantages of government. Their general school facilities throughout the country are limited. They also are devoid of power to provide for roads and highways, as well as many other things essential to a civilized community.

It has been argued that the Indians are not ready for the conditions which will prevail under statehood. The probabilities are that they are as nearly prepared now as they would be at any future time. With a large number of well-educated progressive Indians among them, it is reasonable to believe that former tribal traditions will be soon forgotten, and that these people can and will adjust themselves to the new conditions which will come under statehood, and that they will without much difficulty assume the responsibilities of citizenship. This is especially probable if they have the proper safeguards thrown around them for their protection.

Many of the leaders among the Indians realize that the inevitable is at hand and that the sooner their people learn that " old things have passed away " the better it will be for them.

For years conditions in the various Indian nations have been growing toward statehood and a new order of things. Civilization has placed her hand upon the Indian Territory. The grasp is firm and will never be relinquished. The best way for all heretofore opposing forces would be to step aside and let civilization pursue her destiny without obstacle or hindrance. It is sure to come. Why not now?

Again, there are thousands of people from the States who have gone into the Indian Territory. They have large property interests. They have built towns and cities and have established many of the

institutions of civilization. They are a law-abiding, intelligent, progressive people, and united with the people of Oklahoma would help to develop a great State.

POPULATION.

The population of Oklahoma is cosmopolitan, being composed of people from all States of the Union and from some foreign countries.

No annual census of the adult population having been taken, I am compelled to make use of the school enumeration, which is taken each year in every school district in the Territory and reported to the auditor and superintendent of public instruction for the purpose of making the apportionment of funds accruing to the public schools from rentals of school land.

The annual increase in the enumeration of pupils is not less than 5 per cent. The enumeration of 1903 showed 193,673 pupils of school age. In 1904 there were 204,716. Complete reports are in for 1905 from the districts in 20 counties, showing the usual increase, which will make the school population for 1905, 215,000.

The ratio heretofore found to exist between the school population and the total population in many of our cities and school districts is 3.75. Using this ratio and making ample allowance for inaccuracies, I feel confident in stating that the total population of Oklahoma at this time is now about 800,000.

The number of foreign born is not over 5 per cent. Illiteracy is confined largely to the old negroes (ex-slaves) and full-blood Indians, the younger element of both races having for many years had the benefits of our free schools. The percentage of illiteracy is not over 2 per cent.

IMMIGRATION.

There has been a steady increase in the population during the past year. Immigration from the States and other Territories less favored has been continuous for many years. In the counties of Beaver and Woodward 427,777 acres have been filed upon by the homesteader. The counties in the western part of the Territory, where formerly the cattleman held sway, have of late years given substantial evidence of their ability to raise good crops, and as a result much land heretofore used for grazing purposes is now being cultivated by the agriculturist.

The immigration to the Territory by homesteaders during the past year has not been less than 20,000. I base my figures upon the returns from the various land offices. Every city and town has increased in population, and some new towns have been established on the various lines of railway. New industries and manufactories have been established, requiring more or less skilled labor to operate. The large number of residences completed and in course of construction which are to be seen by the casual visitor, not only within the corporate limits of some of our cities, but extending far out into the surrounding suburbs, is convincing evidence of much growth. The character of the citizenship which comes to Oklahoma through its immigration is of the highest type and most desirable. Men and women, with ambition and determination as their capital, as well as those who have elsewhere acquired a competence, have come here to make their homes.

The various railways, through their emigration departments, have during the past year brought thousands of home seekers to the Territory, a large majority of which have been so well pleased with conditions and prospects that they have decided to make their permanent residence here.

COMMERCE.

The facilities for handling the products of the Territory, as well as supplying the demand for goods manufactured elsewhere, are increasing. New lines of railway are being built and still others are projected.

The crude petroleum produced in Pawnee County has been so extensive in quantity that the facilities for shipment were wholly inadequate. Although a pipe line conveys 8,000 gallons per day to outside refineries, it has been found necessary to use large storage tanks, pending better facilities for shipping.

The fruit-raising industry is very extensive, and the shipments have been greater this year than ever before.

Much cement and plaster, derived from the extensive gypsum beds in Blaine, Canadian, Comanche, and Kay counties, has been shipped from the Territory. During the past year the granite quarries located in Greer County have been greatly developed and are now equipped with plants having polishing machines and column cutters and are turning out a product that finds an extensive eastern market.

I gather from the reports furnished me by the various railroads now operating in the Territory that during the past year there have been shipped from the Territory 13,920 carloads of wheat, 8,023 carloads of flour, 2,368 carloads of other feed stuffs, 4,587 carloads of corn, 422,092 bales of cotton, 3,204 carloads of hogs, and 8,569 carloads of cattle, and during the same time there has been shipped into the Territory 14,814 cars of coal, 2,054 cars of farm implements, and 1,626 cars of emigrant goods.

MANUFACTURING.

As the Territory grows older more industries of various kinds find this field an inviting one and establish plants within our borders.

Several large manufacturing establishments in the East have found the demand for their products in the Southwest to be such as to warrant them in installing branch plants in some of our cities in order to better serve their patrons. Among these may be mentioned plow works, a sash, door, and blind manufactory, a shoe factory, cracker and biscuit works, and box factories. There are also meat-packing establishments, canning works, creameries, and many other industries that find an abundance of the raw material, together with an endless demand for the manufactured product.

The excellent railroad facilities possessed by several of our cities for the distribution of goods, low freight rates of competing lines, and the abundance of cheap fuel are features which appeal to the manufacturers of the East and are bringing to the Territory every year concerns whose weekly pay roll amounts to thousands of dollars.

THE CROP OUTLOOK FOR 1905.

The year 1905 has been one of the most prosperous in the history of the Territory. Abundant rains have fallen and the fields have yielded bountiful harvests. While it is true that in some portions of the Territory the wheat crop has not been as heavy as it has been in other years, yet it commands a good price. The farmer is realizing good returns.

The corn crop promises to be the largest ever produced in the history of the Territory. The other crops are generally good.

Oklahoma has a diversity of crops, and it has been the experience of our farmers that when they fail on one crop they generally succeed in raising another.

Taken as a whole, the Territory is in a very prosperous condition. Our citizens are well pleased with existing conditions, and the outlook for the future is indeed most promising.

AGRICULTURE.

[C. A. McNabb, secretary board of agriculture.]

Agriculture is the foundation rock upon which the young giant Commonwealth of Oklahoma stands. Within her borders are produced annually wonderful crops of all the agricultural staples and the numerous minor products indigenous to this latitude.

COTTON.

Following the first opening of Oklahoma lands, and while the land was raw and new, wheat was the chief farm production; then a few citizens of southern origin and inclinations ventured to try cotton growing. The writer enjoys the distinction of having shipped into Oklahoma the first carload of cotton seed for planting. At first it was a serious question whether there would be a sufficient demand in the Territory, small as it was at that time, to warrant the shipping of a whole carload of seed; but the farmers from the North and East, although evincing no love for the fleecy staple, recognizing a possible opportunity to produce some quick money, decided to try a few acres, and, through aid rendered by way of advice from southern neighbors, the fact that cotton could be successfully grown by the northern as well as the southern planter was soon demonstrated. It now occupies a position by the side of wheat and corn in point of productive value in Oklahoma. In fact, it almost doubled in value the production of wheat in 1904. At this writing the crop bids fair to far outdo the wheat crop of 1905. The yield for 1905 promises to exceed 400,000 bales.

CORN.

For some years after the first settlement of Oklahoma corn was not recognized as a highly successful crop, except in very favorable locations, and even then it was not considered as profitable as wheat or cotton. In more recent years, however, with more care being used to prevent planting too thick and by the exercise of better judgment in the selection of seed and the cultivation of the growing crop, and by judicious crop rotation, corn has steadily climbed until it now

crowds cotton for first honors. If a fair price prevails for this year's crop, which is roughly estimated at 50,000,000 bushels, it will have a market value of eighteen to twenty million dollars.

Oklahoma possesses decided advantages over the great corn-producing States of Illinois and Iowa in that the crop is matured by September 1 and is in no danger of killing frost, which does not usually occur before November 1. Numerous instances are known wherein Oklahoma farmers, in their eagerness to demonstrate the capabilities of Oklahoma soil and climate, have successfully grown a crop of corn on land from which a big crop of wheat had been harvested the same year. One instance came to my notice last season where a fine crop of fall turnips was added to this list of productions from the same land. This practice is not general, however, and is not to be recommended. Instead of planting the wheat or oats stubble to corn or any other grain crop, the farmers are fast learning the value and wisdom of planting to cowpeas and following with corn the next year.

OATS.

Oats has been quite a successful crop in Oklahoma. However, the yields for 1903 and 1904 were light in consequence of an attack by rust. The yield of this valuable crop this year has been good, the range being from 50 to 100 bushels per acre.

KAFFIR CORN.

Throughout the whole Territory, but particularly the western half, Kaffir corn is grown quite extensively, and since it is known that this product is the chief constitutent of several of our leading breakfast foods, thereby creating a greater demand for the thrashed grain, the acreage will be greatly increased. It, with milo maize, may be truly classed as never-failing crops in Oklahoma.

WHEAT.

Wheat continues to be the leading crop throughout the northern portion of Oklahoma, but it is not being grown to the exclusion of all else, since the farmers have awakened to a realization that they were rapidly robbing the soil of its fertility by the practice of a one-crop method of farming, and they are now giving decidedly more attention to diversification and crop rotation.

ALFALFA AND COWPEAS.

It is quite a common question with the farmer from the North and East, "Can you grow clover?" No; but we can grow two crops of the same family that are far more valuable, not only in point of yield but as soil builders. They are alfalfa and cowpeas. On choice alfalfa land three to five cuttings of alfalfa hay are made annually that yields from 1 to 1½ tons of the richest hay grown, each cutting. Cowpeas are next in point of value, but must be planted annually, while the alfalfa will yield full crops for a long term of years. Both are nitrogen gatherers, thus leaving the soil richer than before the crop was grown. Remarkable hog-feeding demonstrations

have been made with either alfalfa or cowpea hay in connection with grain, where pork was produced at greatly reduced cost over grain feed alone.

BERMUDA GRASS.

Many acres of Bermuda-grass pasture are now to be seen in the Territory, and the value of this grass for pasture as well as lawn use is becoming more noticeable each successive year. Especially is this true since the agricultural experiment station has so thoroughly demonstrated that there are two distinct varieties of Bermuda grass in Oklahoma, and that one does not winterkill and remains green much longer in spring and fall than does the variety which is produced from the seed that is imported from the Bermuda Islands. I might incidentally mention also that sets or roots of the better sort may be procured from the experiment station for the asking.

BROOM CORN.

Broom corn is now recognized as one of the staple crops of Oklahoma, but its production is largely confined to the western portion of the Territory. It is a most satisfactory crop to plant on freshly broken sod, and, in fact, a very large percentage of the crop is produced on that kind of ground. While the yield is probably not so good on sod as it would be on old ground, the quality of brush is first class and the yield is much greater than would be realized from any other kind of crop on sod freshly turned over. Over 20,000 tons of this valuable crop was produced in the Territory last year, and the crop this year will exceed that amount.

AGRICULTURAL STATISTICS.

The demand for statistical information concerning Oklahoma and its resources and industries is one that is constant and increasing, and in order to make an attempt to satisfy this increasing demand it becomes necessary that the present plan of gathering statistics must needs be perfected.

Although we have a better foundation upon which to work at the present time than ever before, we are beginning to realize the advantages of reliable and conservative statistical data relating to agricultural conditions.

This year finds us with the first tabulated statistical data for Oklahoma ever published or brought before the public in reliable form. Although there was a law passed in 1901 which compelled the county clerks to make returns of agricultural statistics to the board of agriculture, there were no penalties attached for failure to procure answers to questions along this line by the assessors. It was very evident that it was not possible for the county clerk to make any returns unless the data had been first obtained by the assessors. Under the act of 1901 the assessors were not duty bound to collect such information as related to agricultural conditions, and, therefore, only a portion of the counties made any attempt at making a report.

During the second year a more determined but scarcely more successful attempt was made to secure these data. Until the assessor

could be compelled to collect data as desired by the board of agriculture, there were no prospects of ever being able to secure a complete report for the Territory.

The last legislative assembly passed a law (approved March 13, 1905) not only compelling the assessor to gather such information as desired by the board of agriculture, but it is deemed a misdemeanor for any person, firm, or corporation to refuse to give statistical information to an assessor. At first sight it would seem that there is no excuse for the board not being able to give a true, accurate, and concise statistical report, one that represents the true conditions as they exist in the Territory, because the farmer is compelled to give out this information to the assessor, the assessor is compelled to report such information as he has received to the county clerk, and the county clerk is duty bound to make such a return of all the assessors' reports to the secretary of the board of agriculture. By the working of this law we have been able to secure a tabulated report from all the 26 counties of the Territory.

While these reports are as complete as may be expected in the first operation of the law, yet the estimates are very low and do not represent the true existing conditions. Commenting upon this report by making a comparison of the number of bales of cotton produced in Oklahoma, as shown by the assessors' reports and the number as reported by ginners, as recorded in Bulletin No. 19, published by the Bureau of the Census, the assessors' reports fall below the Government report by 26 per cent.

It is quite plain that if those counties that raise the bulk of the cotton of the Territory misrepresent the true conditions by 26 per cent, those counties that raise the bulk of the wheat will report 20 to 30 per cent under the correct estimate, as will also those counties raising corn as a principal crop. Thus, taking an average of all the crops for all the counties of the Territory, our statistical data will have to be increased 20 to 30 per cent to approach the approximate figures.

In order to meet the increasing demand for statistical information of the agricultural resources and conditions of Oklahoma, it is evident that it will not be sufficient to rely entirely upon the assessors' returns. It is the plan of the board of agriculture to establish a corps of crop reporters, one in each township, who will perform similar duties to those performed by reporters of the United States Department of Agriculture.

The reports of conditions and estimates made by the crop reporters are to be used in conjunction with the assessors' reports and to give new information as well as to verify the same. Questions relating to the acreage, yield, condition, etc., of crops will be propounded from time to time, and answers will be sent in on blanks provided for that purpose.

Already about 75 per cent of the municipal townships of the Territory are provided with a crop reporter who has signified his willingness and desire to aid in this work, and if the list can be completed in time it is probable that an attempt will be made to gather information concerning the probable yield of corn and cotton for the fall of 1905.

The gathering of statistics by the board of agriculture is merely in its infancy. Heretofore the office force has been limited, but by

the act passed by the last legislature creating the office of statistical clerk to assist the secretary of the board of agriculture, the gathering of agricultural statistics will from this time be an important feature of the work. It is desired that the present system of gathering information will soon become so perfected as to produce reliable statistical data that will prove indispensable to the farmers of Oklahoma.

Oklahoma proper comprises approximately 23,000,000 acres of land, but a small part of which yet remains subject to homestead entry. As this land was all settled under the homestead law, and 160 acres constituting such homestead, there are approximately 143,750 farms within the borders of Oklahoma.

According to the assessors' returns in 1905, based on a 25 per cent valuation, the present cash value of farms, including improvements, represents the farmers' investments, exclusive of implements, crops, or stocks, as $232,081,776, or an average valuation per farm of $1,613.

All farming implements and machinery owned by the farmers of Oklahoma, as indicated by the assessors' returns, are valued at $5,186,200, and live stock to the amount of $21,859,943, giving a total invested in land, implements, and live stock of $259,127,919, aside from the chief crops, $60,652,984, which brings up a grand total to the credit of the agricultural resources of the Territory of $319,780,-903. This calculation does not include the many minor crops produced in profusion and abundance all over the Territory, and which would serve to swell the total several millions of dollars, and is based on assessed valuation.

The following table shows the principal products marketed during year ending March 1, 1905, the average price received, and the total value produced by the farmers of Oklahoma:

Products.	Price.	Value.
Cotton, per bale	$50.00	$17,075,000
Corn, per bushel	.40	16,000,500
Wheat, per bushel	.60	9,040,800
Oats, per bushel	.20	716,875
Live stock	----------	4,677,201
Kaffir and milo, per bushel	.40	2,624,408
Poultry and eggs	----------	1,419,961
Dairy products	----------	1,333,588
Broom corn, per ton	45.00	962,280
Garden products	----------	358,271
Total for farm products	----------	54,208,984

FRUIT GROWING.

Although Oklahoma is but an infant, the fruit-growing industry has already taken such a foothold as to warrant the prediction that in a few short years she will occupy a place near the head of the list of the great fruit-producing States of the Union. The fact that Oklahoma was first settled by people from all the States, and that nothing was known regarding the adaptability of our soil and climate, each individual planted his home favorite, and the result proved to be one vast experimental station. It required some years to prove what varieties of the different kinds of fruit were to be our leaders. Through the careful working of an early and well-organized horticultural society, however, the list of unsuccessful varieties was soon

learned and the public cautioned against the further planting of such varieties. From year to year varieties were added to the successful list, until we now have about as many kinds of the different fruits in successful cultivation as is found in any of the older States. The display of Oklahoma fruits made at the Louisiana Purchase Exposition last year was a grand surprise to the world. Many and loud were the expressions of surprise and praise for the showing made by a country so young. It is but fair to say that, while the number of varieties displayed was not so great as some other States, the specimens shown were, in each instance, the best of that variety shown at that great fair, where all the States of the Union were in hot competition. Some of the specimens of apples from the great apple States of the North were mere pigmies by the side of those of the same variety grown in Oklahoma. The flavor of Oklahoma-grown fruit can not be surpassed. At St. Louis numerous comparisons were made along this line, and the most competent judges invariably decided in our favor.

The great area of "black-jack land," covering the greater part of the southeastern part of Oklahoma and to be found in spots in other sections of the Territory, offers the best possible inducements to the commercial orchardist, no matter what kind of fruit he might desire to grow. These lands can be purchased for less money than prairie lands, and though some expense would attend the clearing of them they can be made to yield handsome returns if planted to fruit. Trunk lines of railroad pass through them, enabling the grower to reach all of the large consuming centers. The railroad companies are disposed to give very reasonable rates on shipments in car lots of fruit, and, in fact, are offering every inducement to the planter to encourage the fruit development of this Territory.

APPLES.

While apples are grown with some degree of success in all parts of the Territory, the greatest success has been achieved throughout the "black-jack" region, in the eastern portion. Here large commercial plantations are the order of the day, the experimental stage having passed. Within the next two years, with a full crop, our growers will be forced to seek a market for the surplus in the great nonproducing region in the South.

PEACHES.

Oklahoma is the natural home of the peach. Here this valuable and delicious fruit may be grown successfully from border to border of the Territory. While all varieties do well, the preference is given to the famous Elberta, which develops the ideal color, flavor, and texture and finds ready buyers at remunerative prices in the markets of the world.

PEARS.

Pear orchards of some magnitude have been set within the past two or three years, and each successive year further demonstrates the feasibility of profitable pear production in Oklahoma. The preference is given to the Keifer variety in consequence of its freedom from blight. Many other varieties are grown, however, including

the famous Bartlett, which, though showing slight tendencies to blight, has netted handsome returns to the grower.

Some investigations are making along the line of using stock that do not show so much tendency to blight as do the European stock which are generally used by nurserymen on which to graft or bud.

PLUMS.

Several varieties of Japanese plums are producing wonderful crops in Oklahoma, and the writer confidently believes that the western half of the Territory will sooner or later develop into one of the great plum-producing sections of the country.

GRAPES.

Oklahoma throughout is well adapted to the successful culture of this valuable fruit, as is evidenced by the remarkable yields produced when grown by specialists who give the vineyards the care and attention they deserve. A number of species of the grape are indigenous to Oklahoma, and preference should be given to the planting of hybrids possessing bloods of our natives over those species whose natural habitat shows conditions absolutely foreign to the conditions as they are found to exist in the great Southwest. This subject is given more exhaustive attention in a special article found elsewhere in this report.

CHERRIES.

Some extensive cherry orchards have been set in Oklahoma and have proven quite remunerative when properly handled. If neglected, however, prove short lived and unsatisfactory.

TRUCK GARDENING.

The climate of Oklahoma enables the gardener to supply the table with fresh vegetables from the open garden for seven months of the year, or from April to November. The larger cities of the Territory furnish a splendid market for choice truck at good prices, and where up-to-date methods are employed the results are highly satisfactory.

MELONS.

Oklahoma now vies with the celebrated Rockyford district in the production of cantaloupes and outrivals the world in the production of the watermelon. At the Louisiana Purchase Exposition, Oklahoma made a grand display of large watermelons, ranging in weight from 80 to 117 pounds. In one instance a display of four melons on a single vine was made from Comanche County, the melons weighing from 75 to 90 pounds, and from the same vine 40 green melons had been pulled, weighing from 1 to 40 pounds. Greer, Kiowa, and Comanche counties were the strongest contestants for honors. The melons produced in Oklahoma are not only large, but the quality is of the very best. Oklahoma watermelons on the northern and eastern markets are given a quotation separate from the "common herd."

POTATOES.

Potato growing in Oklahoma has become an idustry of considerable importance, particularly along the North Canadian Valley in Pottawatomie and Oklahoma counties. Two crops are easily grown on the same ground in one season, but this is not practiced to a greater extent than is necessary for the production of seed for the main or first crop, it being deemed more advisable to crop the land to cowpeas after the first crop of potatoes is harvested, thereby fitting the soil for a crop equal in value to the two crops produced without the cowpea rotation. Pawnee County, along the Arkansas Valley, is coming into some prominence as a commercial potato-growing section, as is also Caddo County, along the valley of the Washita River.

SWEET POTATOES.

Hundreds of carloads of choice sweet potatoes now find their way from Oklahoma to the large city markets of the East, and the industry is a paying one. The yield per acre is about double that of the Irish potato, and commands a price equally as good or better. Some sections, particularly around Mustang, in Canadian County, where the industry has reached wonderful proportions, maintain a sweet-potato growers' association, thus securing a much better market for their products.

The quality of the sweet potato grown in the sandy soils of Oklahoma outrivals those of the famous Jersey coast, and the cost of production is not to exceed the one-half of New Jersey or Maryland.

GRAPE GROWING IN OKLAHOMA.

[C. A. McNabb, secretary board of agriculture.]

The great quantity of wild grapevines found growing in Oklahoma when opened to settlement in 1889 led many viticulturists and farmers to the belief that here the grape would be in its natural element. This belief was verified by subsequent development, and to-day Oklahoma produces thousands of tons of grapes, which find a ready market at remunerative prices. The old European idea that grape growing should be confined to steep hillsides and rocky slopes, which idea was brought to America and prevails to some extent in the New York and Ohio lake region yet to-day, has been found to be too expensive where grapes are grown for market and not for wine. The practical viticulturist of to-day realizes that he must grow his grapes on comparatively level land, where no expense beyond ordinary cultivation by team is necessary to produce a crop aside from the necessary annual pruning and tying. In Oklahoma the gently rolling, porous, sandy loam soils furnish the ideal situation for successful and comparatively cheap production of this valuable fruit. Our medium altitude, long season for maturity, and daily zephyrs all aid in the production of the best quality of fruit with the least expense.

Variety enters largely into the question of expense in the operation of a market vineyard, and I contend that the Concord, though more extensively grown in Oklahoma than perhaps all other varieties combined, is the most expensive variety we grow. The vines are heavy and long growers, consequently require more labor to prune than do many other varieties. They are very susceptible to attack by rot in

its various forms, thereby necessitating continued spraying during the growing season, and if the season be at all unfavorable no manner of effort will entirely prevent rot. The unevenness with which the clusters of fruit ripen requires a great deal of tedious hand picking to remove the unripe beries. All these shortcomings combine to make this very old and well-known variety objectionable with those who have advanced ideas along viticultural lines.

T. V. Munson, of Denison, Tex., perhaps the best authority we have on the American grape, has this to say in Bailey's Cyclopedia of American Horticulture:

> The region south of the thirty-eighth degree north latitude has in it more native species of grape than all the world besides. This alone would lead one to suppose the South naturally adapted to vineyard culture. Yet New York, Ohio, and California, up to the present, far excel it in vineyard area, although only three or four species are native in these States. The cause of this is that diligent experimenters and originators have produced varieties of good marketable value adapted to those regions, from natives of those regions, or hybrids of natives with hardiest foreign kinds. * * * But the South has chiefly planted the northern and foreign varieties, which succeed but indifferently in most southern localities, and has neglected almost entirely its native varieties until quite recently. Now experimenters have shown that most excellent and very successful varieties of all colors and seasons can be and have been produced by selection and hybridization of some of the large fine-fruited varieties.

The Concord is a true labrusca, and its natural home is east of the Allegheny Mountains and north of the Carolinas, where the conditions are quite foreign to what it finds in Oklahoma. Why not, then, produce new varieties by cross-fertilizing with some of our choicest native species? Or, what would be better, perhaps, grow the hybrids already produced by Mr. Munson, those that possess *Vitis lincecumii* or post-oak blood, thereby reducing the cost of production to the minimum and produce the maximum of yield and quality, selecting those varieties that are practically free from rot and that would give a succession of ripe fruit from July to October. There is an inviting field in Oklahoma for a Munson or a Burbank, not in grapes alone, but in other lines of fruit as well.

Time and space forbid the giving of specific cultural directions in this article, and I shall confine my efforts to that of giving a few general principles as I have applied them in Oklahoma with some degree of success.

Plant the vineyards on deep, well drained, sandy loam soil and set the vines in straight rows no closer than 8 by 8 feet; select varieties that are reasonably free from attack by rot or mildew. Train to a single stalk as high as the lower trellis wire. Construct a substantial post and wire trellis, keeping the lower wire at least 30 inches from the surface. Prune annually during dormant period to the arm renewal or upright system, leaving only thirty or forty buds all told, or canes of the previous season's growth, also leaving a couple of two or three bud spurs near the head of the vine to make sure of renewals the next year where you want them. Tie the arms to the lower wire and train and tie all shoots or new growth to the wires above. Plow, cultivate, and hoe the vineyard frequently. Summer tie the young shoots with green rye straw cut into lengths of about 8 inches. Keep all suckers pulled out from base of plant, and spray with Bordeaux mixture several times in the early part of the season. Do not be in a great hurry to pick the fruit as soon as it is colored, but allow it to mature. Right here let me say that fully 90 per cent of the grapes

marketed in Oklahoma are plucked before they are ripe. Grapes, unlike most other fruits, do not ripen any after picking and should be left on the vines until the pulp is soft and sweet and parts readily from the seed. In marketing the crop of grapes from my vineyard this season the question was repeatedly asked, "How do you manage to get them so sweet?" Nature arranges all this if you will but give her a chance. I repeat, do not pick the fruit until it is ripe. Gather the fruit in substantial picking trays; split baskets are too frail and cause many of the berries to burst. Remove all unripe or damaged berries from each cluster, being careful not to soil the bloom, and pack in climax baskets, covering the stem of one bunch with the tip end of another, thus hiding them from view. Fill the basket full and allow them to stand a few hours before putting on the cover. Demand a decent price for decent fruit and see that you get it. You will soon earn an enviable reputation and your fruit will be in demand at prices ranging from 3 to 7 cents per pound. A good average yield is 4,000 pounds per acre, although it is possible to produce six to seven thousand pounds in some varieties in Oklahoma and at little expense, providing proper methods are employed.

NURSERY INSPECTION.

[C. A. McNabb.]

The last legislative assembly enacted a stringent nursery inspection law, which requires all nursery stock grown in Oklahoma for sale or shipped into Oklahoma from other States to be inspected before the same may be legally disposed of in this Territory.

In compliance with this law, the Territorial board of agriculture, through the entomologist of the Oklahoma Experiment Station, Dr. W. R. Shaw, inspected 71 nurseries in Oklahoma and, by request, 6 in the Indian Territory. The law provides that the cost of such inspection shall be limited to actual outlay for travel and maintenance and salary of inspector. The final report of the inspector shows the total cost to have been $540, or an average of $7 per nursery. In view of the fact that through failure of some nurserymen to report in time to be included in original itinerary, thus necessitating a second trip over a portion of the Territory, the expense is certainly trifling. In fact, it is doubly so, since such inspection resulted in finding San Jose scale in great profusion in close proximity to one of the nurseries, which, had they not been discovered in time, would have resulted in thoroughly scattering this very damaging insect over a large area. This timely discovery also demonstrates the need of just such a law as we now have. The law does not meet with the approval of a large number of the nurserymen of other States, who have found Oklahoma a valuable field for some years past, but since it affords but a limited measure of protection to them, the protection being largely to the planters of Oklahoma, one should not wonder at their disapproval.

The nurseries of Oklahoma are, in most instances, necessarily small, the largest one containing about 200 acres. But, while they are small, they are producers of good stock where the growing is in the hands of persons of experience in that line of work. The number inspected includes a number of so-called nurseries, where tree growing is made a side issue to that of general farming. This class, under

the operation of present nursery law, will, no doubt, be largely forced out of the business, so that the growing of nursery stock in Oklahoma will soon be confined strictly to nurserymen who make that a business.

The inspection discloses the presence of crown gall to some extent, but not more so than is reported in other States by other State inspectors. With the exception of the one instance related, no seriously injurious insects or diseases were found.

Whenever an opportunity afforded, the inspector gave such object lessons and descriptions as will enable the nurserymen to better familiarize themselves with diseases and insects to be guarded against, to the end that it will be somewhat easier to hold in check the spread by having discovered their presence earlier and by adopting effective methods for their eradication.

The inspection was not limited to the nursery, but was extended to surrounding and near-by orchards and shade trees, or as much thereof as the limited time of a very active inspector would permit. The results are quite satisfactory so far, and great good will undoubtedly result from the operation of the inspection law if properly enforced.

Another excellent feature of the law is the elimination of the unprincipled and irresponsible "dealer" from the scene; the individual who possesses no conscientious scruples nor entertains any feeling of respect for himself or any other mankind; the fellow who would have you believe he is the owner of a very large nursery in Indiana or elsewhere and is out doing business for his health; the individual who carries a highly colored plate book containing cuts of many so-called high-class productions with high-sounding names of varieties procurable from him only at the sum of $1 to $5 each; the fellow who takes your order for high-priced productions, delivers you worthless seedlings, culls, and trash, then laughs at your gullibility. Oklahoma is no longer a field for such operators, neither for themselves nor as the agents of nurserymen. They must seek pastures or vocations new.

LIVE STOCK.

CATTLE.

Development of the live-stock interests of Oklahoma is keeping pace with that of general agriculture, and where only a few years ago the Texas long horn reigned supreme, all the finer types of high-bred cattle are now to be found. At first the preference was largely given to the beef breeds, with little consideration for the dairy animal, except in scattering lots; but more recently the pure-bred Jersey came in for a fair share of consideration, and now that the creamery industry is developing with rapid strides the demand seems to be more along the lines of the dual-purpose animal, which will combine high milking qualities with that of a high-class beef animal.

The steady increase in the acreage of alfalfa and Bermuda grass pasture, together with a fuller realization of the value of the herd as it relates to the maintenance of soil fertility and diversified farming, have combined to bring about these conditions.

HORSES.

While there has been gradual improvement along the line of high-bred horses, it has not been as marked as conditions warrant. Great efforts are now being made, however, by the Oklahoma Experiment Station authorities to impress the importance and value of developing this line of farm industry, and an awakening along this line in true Oklahoma style may come unheralded at any moment.

SHEEP AND GOATS.

A number of new sheep and goat breeders have come into the Oklahoma fold in the past year, and what has been an apparently neglected industry now bids fair to become one of some importance. Those engaged in sheep husbandry express themselves as highly gratified with results thus far, and are rapidly increasing their flocks and giving particular attention to the selection of high-grade animals.

SWINE.

A number of high-scoring herds of swine in Oklahoma now vie with each other for first honors. The Poland China outnumbers all other breeds combined. Little or no hog cholera exists in the Territory, largely due, no doubt, to a great extent to the use of alfalfa as a part of the rations.

POULTRY.

The short mild winters and long seasonable summers combine to make Oklahoma at once an ideal poultry-producing country. The small farm where poultry raising is made the chief industry is in evidence near all our larger cities. Car-lot shipments of both live and dressed poultry are frequently made to the mountain regions of the West. The low prices of both poultry and eggs so common only a few years ago no longer prevail, and the high-bred fowl is fast taking its place by the side of other lines of high-class farm productions.

OKLAHOMA LIVE-STOCK ASSOCIATION.

[W. E. Bolton, secretary.]

The trend of the markets for the past year has been constituted a phenomenal factor in the return of the live-stock business of Oklahoma to something of its former importance as a live-stock producing section of the country. For several years prior to the past year the prices have been so ruinously low and pastures were so hard to obtain and freights were so high that the average grower of cattle could not pay expenses and realize a profit on his investment, to say nothing of realizing a profit on his labor and care of the stock. This condition of affairs naturally drove many out of the business, and the larger herds of Oklahoma have been depleted by sale and shipment until there are very few large ranches still existing within the borders of the Territory. This condition of affairs not only affected the herdsman, but the farmer as well, and calves were vealed and sold and stripped from the farms until in many instances the milch cow only remains to represent an actual profit to the owner.

The past year, however, as stated, has given an upward trend to cattle values, and those who are in position to fairly estimate the future predict higher prices for some time to come. This of course

has caused a totally different feeling, and, with nothing like fair conditions, Oklahoma will again take her place at the markets as one of the best cattle-producing sections in the world.

The Oklahoma Live Stock Association has been organized for twelve years, and maintains its organization at this time upon a basis of representing values in cooperation and in influencing legislative enactments rather than upon a basis of productive benefits from recovery of strays and errors in shipment.

The branding iron has largely given way to the pedigree book, and a better grade of cattle than has ever before been seen in Oklahoma is now being produced. The association membership on the active list numbers more than at any time in the past six years. Its next annual convention will occur at Oklahoma City on the second Tuesday in March, 1906. The prospects for future benefits was never more flattering than at present and the association is accomplishing a great good by cooperation and the prevention of theft by assisting in prosecution of criminals.

The new regulation promulgated by the Secretary of the Interior places nine-tenths of Oklahoma within mange quarantine, when, as a matter of fact, less than 10 per cent of the Territory is affected with this troublesome but not virulent disease.

The maintenance of more and better inspection by a larger force under the laws of the Territory is calculated to materially improve conditions, and the festive bull tick, which once upon a time caroled his lay upon the bed ground all over the trail herd in western Oklahoma, is now a dim and almost forgotten memory.

Oklahoma needs home markets, and the building up of a central market at any one of our larger cities would materially add to the benefit of every stock grower in the land of the Fair God.

OKLAHOMA AT THE LOUISIANA PURCHASE EXPOSITION.

Oklahoma participated in that great mingling of nations at the world's fair at St. Louis, in 1904. In that stupendous enterprise, where the best products of the world were placed upon exhibition and in competition, Oklahoma achieved results which were very flattering, especially when it is remembered that our Territory was the last Commonwealth carved out of the Louisiana Purchase.

The Territory was awarded medals as follows: Thrashing machine, 1 bronze; agricultural products, 3 gold, 42 silver, and 91 bronze; flour, 1 gold; cotton, 1 gold; broom corn, 1 gold, 1 silver, and 1 bronze; horticulture, 1 gold, 11 silver, and 20 bronze; section of ethnology, 1 silver and 5 bronze; anthropology, 1 gold, 5 silver, and 3 bronze; elementary education, 1 silver and 1 bronze; mines and metallurgy, 1 gold, 3 silver, and 5 bronze.

The exposition afforded the Territory an opportunity to emphasize her extensive agricultural possibilities and demonstrate the vastness of her general resources. The agricultural and horticultural exhibits were especially good and attracted widespread attention.

Oklahoma is especially favored in soil and climatic conditions and can grow almost all of the different varieties of grain, fruit, and other farm products raised in the United States. The great diversity of our products, as exhibited at St. Louis, was a source of surprise to all who had not previously been conversant with the agricultural possibilities of the Territory.

The Oklahoma pavilion was one of the most popular resorts upon the fair ground. Every effort possible was made by the Oklahoma commission to show real "western hospitality" to all who visited the building. The great number of people who daily thronged the rooms and verandas of the pavilion demonstrated that the generous hospitality was appreciated.

The Oklahoma pavilion was moved to El Reno, Okla., and is now the property and home of the Elks' lodge of that place.

The original commission consisted of Joseph Meibergen, president; Otto Shuttee, treasurer, and Fred L. Wenner, secretary. On account of other official duties Mr. Wenner resigned and Edgar Marchant was chosen to take his place on the commission and to act as secretary.

The entire appropriation made by the legislature to defray the expenses of the exhibit was $60,000. Of this amount the sum of $2,214.02 was not drawn out of the treasury. The commission turned back into the public treasury the sum of $2,256.59 from money drawn but not used and from the sale of furniture, practically leaving $4,470.61 of the $60,000 appropriation unexpended.

The probabilities are that no other State or Territory derived more real benefits from the exposition than Oklahoma. Just at that time we were in the formative period of a State, and the splendid achievements at the fair gave the Territory a well-earned prestige all over the land and revealed to the world the fact that Oklahoma is a country of wonderful resources and great possibilities.

ASSESSMENT OF PROPERTY AND TAXATION.

Property is seldom assessed at its actual value. The values fixed by the assessors are not over one-sixth, and in many instances one-eighth of the true value, while money, bonds, and stocks are frequently not given in at all.

Farm lands have been assessed at an average of $3.31 per acre, horses at $15.73, cattle at $6.67, sheep at $1.07, and swine at $1.73; hence the total valuation, $93,130,721, as fixed by the assessors, is not over $16\frac{2}{3}$ per cent of the true value of all property subject to taxation. The actual value is about $560,000,000.

The amount of revenue required to be raised for the maintenance of the Territorial government, the educational and other institutions, is $596,036.60. To raise this amount requires a Territorial levy of $6\frac{4}{10}$ mills, which is divided among the various funds as follows:

Apportionment of taxes.

For general Territorial tax, 1905	$0.00250
For Morrill Hall, engineering rooms, gymnasium, and necessary appliances for the Agricultural and Mechanical College, Stillwater, 1905	.00035
For additional girls' dormitory, enlargement and equipment of Colored Agricultural and Normal University, at Langston, 1905	.00015
For Territorial University at Norman, 1905	.00062
For University Preparatory School, at Tonkawa, 1905	.00022
For the Oklahoma University Preparatory School building, at Tonkawa, 1905	.00040
For the Territorial Normal School at Edmond, 1905	.00040
For the Territorial Normal School at Alva, 1905	.00040
For liquidation of certificates of indebtedness of the Northwestern Normal School, at Alva	.00025
For the maintenance, repairs, and equipment for the Southwestern Normal School, at Weatherford, 1905	.00040
For the Agricultural and Mechanical College, at Stillwater, 1905	.00022
For the Colored Agricultural and Normal University, at Langston, 1905	.00022
For the Deaf and Dumb School, 1905	.00022
For the Territorial board of education	.00005
Total levy, 1905	.00640

Total assessed valuation and 1905 tax, by counties.

County.	Total valuation.	1905 tax.	County.	Total valuation.	1905 tax.
Beaver	$1,943,322	$12,437.26	Kiowa	$3,207,331	$20,526.92
Blaine	2,107,060	13,485.18	Lincoln	4,081,676	26,122.72
Caddo	3,123,478	19,990.26	Logan	4,938,028	31,603.38
Canadian	3,469,230	22,203.07	Noble	2,346,103	15,015.06
Cleveland	2,220,635	14,212.06	Oklahoma	8,046,764	51,499.29
Comanche	4,671,338	29,896.56	Pawnee	4,236,650	27,114.56
Custer	2,715,131	17,376.84	Payne	3,637,611	23,280.71
Day	542,533	3,472.21	Pottawatomie	4,404,669	28,189.88
Dewey	1,149,518	7,356.92	Roger Mills	1,707,457	10,927.72
Garfield	5,021,174	32,135.51	Washita	2,598,063	16,627.60
Grant	3,315,168	21,217.08	Woods	6,929,263	44,347.28
Greer	5,768,123	36,915.99	Woodward	3,129,664	20,029.85
Kay	4,834,134	30,938.46			
Kingfisher	2,986,598	19,114.23		93,130,721	596,036.60

Assessment of farm lands, 1905.

County.	Number of acres.	Average value per acre.	Total value as equalized.	County.	Number of acres.	Average value per acre.	Total value as equalized.
Beaver	234,731	$1.75	$410,779	Kiowa	288,418	$3.00	$865,254
Blaine	279,914	2.50	669,785	Lincoln	460,525	3.50	1,611,838
Caddo	179,966	3.10	557,894	Logan	431,704	3.80	1,640,475
Canadian	283,502	3.96	1,521,691	Noble	241,110	3.70	892,107
Cleveland	279,479	3.90	1,089,968	Oklahoma	391,112	4.00	1,564,448
Comanche	476,721	2.90	1,382,491	Pawnee	192,302	3.90	749,978
Custer	369,955	3.10	1,146,861	Payne	392,336	3.90	1,530,110
Day	64,700	2.10	135,870	Pottawatomie	311,403	3.90	1,214,472
Dewey	215,790	2.20	474,738	Roger Mills	202,844	2.30	466,541
Garfield	569,241	3.92	2,231,604	Washita	385,804	3.10	1,195,992
Grant	578,129	3.70	2,139,077	Woods	998,225	3.00	2,994,675
Greer	784,549	3.00	2,353,647	Woodward	483,769	2.20	1,064,292
Kay	383,568	4.40	1,687,699				
Kingfisher	490,315	3.55	1,740,619	Total	10,070,112	3.31	33,339,905

Farm property has increased in value, as shown by the annual assessment, $2,671,135 over 1904, and since 1900, $23,464,267.

Annual assessment of farm property.

1900	$9, 875, 638	1903	$27, 204, 160
1901	17, 280, 609	1904	30, 668, 770
1902	22, 614, 650	1905	33, 339, 905

Assessment of live stock, 1905.

Kinds.	Number.	Average value.	Total assessed value.
Horses	342,303	$15.73	$5,383,153
Mules and asses	75,348	22.82	1,719,734
Cattle	984,031	6.67	6,568,296
Sheep and goats	33,893	1.07	36,354
Swine	290,166	1.73	500,706

Assessment of town property, 1905, by counties.

Counties.	Total assessed value of lots.	Counties.	Total assessed value of lots.
Beaver	$50,609	Kiowa	$754,520
Blaine	244,937	Lincoln	514,729
Caddo	551,349	Logan	1,279,199
Canadian	566,941	Noble	371,994
Cleveland	407,443	Oklahoma	3,863,422
Comanche	683,387	Pawnee	474,605
Custer	277,484	Payne	575,275
Day	7,704	Pottawatomie	1,241,895
Dewey	65,488	Roger Mills	269,604
Garfield	753,514	Washita	205,476
Grant	194,640	Woods	493,023
Greer	729,984	Woodward	221,055
Kay	1,078,530		
Kingfisher	343,796	Total	16,220,603

Total assessment, all property, 1905.

Moneys and credits	$4,073,379	Town lots	$16,220,603
Pullman	37,929	Live stock	14,208,243
Telegraph	164,257	Miscellaneous	12,936,327
Telephone	213,763		
Railroad	11,936,315	Total	93,130,721
Farm lands	33,339,905		

CLEVELAND OIL FIELD.

[H. W. Williams.]

Within the last twelve months of the oil and gas development in eastern Pawnee County, in the vicinity of Cleveland, results have been produced that give promise which is highly gratifying. Since the completion of the first well, July 2, 1905, there have been drilled in the Cleveland oil field the total number of 255 wells. Of this number 28 have been dry and nonproducers, 7 having been gas wells, aggregating a daily production of 50,000,000 feet, equaling for fuel and manufacturing purposes 2,500 tons of coal, and 220 wells, which are oil wells producing a daily production of about 11,000 barrels, the present market value of which is 50 cents per barrel. The production would be increased three or four thousand barrels if all available efforts which could be made use of were used to bring about the greatest production. As it stands, there are quite a number of wells only drilled to the oil sand and not drilled in and made producers, and many others are not exerted to their full capacities.

At present the gas is being used for development purposes throughout the field and is piped to Cleveland, where it is used for all lighting, heating, and manufacturing purposes.

The Prairie Oil and Gas Company (a branch of the Standard Oil Company) is at present the only purchaser of the oil, this company having taken a part of the production of the field up to July 1, 1905, and since which time have taken about two-thirds of the daily production, but none held in storage, and by reason of such failure to take all of the oil on the ground and also the daily production, and there being no other purchaser, has greatly discouraged and retarded development.

The wells in the town limits of Cleveland will number about 150, with an average production of 60 barrels per day to the well.

The Prairie Oil and Gas Company has purchased two tracts of land

one-half mile east of Cleveland, aggregating 77 acres, for a tank farm, and have at this time thirteen 35,000-barrel storage tanks built thereon, all filled with oil, and are building and will build 6 more under the present arrangement.

The said Prairie Oil and Gas Company have at this time a 4-inch pipe line connected with this field to convey the oil by way of Ramona, Ind. T., Bartlesville, Ind. T., Independence, Kans., Kansas City, Mo., Whiting, Ind., to the Atlantic seaboard, there being a 6 or 8 inch line from Bartlesville, Ind T.

The low market price of oil, taken in connection with the inadequate pipe-line facilities, has had a retarding effect on the field.

The Cleveland oil tests 35 gravity, but has been, by a ruling and business arrangement of the Prairie Oil and Gas Company, classified and denominated for purchasing purposes 32 grade gravity oil. A number of test wells have been drilled within a radius of 12 miles, but the producing field is limited to a radius of 6 miles of Cleveland.

There is at present stored in the tanks at Cleveland, owned by the Prairie Oil and Gas Company, about 650,000 barrels, and about 250,000 barrels in tanks owned by various operators not yet taken by the Prairie Oil and Gas Company.

There has been invested in the development of this Cleveland field about $1,500,000. The town of Cleveland has, since July 2, 1904, grown from a town of 700 population to a live, busy town of more than 3,000. The effect and influence of this great oil development in the Cleveland oil field has been felt all over the Territory, and has encouraged other localities to prospect for oil and gas, and as a consequence thereof quite a number of wells have been drilled within the last nine months in different parts of the Territory with no good results, with the exception of some promising indications in the northern and southwestern part of the Territory.

ANALYSIS OF PETROLEUM FOUND IN OKLAHOMA.

[Edwin De Barr, chemist, Territorial university.]

Analysis of samples of oil from five different localities, viz, Cleveland, Gotebo, Granite, Lawton, and Newkirk, have been made and are given below. The light, middle, and heavy oils are paraffin oils. The anthracene oil and pitch and bitumen are lubricating and asphalt oils:

	Per cent.
Cleveland oil (specific gravity 0.9295):	
Light oil, boiling at 80–170° C	17.50
Middle oil, boiling at 170–230° C	11.70
Heavy oil, boiling at 230–270° C	8.45
Anthracene oil, boiling above 270° C	50.35
Pitch and bitumen	12.00
	100.00
Gotebo oil (specific gravity 0.9143):	
Light oil, boiling at 80–170° C	18.20
Middle oil, boiling at 170–230° C	18.00
Heavy oil, boiling at 230–270° C	8.55
Anthracene oil, boiling above 270° C	45.75
Pitch and bitumen	9.50
	100.00

	Per cent.
Granite oil (specific gravity, 0.99638):	
Light oil, boiling at 80–170° C	3.00
Middle oil, boiling at 170–230° C	4.50
Heavy oil, boiling at 230–270° C	3.60
Anthracene oil, boiling above 270° C	72.90
Pitch and bitumen	16.00
	100.00
Lawton oil (specific gravity, 0.96198):	
Light oil, boiling at 80–170° C	11.10
Middle oil, boiling at 170–230° C	12.50
Heavy oil, boiling at 230–270° C	8.00
Anthracene oil, boiling above 270° C	53.90
Pitch and bitumen	14.50
	100.00
Newkirk oil:	
Light gasoline oil	1.50
Middle gasoline oil	1.60
Heavy gasoline oil	6.00
Total gasoline oils boiling below 170°	9.10
Light kerosene or coal oil	6.50
Middle kerosene or coal oil	17.875
Heavy kerosene or coal oil	19.375
Total coal oil boiling below 315°	43.75
Light lubricating oil	5.75
Heavy lubricating oil	31.25
Total lubricating oil	37.00
Solid oils	2.50
Residue	7.65
	100.00

Flashes in open tester, 65° F.
Burns at 89° F.
Specific gravity, 0.855.
It is a mixed oil consisting of both paraffin and asphalt bases
The solid oil is paraffin.
The residue consists of charred residue, mainly of coke.

THE OKLAHOMA GRANITE INDUSTRY.

[J. W. Ryder.]

Oklahoma possesses untold riches, which are yet only partially developed, in her immense fields of red granite. The Wichita Mountains, which extend in a northwesterly and southeasterly course across the southern part of the Territory, contain immense areas of the finest red granite in the known world. At the extreme northwestern end of the range, at Granite, in Greer County, is the only place where extensive developments have so far been conducted. The town of Granite takes its name from the character of rock in Headquarter Mountain, at the base of which the town is situated. This mountain is, at its extreme height, 920 feet above the level of the town, and is 6 miles long and 2 miles wide, and nearly every cubic foot of it is a splendid class of red granite, making what is pronounced by experts and practical granite men from all parts of the globe the largest body of the finest granite in the world. Nearly four

years ago the first experiments to determine the value of this stone for monumental and building purposes were conducted at this point, and to-day fully $150,000 is invested in quarrying and polishing plants, trackage, etc. The industry is still in its infancy, but in spite of the serious handicap of exorbitant freight rates is rapidly taking its place as one of the most important industries in Oklahoma. All prominent buildings in the town are constructed of it, and some splendid specimens of curbing, paving, columns, polished and hammered work are to be seen.

Analysis of this rock, which is of a deep red color, shows it to contain only 1.97 per cent iron, as against 5 to 7 per cent, which is commonly shown by the finest grades heretofore known. This small percentage of iron renders the granite practically free from oxidization and decomposition.

Seven companies are represented on the ground to-day. The Abilene Granite Company, a Kansas and Oklahoma concern, has already invested $30,000, and is the oldest concern in active operation in the field to-day.

Its plant is fully equipped with an 80-horsepower boiler, 60-horsepower engine, 4 polishing machines, column cutter, column polisher, overhead trams, air tools, etc., and is the most complete, and in fact the only one of its kind in the West.

The newer companies in the field and their respective investments are as follows: Oklahoma Granite Company, $20,000 in quarries, air tools, loading derricks, etc. Apache Granite Company, quarries, derricks, etc.; this company is now installing a $5,000 polishing and finishing plant. New State Granite Company, a Fitchburg, Mass., concern, has invested $5,000, and is now installing a $12,000 quarrying plant. Red Mountain Granite Company, made up of Charleston, W. Va., capitalists, with actual working capital of $50,000, owns $10,000 worth of quarries and quarry lands here and will install a complete plant at an early date. Mount Airy Granite Company, an Indiana concern, has an investment of $20,000, and is now installing one of the most complete plants in the West. Kansas City Monumental Company has property here valued at $10,000, and is expected to begin operations at an early date. Balcom & Crawford, of Atchison, Kans., have an investment of $3,000 in quarry lands, etc.

It can be readily seen that here is the groundwork for an industry which has not and can not have a competitor between the Missouri River and the Rocky Mountains, and considering the fact that it is located in the center of the immense and rapidly developing Southwest, it is only a question of a few years when this splendid native building material will enter largely into the construction of not only the public buildings of the new State, as well as furnish curbing and paving for the streets of the southwestern cities, but will furnish imperishable monuments of enduring granite to mark the last resting place of the hardy pioneer and the prominent men whose adventurous disposition and sturdy manhood shall build the grandest and newest State of them all—Oklahoma.

FORESTRY.

[J. B. Thoburn.]

Oklahoma is rich in its variety of indigenous arborescent flora, which includes about 40 species. Originally the timber growth was confined principally to the valleys of the streams, except very rough lands in the western part of the Territory and large areas of upland in central and eastern Oklahoma having a sandy surface soil which was more or less covered by timber growth, consisting mostly of oak.

While neither the quantity nor the quality of the timber was such as to attract the lumbering interests, the timber resources were of the very greatest value in the settlement and development of the country, furnishing, as they did, fuel, fencing, building material, and in some instances, bridge timber and railroad ties. In the prairie States to the north of Oklahoma hedge fences of Osage orange, or bois d'arc, were quite generally grown, but when this Territory was settled the abundance of good post timber led to the general adoption of the wire fence. In one sense this was not a matter of good fortune, since the hedge fence has an added value as a wind-break.

The only timber that has been shipped from Oklahoma in appreciable quantities is black walnut. The walnut-log industry has been very active since the first settlement of the country, and now, since the trees of merchantable size and quality are becoming scarce, even the stumps are being dug up for shipment. A few shipments of red cedar have been made, being consigned to Germany, where the wood is used in the manufacture of lead pencils.

Several species of exotic trees have been introduced since the settlement of the country, including the catalpa, the black locust, the Russian mulberry, and others of less value and importance. There are doubtless many other species of timber trees that can be profitably introduced in Oklahoma, including some of the conifers, of which as yet only a few have been planted in an ornamental way.

Artificial timber culture has not received the attention which it deserves in Oklahoma. The question of the economic production of a forest crop that will serve to meet the needs of the local population is one that may well challenge the thoughtful consideration of every progressive community. With the nearer approach of the day when the surplus of America's primeval forest, which once seemed inexhaustible, has been appropriated the above question comes home to every landowner, whether he resides within the area which was originally covered by forest or if he dwells out on the wind-swept prairies where trees never grew.

In addition to the necessity of producing timber for use in the arts and operations of civilized life, the forest growth has other and not less intimate relations of which the state as well as the individual should not lose sight. For instance, the timber grown as a shelter belt serves to break the force of the storms, lessen the evaporating effect of hot winds, and to protect beasts and birds in a beneficial way; and all the while it is growing into posts, poles, and firewood, which will be useful on the farm. Again, on steep sloping lands where the soil is apt to wash during torrential rains, it is often best to keep the land covered with timber in order to bind the soil and

prevent it from washing. The forest thus bears an intimate relation to the problems of drainage, flood prevention, water supply, and irrigation, in all of which in one phase or another the people of Oklahoma are interested.

WICHITA FOREST RESERVE.

[Fred Barde.]

A historic and picturesque portion of southwestern Oklahoma, comprising a toal of 57,120 acres, and known now as the Wichita Forest Reserve, was set aside by proclamation by President William McKinley, July 4, 1901, under the act of Congress entitled "An act to repeal timber culture laws, and for other purposes." Since early days the region had been the home of the Kiowa, Comanche, and other Indian tribes. It includes the most notable peaks of the Wichita Mountain Range, which attain a maximum altitude of 2,700 feet above sea level. The reserve is watered by springs and a number of small streams.

Three classes of land, in about equal proportion, are found in the reserve, and are prairie, mountain, and timber land. The prairie land is devoid of timber, covered with grass, and is best adapted to stock raising. The setting aside of the reserve was opposed by cattlemen, whose herds, year after year, had fattened there since long before Oklahoma was opened to settlement. The mountain land is covered with rock and gigantic bowlders, supporting no timber and little grass. On the timber land is a thin stand of post oak. There is little saw timber. The reproduction is good. The growth of timber has been retarded and, in many places, destroyed by terrific fires that have swept from adjoining prairies.

The reserve is important at present chiefly for the excellent grazing grounds it affords. The forester and custodian, a Federal officer, has authority to permit the grazing of a certain number of cattle. The Federal Government has not begun active work in forest culture in the reserve.

In addition to its segregation for forestry purposes, President Roosevelt, during the last session of Congress, set aside the entire reserve as a national game preserve, in which will be propagated the different kinds of game protected by the Federal Government. As proposed originally, only grouse were to be kept in the preserve, but the Presidential proclamation was general in its scope, and citizens of Oklahoma are hopeful that large game, such as buffalo, elk, deer, and antelope will be given a home there. The preserve is to be inclosed with a game-proof wire fence, which is now building. The forester of the timber reserve serves as custodian of the game preserve.

VALUE OF FARM LANDS.

Good land suitable for agriculture always commands the highest price, particularly if located near a market.

The adaptability of the soil to a variety of crops enables the farmer to not only raise several kinds of products during the season, but also in the event of a failure of any one of them he still has time to plow up and plant some other grain with the certainty of its maturing, owing to the long growing season and the precipitation of moisture during the months of July and August.

These features, peculiar to Oklahoma, are in themselves sufficient to warrant higher prices for farm lands, and the time is rapidly approaching when farm lands will be considered as good and as safe investments at $100 per acre as they are in the Mississippi Valley. Indeed, that price has been asked and obtained already in several instances.

The prevailing prices for good farm property with some improvements ranges from $15 to $60 per acre, according to location and distance from market.

PRACTICAL IRRIGATION.

[W. L. Fullerton.]

Irrigation has not received the attention in Oklahoma that its importance would justify, partly because our population has been drawn mainly from the humid regions of the United States and partly because other tasks incident to home building have seemed of greater importance. But considerable interest in this subject has been manifested in the western half of this Territory for more than ten years past, and wherever an intelligent effort has been made the result has been satisfactory and profitable.

So far there has been no very large enterprise completed, and the greatest efforts have been directed toward the production of fruits and vegetables for domestic uses by those who have felt the need of a sure and constant supply of these important items. There have been, however, a few noteworthy efforts at commercial farming by irrigation. These efforts have included the production of alfalfa, wheat, oats, corn, Kaffir corn, and milo maize, as field crops of the cheaper class, and of the kinds requiring more attention have been grown fruits, peaches, grapes, pears, cherries, strawberries, apples, native currants, blackberries, apricots, plums, and gooseberries, and they have responded to irrigation and been found to pay best in the order named.

Of vegetables and "truck" grown by the artificial application of water, the following seem to respond and pay best in the order named: Onions, rhubarb, tomatoes, pumpkins, yams and other sweet potatoes, table beets, Irish potatoes, table turnips, cabbage, lettuce, radishes, sweet and hot peppers, carrots, parsnips, eggplants, and many others of minor importance.

WATER SUPPLY AND HOW OBTAINED.

Water for irrigation has been obtained by gravity flow from springs, creeks, and rivers, though the fall of our streams is so slight that this process has been found rather too expensive for individual efforts of our people with limited capital. But so far no enterprise of this kind has been abandoned because of the difficulties in the way of success, but their proprietors have gone on improving from year to year, in some instances for the past eleven years.

But by far the greater part of the water used has been obtained by pumping by wind, water, gasoline, and steam power. Wind power has been used for the most part to irrigate the home garden and orchard and also the lawn and flowers and is usually a part of the system provided for watering the stock kept on the farm or ranch But it is

a fact well worthy of mention that our people living in villages, towns, and cities manifest the keenest interest and work industriously applying what water they can obtain to the most beneficial uses, and the result has been extremely gratifying.

Well water is usually found at very moderate depths here, and wherever the supply has been plentiful all efforts to irrigate the home orchard and garden have amply rewarded the homesteader. But there are few localities so favored that windmill irrigation has been developed on a commercial scale. Pumping for irrigation with gasoline engine from wells of moderate depths and from flowing streams having agricultural land lying along their banks and used for commercial fruit growing, "trucking," and the growing of nursery stocks has proven highly satisfactory. The use of piston pumps, with pump jack (to regulate speed) in case of small engine, has proven most satisfactory; but where engines with 6 to 15 horsepower, with a lift of 10 to 22 feet, has been used a rotary or centrifugal pump has been found most profitable and satisfactory.

Oklahoma, Canadian, Greer, and a few other counties have irrigation farms supplied with water from streams raised by means of water wheels, and pumps—current, undershot and overshot—and turbine wheels are used to drive rotary pumps in most cases. This class of pumping plants have proven both satisfactory and profitable when substantially constructed and carefully managed.

The use of steam power in developing a water supply for irrigation is little used here on account of the high price of fuel in the region where irrigation is most needed and when used is in connection with some other enterprise using steam as power.

METHODS OF APPLYING WATER.

The flooding method is confined to the growing of alfalfa and the small grains, and so far is little practiced in this Territory. The furrow or rill system is the prevailing system in orchard, garden, truck, and all other row crops. The advantages this system possesses are economy of water, easy and uniform application, and prevents injury which might result from water coming in contact with the crowns of tender vegetables and plants and admits of after-cultivation, a very important item in good irrigation farming.

PRODUCTION BY IRRIGATION.

Farming by irrigation requires considerable skill and labor, and probably would be little practiced if it were not for the wonderful and almost magical results obtained, and while this is the universal rule, it does seem that the careful irrigator in Oklahoma receives the most bountiful reward of anyone, and there certainly are many things in their favor, viz, seven months in the year without any frost, and the remaining five so mild that all the hardier vegetables are planted in February and March, and cabbages, kale, turnips, mustard, and lettuce remain in good condition in the open ground until late in December, and irrigation orchards are never injured by winter cold and seldom hurt by frost in spring. Coupled with these climatic conditions we have a soil so fertile that very slight improvement of crops results from the application of fertilizers to irrigated lands, and the quantity and quality, especially of fruits and vegetables, is

a continual surprise to those who grow them, and specimens that exceed the representations of the nurserymen and seedmen who furnish the stock are very common.

From the excellent results attained by private efforts and the new impetus given by Government investigations, together with the encouragement given to capital, both private and corporate, by our liberal irrigation statutes, it is but reasonable to expect a very steady and healthy growth of this important industry, which will directly and indirectly benefit every other industry in this Territory.

PUBLIC HIGHWAYS.

[A. C. Titus.]

Interest in the subject of the betterment of our public highways has grown steadily since the movement first took organized form. Several inter-Territorial good-roads conventions, two good-roads train itineraries, conducted by the National Good Roads Association, and the Road Division of the United States Agricultural Department, agitation of the subject of good roads by the Territorial press, together with the rapidly increasing tonnage of farm products and supplies to be moved, have all contributed to the formation of a strong public sentiment in favor of better roads.

Numerous changes have been made in the road laws by past legislatures in attempting to provide for working the roads of the entire Territory under one general law, but the system in vogue has not given satisfaction in all parts of the Territory, owing to the widely varying conditions existing. While the plan of depending solely upon the poll-tax labor to keep the roads passable seems to meet all the requirements in some sections, the poll tax, with the amount that township boards are authorized to levy, is inadequate to keep the roads in proper condition to carry the traffic of the older counties. The last legislature enacted a law drawn by a joint committee composed of members of the board of agriculture and the Inter-Territorial Good Roads Association, which becomes operative in counties adopting it at special or general elections, and which, it is believed, will be a great improvement over the old system. The law places all highway construction and care under the general supervision of a competent civil engineer, who, as a county official, takes the place of county surveyor. The county is divided into larger road districts, and the road work is done under the direction of a supervisor in each district. The law authorizing township boards to levy a road and bridge tax is repealed in so far as counties adopting this law are concerned, and a special road fund is created by a levy on all taxable property of the county. The poll tax is reduced to $2, payable in cash, except that it, as well as other road taxes, may be worked out, provided the service rendered is satisfactory to the supervisor.

Petitions are now being circulated in Logan County as a preliminary step to the adoption of this law.

Another result of the good-roads movement, which it is believed will bear good fruit in the future, is the institution of a course in the Agricultural and Mechanical College at Stillwater, teaching highway engineering.

The committee also framed a bill providing for the utilization of convict labor in county road work, but the measure failed to pass the council.

A bill to encourage the use of wide tires on wagons and other heavy-draft vehicles, was also defeated.

RAILWAYS.

There are nine lines of railway in Oklahoma, all but one in operation, and that in course of construction. Every county has some railway mileage. With the exception of a few of the western counties, good markets are within the reach of all through the numerous competing lines. Direct communication is afforded with the Gulf ports, as well as Kansas City, St. Louis, Denver, and the Southwest.

There are 3,030.63 miles of main track, siding, and right of way in the Territory, divided as follows:

	Miles.
Atchison, Topeka and Santa Fe Railway	733.42
Chilcago, Rock Island and Pacific	1,011.90
Denver, Enid and Gulf	61.59
Fort Smith and Western	66.97
St. Louis and San Francisco	774.25
Kansas City, Mexico and Orient	66.38
Missouri, Kansas and Texas	269.76
St. Louis, El Reno and Western	46.37

RAILWAY BUILDING.

It is reported on good authority that some 2,500 miles of railway will be constructed in the southwestern States and Territories during 1905, and of this amount nearly one-third will built in Oklahoma and Indian Territory.

The growth in business activity is greater here than it is in any other locality.

The Kansas City, Mexico and Orient is rapidly completing its line through Oklahoma, and it is expected that it will be finished from Kansas City to Sweetwater, Tex., this year.

The Denver, Enid and Gulf will build from Guthrie to Oklahoma City, and also extend the line from Enid to Denver. Construction work amounting to $1,000,000 has been authorized.

Other lines are projected, and it is probable some active work will be done this season on some of them.

The new mileage for the year ending June 30, 1905, amounted to 432.71.

RAILWAYS CHARTERED.

Following is a list of the railways chartered by the Territorial secretary during the past year:

Canadian Valley and Western Railway Company. Capital stock, $3,000,000.

The Denver, Wichita and Memphis Railway Company. Capital stock, $1,000,000.

The El Paso, Mountain Park and St. Louis Railroad Company. Capital stock, $7,000,000.

The Enid, Beaver, Guymon and Western Railway Company. Capital stock, $5,000,000.

The Guthrie Railway Company. Capital stock, $300,000.

The Kansas, Okmulgee and Gulf Railroad Company. Capital stock, $2,500,000.

The Kansas, Oklahoma, Texas and Gulf Railway Company. Capital stock, $10,000,000.

The Kansas, Oklahoma and Poteau Valley Railway Company. Capital stock, $10,000,000.

Manufacturers' Belt Line Railroad Company. Capital stock, $500,000.

The Mississippi Valley and Gulf Railroad Company. Capital stock, $50,000,000.

The Missouri, Oklahoma and Gulf Railway Company. Capital stock, $10,000,000.

The Muskogee and Texas Railway Company. Capital stock, $4,000,000.

The Oklahoma Inter-Urban Traction Company. Capital stock, $300,000.

The Oklahoma City Terminal Association. Capital stock, $150,000.

The Oklahoma Electric Railway Company. Capital stock, $250,000.

The Oklahoma City, Henryette and St. Louis Railway Company. Capital stock, $6,000,000.

The Oklahoma and Northwestern Railroad Company. Capital stock, $1,875,000.

The Oklahoma and Texas Railroad Company. Capital stock, $5,000,000.

The Vinita and Western Railway Company. Capital stock, $10,000.

The Wildman Central and Wichita Mountain Railway Company. Capital stock, $20,000.

TELEGRAPH AND TELEPHONE.

Two companies, the Western Union and the Postal Telegraph, have extensive systems throughout the Territory.

Among the telephone companies now doing business in the Territory the Pioneer has the most extensive system. Mr. John M. Noble, general manager, writes as follows concerning the condition of the Pioneer:

> The Pioneer Telephone and Telegraph Company is operating quite extensively in this Territory. Oklahoma, though a Territory, is more fully developed with modern telephone facilities than many of the older States, the Pioneer Telephone and Telegraph Company alone having lines in 15 of the 26 counties.

They now have in operation in their system (which extends also over a major portion of Indian Territory, as well as Oklahoma) 12,000 miles of toll-line wire strung on 3,400 miles of pole line. The larger portion of this wire is copper, and they are giving service to 350 cities and towns in the two Territories. They have exchanges at the following principal cities in Oklahoma Territory:

Alva, Asher, Blackwell, Carmen, Chandler, Cherokee, Edmond, Elreno, Enid, Guthrie, Kremlin, Medford, Newkirk, Oklahoma City, Ponca City, Pondcreek, Perry, Pawnee, Ralston, Shawnee, Stillwater, and Yukon. They are serving at these exchanges 8,000 subscribers.

During the year 1904 this company expended approximately $400,000 in the improvement and extension of property, including the purchase of various small companies. During the year 1905 the anticipated expenditure will reach $700,000.

Mr. J. F. Beydechect, auditor of the Topeka and Elreno Telephone Company, sends in the following report:

We have in operation about 578 miles of toll line. Exchanges at Elreno, Chickasha, Ind. T., Anadarko, Lawton, Snyder, Hobart, Weatherford, Clinton, Arapaho, Mountain View, and Bridgeport.

In addition to the above we have at the present time in process of construction about 125 miles of toll line, and we intend extending our toll lines considerably within the next year.

Horace Truman, manager of Blaine County Telephone Company, states as follows:

Blaine County Telephone Company owns and operates 20 miles of lines between Geary and Watonga, one station, Greenfield, between. Greenfield has only one telephone.

No improvements have been made this year, except to strengthen the lines.

Mr. Thad Spencer, of the Eagle Telephone Company, writes that the Eagle Telephone Company has 35 miles of wire and 8 telephones, and has made no extension in the past year.

The Independent Telephone Company, of Kingfisher, owned by W. J. Steele, furnishes service as a local exchange and has made no extensions during the past year.

Besides the above mentioned there are many private or neighborhood concerns in operation which have not reported as to their mileage or improvements.

NEWSPAPERS.

The newspapers published in the Territory aggregate 345, of which 30 are dailies, 287 are published weekly, 5 semimonthly, 19 monthly, and 4 quarterly.

CHURCHES AND FRATERNAL SOCIETIES.

Oklahoma is well supplied with churches, nearly every denomination being represented. The various church societies have furnished me the following statistics. Having compared them with former reports, I find considerable growth in some instances, and all show an increase in number of members. Many fine church edifices are to be found in some of our cities.

The West is a fertile field for the fraternal society. All of the old orders are represented, and in some localities have beautiful and costly homes. Most of the existing orders have reported their membership and amount of property owned. Below will be found a table containing them:

PROTESTANT EPISCOPAL CHURCH.

Number of church buildings	19
Value of church buildings	$50,000
Number of rectories	8
Number of organized missions	22
Number of other regular stations	14
Number of communicants	950
Number of clergy	11
Number of Sunday schools	15
Membership of Sunday schools	350
Value of all church property	$65,000

METHODIST EPISCOPAL CHURCH.

Number of church buildings	173
Value of church buildings	$313,800
Number of parsonages	92
Value of parsonages	$66,925
Church membership	19,000
Number of ministers	163
Number of organized missions	3
Number of Sunday schools	220
Number of Epworth Leagues	125
Membership of Epworth Leagues	4,250
Membership of Sunday schools	18,000

METHODIST EPISCOPAL CHURCH SOUTH.

Pastoral charges	81
Presiding elders	6
Pastors	81
Local preachers	65
Members	10,691
Additions	1,240
Value of church buildings	$90,300
Church buildings	90
Value of parsonages	$20,000
Parsonages	50
Epworth League societies	52
Epworth League membership	1,262
Sunday schools	108
Officers and teachers	701
Scholars	6,012
Organized societies	198

PRESBYTERIAN CHURCH.

Number of church buildings	56
Value of church buildings	$150,000
Number of manses	19
Value of manses	$36,000
Church membership	4,500
Number of ministers	54
Number of organized churches	66
Number of Sunday schools	60
Membership of Sunday schools	5,300

BAPTIST CHURCH.

Number of church buildings	175
Value of church buildings	$175,000
Number of parsonages	25
Value of parsonages	$25,000
Church membership	19,000
Number of Sunday schools	175
Membership of Sunday schools	20,000
Number of Baptist Young People's Unions	75
Membership of Baptist Young People's Union	1,500

CONGREGATIONAL CHURCH.

Number of church buildings	79
Number of parsonages	44
Value of church buildings and parsonages	$152,379
Church membership	2,766
Number of ministers	61
Number of Sunday schools	106
Membership of Sunday schools	4,254
Number of Y. P. S. C. E. societies	29
Membership of Y. P. S. C. E. societies	741

FRIENDS.

Number of church buildings	15
Value of church buildings	$20,000
Number of parsonages	10
Value of parsonages	$7,500
Church membership	1,500
Indian members	150
Indian missions	5
Number of ministers	25
Number of Sunday schools	20
Membership of Sunday schools	1,000

CHRISTIAN CHURCH.

Membership	23,117
Number of organizations	376
Number of church buildings	156
Number of ministers	170
Number of Sunday schools	237
Number of Sunday school scholars	21,300
Number of Christian Endeavor societies	72
Value of church property	$314,000

ROMAN CATHOLIC CHURCH.

Bishop	1
Churches	68
Priests	33
Chapels	7
Stations visited	144
New residences for priests	3
Church membership	22,000
Academies	4
Colleges for boys	1
Schools for boys and girls	28
Schools for colored	2
Convents	28
Monastery	1
Hospital	1
Value of school and church property	$255,000
Number of Sunday schools	68
Membership of Sunday schools	1,800

MEMBERSHIP OF COLORED CHURCHES.

Missionary Baptist	8,682
African Methodist Episcopal Church	3,640
Colored Methodist Episcopal Church	820
Methodist Episcopal Church (colored wing)	840
Primitive Baptist	486
Colored Presbyterian	141
Congregational	412
Church of God	201

YOUNG PEOPLES' SOCIETIES OF CHRISTIAN ENDEAVOR.

Number of societies	206
Number of members	7,004
Number of junior societies	50
Number of members	1,700
Total number of societies	256
Total membership	8,704
New societies organized during year ending June 30, 1905	36

SUNDAY SCHOOLS.

Number of Sunday schools (whites only)	1,340
Number of officers and teachers	13,480
Number of scholars	79,016

Fraternal organizations.

Name of order.	Organizations.	New organizations.	Members.	New members.	Value of property.
Masons	110	20	6,676	823	$7,415.80
Knights Templar	12	2	588	78	----------
Eastern Star	53	7	2,331	470	1,411.41
Odd Fellows	208	27	10,837	810	131,503.95
Rebekah lodges	127	2	6,533	1,556	6,883.21
Ancient Order United Workmen	91	1	3,527	396	----------
Knights of Pythias	63	3	3,250	425	3,500.00
Woodmen of the World	113	8	3,751	758	----------
Grand Army of the Republic	77	7	1,605	120	1,950.00
Confederate Veterans	30	5	4,100	559	----------
Order of Elks	6	----------	976	234	23,465.00
Woman's Christian Temperance Union	142	11	2,164	325	----------
Women's Federated Clubs	80	10	1,651	178	1,050.00
Women's Relief Corps	37	4	854	77	1,750.00
Scottish Rite Masons	1	----------	885	128	75,000.00

TERRITORIAL INSTITUTIONS OF LEARNING.

There are seven institutions of higher learning supported by the Territory.

The University is located at Norman, in Cleveland County, while the University Preparatory School is located at Tonkawa, in Kay County. The Agricultural and Mechanical College is located at Stillwater, in Payne County, and the Colored Agricultural and Normal University is located at Langston.

There are three normal schools, viz, the Central State, at Edmond, the Northwestern, at Alva, and the Southwestern, at Weatherford.

Following will be found something relating to each school, prepared by the various presidents of the institutions:

THE UNIVERSITY.

[David R. Boyd, president.]

The State University of Oklahoma is the head of the public school system of the Territory. It was founded by the State in order to provide the young men and women of the Territory with a school in which they might do advanced academic and professional work. It begins where the high school leaves off, and its training is founded on that got in the secondary public schools. A sense of this close connection between the public schools and the university determines in large measure the requirements for admission to the university, its spirit, and course of study.

The control of the university is intrusted to a board of regents, consisting of the governor of Oklahoma, ex officio, and of five members appointed by the governor.

THE SCHOOLS.

The university is made up of the following schools: The college of arts and sciences, the school of medicine, the school of applied science, the school of pharmacy, the school of mines, the school of fine arts, and the preparatory school.

The college of arts and sciences embraces an undergraduate course, chiefly elective, and a combined course in collegiate and medical studies; both courses lead to the bachelor degree.

The school of medicine covers the first two years' work of a regular four-year course in medicine and prepares the student to enter the third-year class in any other medical college.

The school of applied science covers four years' work in mechanical, electrical, and civil engineering, and leads to the degree of bachelor of science in mechanical, electrical, and civil engineering.

The school of pharmacy covers two years' work and leads to the degree of pharmaceutical chemist.

The school of mines covers four years' work and leads to the degree of bachelor of science in mining.

The school of fine arts embraces (*a*) a preparatory course in music, elocution, oratory, and art; (*b*) an advanced course in music, elocution, oratory and art; (*c*) a graduate course in piano, voice, and violin.

The preparatory school covers a four-year course, leading to the college of arts and sciences.

FOUNDATION.

The university is founded upon the authority of an act of the legislature of the Territory of Oklahoma, entitled "An act to locate and establish the University of Oklahoma." The act provided that when $10,000 and 40 acres of land should be given to the Territory by the city of Norman the school should be located at that place. These requirements having been met, the university was established at Norman in 1892.

The law then proceeds to state more explicitly the scope and purposes of the school, as follows:

SEC. 9. The object of the University of Oklahoma shall be to provide the means of acquiring a thorough knowledge of the various branches of learning connected with scientific, industrial, and professional pursuits, in the instruction and training of persons in the theory and art of teaching, and also the fundamental laws of the United States and this Territory in what regards the rights and duties of citizens.

INCOME.

The university is supported out of the general revenues of the Territory. The legislature of 1905 set apart the sum of $50,000 a year for two years to provide a general maintenance fund for the university. In addition to this, section 13 in each township in what is known as the "Cherokee Outlet," and in the Kiowa, Comanche, and Wichita country, opened to settlement in 1901, has been reserved for university, normal school, and agricultural college purposes. The lands so reserved are now leased for the benefit of the schools named, and bring to the university at present about $9,000 a year.

SITUATION.

Norman, the seat of the university, is the county seat of Cleveland County. It is an excellent town of 3,500 inhabitants, situated 18 miles south of Oklahoma City on the Atchison, Topeka and Santa Fe Railroad in approximately the geographical center of the two Territories. The winters are mild and the climate is preeminently healthful. The citizens of Norman are from all parts of the United States and are united in their hearty sympathy with educational matters.

THE GROUNDS.

The university campus, comprising 60 acres, lies at a slight elevation overlooking the valley of the South Canadian River, 1 mile south of the business portion of the town. The grounds have been divided into six quadrangular plots, with drives. Four of these quadrangles will be given over to the buildings, one to athletics, and one is unassigned at present. In each square the buildings will be grouped eventually around an open court.

Immediately on the completion of the first building, in 1894, large plantings of trees were made, chiefly elm and ash. From the first they made fine growth and are now of a size to make the campus, with its approach, one of the most attractive spots in Oklahoma. In the spring of 1903 the grounds were carefully platted, and since then the development has been rapid. Other large plantings have been made, which are part of a well-thought-out plan. Fourteen years ago the campus was bare prairie. To make the grounds over so that they should be beautiful in themselves and a fit setting for the buildings takes time and care, but it is something that the university management has greatly at heart, and the remarkable development already brought about promises much for the future.

THE BUILDINGS.

University Hall.—Erected in 1902–3 at a cost of $70,000, contains the offices of the president, secretary, registrar, and regents, with suites of recitation rooms, offices, society halls, etc. It is built of buff brick, with terra-cotta trimmings and basement of planed limestone, in the Renaissance style of architecture. Formal entrance into this building took place March 15, 1903.

Science Hall.—The old Science Hall, with all its contents, was burned on the night of January 6, 1903. This was the first building on the campus and was completed in 1894. Among the contents destroyed were university and private scientific collections, an excellent library of 12,000 volumes, fixtures, furniture, physical and chemical apparatus.

The new Science Hall is a gray pressed-brick structure, 63 by 125 feet, with limestone trimmings. More particular descriptions of it will be found under the descriptions of the laboratories of chemistry, biology, and geology. Occupation of this building took place in September, 1904.

Carnegie Library.—The library building is a gift from Andrew Carnegie, esq. It is built of gray brick, and has two stories and a basement. The general reading room and offices are on the first floor. On the second floor is a large room for general meetings, together with three seminary rooms. In the rear is a large stack annex, fitted with sheet-metal stacks. For the present the women's gymnasium occupies the basement. The building was opened to use January, 1905.

Gymnasium.—The university management has recognized physical training as an essential part of the work of the university. In the summer of 1903 a new gymnasium, 55 by 100 feet, was built. This is divided into six rooms. The main hall, 20 feet high, has 3,200 square feet of unobstructed floor space. The locker room accommodates 500 individual lockers. The bathroom adjacent is fitted with spray and shower baths, and supplied with hot and cold water. The

director's office and an individual exercising room occupy the east end. The building is equipped throughout with all the essentials of a good gymnasium.

The woman's gymnasium occupies the entire basement of the new Carnegie Library. The main room, 12 feet high, contains 4,000 square feet of floor space. The east wing, 30 by 40 feet, is used as a locker and bathroom. The locker room is provided with four dressing rooms, each containing 20 lockers. The dressing rooms connect with 12 individual shower and spray baths supplied with hot and cold water.

Shops.—The engineering shops are in one-story wooden buildings, 48 by 86 feet. They contain a well-equipped woodworking department, physical laboratory, drawing room, and class rooms.

Anatomical laboratory.—This building, consisting of a large dissecting room, a class room and library, and a store and preparation room, lies west of the workshops. It was especially constructed for work in human anatomy.

A smaller building adjacent to the anatomical laboratory is used for taxidermy and as a general preparation shop for museum material.

Heating plant.—All buildings are heated by steam from a central heating plant, and are completely wired and supplied with electric lights.

FACULTY.

The faculty consists of 33 members. They are specialists chosen from such schools as Harvard, Yale, Princeton, Columbia, etc. A number have advanced degrees from foreign universities such as Halle, Vienna, and Leipzig. At the annual meeting of the board of regents held in June, 1905, an instructor in mathematics, two in engineering, one in biology, one in political science, and one in romance languages were added. There are no undergraduate teachers.

ENROLLMENT.

The following is a summary of the enrollment in the various schools for 1904–5:

College of arts and sciences:	
Graduate students	3
Seniors	8
Juniors	25
Sophomores	22
Freshmen	52
Specials	15
Total	125
School of pharmacy:	
Second year	8
First year	23
Specials	12
Total	43
School of medicine:	
Second year	0
First year	7
Total	7

School of fine arts:	
Seniors	1
Juniors	3
Sophomores	8
Freshmen	10
Specials	91
Total	113
School of mines:	
Second year	4
First year	2
Total	6
School of applied science:	
First year	9
Preparatory school:	
Third year	22
Second year	62
First year	101
Total	185
Business course	29
Grand total	517
Repetitions	42
Total enrollment to May 1, 1905	475

THE UNIVERSITY PREPARATORY SCHOOL.

[G. W. Finley, acting president.]

The University Preparatory School has finished three years of work. It was founded by the legislature of 1901 and began work in the fall of 1902, with a faculty of 8 and an enrollment of 227. The faculty during 1904–5 numbered 15, and the enrollment reached 383.

No better place could be found in the Territory for the location of a Territorial school than Tonkawa. It is situated on the north bank of the Salt Fork River, in one of the very richest sections of Oklahoma. The water is of the very best and is found in an inexhaustible supply within 15 feet of the surface of the ground. The town is reached by the Santa Fe Railroad from the north.

At present the school occupies a four-story building, 54 by 96 feet, of limestone and pressed brick. The legislature of 1905 appropriated $60,000 for the erection and equipment of a new building. This building has been planned and the contract let. It will be a three-story building, 100 by 130 feet, of material similar to that in the old building. A heating plant will be constructed which will have sufficient capacity to heat both buildings. The new building will contain an auditorium, a drill hall and gymnasium, bath and locker rooms, cloak and toilet rooms, offices, laboratories, library and study room, drawing room, and class rooms.

The campus contains 20 acres of ground. Near the center is a large circular driveway bordered by a double row of trees. Within the driveway is a grove of elms, poplars, maples, and locusts. In the center of this grove stands the school building. Outside of the

drive the campus is covered with Bermuda grass. Three rows of trees extend entirely around the 20 acres.

The institution is supported by one-seventh of the rental from section 13, and by direct appropriations by the legislature. The legislature of 1905 appropriated $17,500 for each of the two years following for running expenses, and $60,000 for building purposes.

The purpose of the University Preparatory School is to prepare for freshman standing in the University of Oklahoma at Norman, and at the same time to give to those who attend a good foundation for any work they may choose in life.

The organization is as follows:

(1) The regular preparatory school, with three courses of study of four years each: The Latin, the modern language, and the English or scientific.

(2) The commercial school, with two courses of one year each, the bookkeeping course, and the stenographic course.

(3) The school of music, which offers courses in piano, voice, violin, mandolin, guitar, and clarinet, with opportunities for organization work in band, orchestra, club, and choruses.

(4) School of elocution.

Great care has been taken by the board of regents in building up the faculty. Their aim has been to secure only those teachers who were enthusiastic workers, and who were at the same time fit models for the young people to copy. This policy has given to the University Preparatory School a corps of teachers which is very exceptional. Each member of the faculty is deeply interested in the students, and is willing to do all in his power to help them, regardless of how much time and labor that may mean.

The school believes in properly regulated athletic sports. It does not believe that athletics should be considered the chief thing by any student, but that much good may come from the exercise gained in the various college games if they are entered into with the proper spirit. The various teams are managed by a member of the faculty, who looks after finances, arranges schedules, accompanies the teams on their trips out of town, etc.

Good class standing is a condition precedent to membership on any team. When, in the judgment of the faculty, any student is allowing athletics to interfere with his school work, he is required to withdraw from the team.

The military department has completed one year of work and is in a flourishing condition. During the year a marked improvement was noticed in the carriage of the young men. At the close of the spring term a handsome banner was offered to the company making the best appearance in a competitive drill. The banner was won by Company B.

There are now three literary societies: The Fergusonian and the Adelphian for young men, and the Athenian for young women. The Adelphian was organized in the winter of 1905. These societies are a source of valuable training in debates, essay writing, oratory, and parliamentary law.

Both Y. M. C. A. and Y. W. C. A. have organizations in the school. They are strong factors in the molding of character. The Y. M. C. A. meets Friday evenings just before society, and the Y. W. C. A. meets on Sunday afternoons.

The numbers who finished courses in 1905 are as follows:

Regular preparatory course	3
Business course	26
Stenographic course	10
Teachers' review course	12

Probably the most remarkable thing about the institution is the earnestness shown by the students. Each one seems to be anxious to get just as much out of his course as it is possible for him to get. The tendency of many of the students is to work too hard, and we find it necessary to caution individuals in regard to taking more outdoor exercise.

The prospects for the coming year's work are very good, indeed. Steam heat will replace the stoves which have been in use, the course has been raised, there will be more students in the higher classes, and on the whole everything points to the conclusion that the University Preparatory School is entering on what is to be the best year in its existence up to the present time.

CENTRAL STATE NORMAL SCHOOL.

[F. H. Umholtz, president.]

Located and established.—The Central State Normal School of Oklahoma was located and established at Edmond by legislative enactment in 1890, upon the conditions—which were promptly met—that Oklahoma County donate $5,000 in bonds and that the town of Edmond donate 40 acres of land for a school site. Two thousand dollars additional in bonds was donated by the town.

Edmond is a thriving city of more than 2,500 inhabitants, situated about midway between Guthrie and Oklahoma City, on the highest point on the Santa Fe Railway, and preeminently distinguished for its healthfulness and for the beauty of its surroundings. It is distinctively a college town, its citizens having established homes here largely because the town is free from many of the vices commonly prevalent in county-seat towns.

Buildings.—The original structure of the normal school, built of brick, was completed in 1893; the wings, built of stone, were erected in 1894 and 1895. The entire building contains 16 class rooms, gymnasium, 2 bathrooms, and a large room for manual training.

To relieve the crowded condition and to increase the facilities for instruction, the legislative assembly of 1893 made an appropriation of $40,000 for the erection of an additional building. The plans of the new building are in accord with the highest attainments possible in modern educational facilities. The structure, built of pressed brick and stone, is three stories high and contains the following rooms: An assembly hall of 800 seating capacity; 2 cloakrooms (with toilet), adjacent to assembly hall; 2 laboratories, reception hall, president's office, regents' room, library, reading room, and 13 recitation rooms. This constitutes the main building and is especially adapted to normal school purposes.

A central heating building has also been erected, by which both the other buildings are heated throughout with steam. This building is located about 200 feet away from either building, thus removing all danger from fire or explosion. This steam plant also furnishes water for the lavatories, toilet rooms, and baths of the other buildings.

Library and laboratories.—The library and the reading room of the Central State Normal School are furnished with the best books and current magazines that can be secured. These are open to all students every day except Sunday.

The laboratories—chemical, physical, physiological, and biological—are well supplied with modern appliances for scientific experimentation and investigation. A new telescope has been added recently to the department of astronomy.

Training school.—In connection with the Central State Normal School there is maintained a well-equipped training school, furnishing ample opportunity for practice in teaching on the part of those about to graduate from this institution.

In addition to the facilities for professional training mentioned above, there are maintained excellent literary societies, Young Men's Christian Association and Young Women's Christian Association, an orchestra, a band, and a lecture course of unsurpassed attractiveness.

Manual training.—The manual-training department established last fall has fully met the most sanguine expectations. The scope of this department will be greatly enlarged next year, so as to give the greatest possible opportunity for development in this important field of work.

Physical training.—A room 60 by 60 feet, well lighted and ventilated, has been provided for a gymnasium and has been equipped with all the modern appliances for physical culture, together with necessary adjuncts, bathrooms, lavatories, and lockers. Cleanliness and physical vigor on the part of every student is thus made possible and is emphasized by the institution.

Diploma.—The diploma given to the student upon graduation is a life certificate, valid in all schools of the Territory.

Growth of the institution.—The institution has grown within the past four years from 337 students in 1901 to 903 in 1905. More than a hundred students have within the past ten years completed the normal school course of study, and hundreds of others are now teaching in the Territory who have received a partial training in this school. About one-half the students who attended this institution the past year expect to teach in some of the schools of the Territory next year. Therefore, more than 400 schools will be directly benefited through the efforts of the normal school the past year. It will be seen from these facts that the institution is subserving the ends for which it was established.

A large number of the students attending this institution earn the money necessary to pay their way through school by teaching a part of the year; they then attend school the remaining part. Tuition is free in all departments except that of instrumental music.

The prospects for a largely increased attendance next year are very flattering, as well as for greatly increased efficiency and usefulness.

Faculty.—The faculty for 1905–6 will consist of 30 members, all of whom are men and women of special training, education, and teaching ability, who take a sympathetic interest in the welfare of the student.

Purpose.—The function of the normal school is to prepare young men and young women to teach, and they must prepare them thoroughly and masterfully to teach whatever is to be taught in the public

schools. Whatever is put into the public schools, and therefore into the State, must first be put into the normal schools. This, then, is the high function of the normal schools, and no low-grade, slipshod, unprofessional work can be tolerated here. The scientific spirit, so rife everywhere to-day, must govern here as in the other professions. The child in the rural school needs the skillful touch of the trained master as much as does the child of the city school. And withal, the higher type of learning required of the high school teacher and of the city superintendent can not be ignored by the schools that profess to train the teacher of the Commonwealth for their important work. The teacher of our youth must know more than mere technical grammar, botany, and geometry, just as a medical student requires a much broader, a more elaborate knowledge of physiology than is taught in the high school, or even in the university or college, so the pedagogical student must have a broader knowledge and a deeper professional insight into the intricate subjects he is to teach than the institutions of general education can offer. In short, the mere smell of scholasticism is not sufficient; he must know something of society and of the business world in order that he may know adequately what to teach and how to teach the youth who are to constitute the citizenship of the State.

The standard of the normal school must, therefore, necessarily rank with the college, the university, and the agricultural and mechanical college, and the Central State Normal School is fully measuring up to this high standard of requirements and excellence.

NORTHWESTERN NORMAL SCHOOL.

[T. W. Conway, president.]

The past year has been one of the most successful ones in the history of the school. In numbers we have exceeded the enrollment of any other year by more than 100 students, reaching an enrollment that lacks but few of 800.

The professional interest shown during the past year has certainly been very encouraging to both students and teachers. The training school is becoming one of the very popular departments of our school, which means much for the educational interests in this section of our State. Teachers are beginning to realize as never before that if they are to succeed and put their profession on a par with law and medicine it means that they must do laboratory work under the supervision of skilled instructors who are able to reduce all errors to a minimum.

Advancement has been made along all lines of work during the past year, and the course of instruction has been raised until it is now equal to any normal course in the West.

It is with great pride and satisfaction that we look forward to the time when the new library and science hall will be completed by the very generous appropriation made by the last general assembly. Plans are now maturing for a building that will meet the requirements of this institution, the same to be commenced whenever Congress gives its consent to the acts passed by the eighth legislative assembly of Oklahoma.

The large increase of students for the past several years makes additional room a necessity, and the new building will be hailed with delight by both faculty and students.

Greater stress than usual is now being laid on the matter of manual training, and the public school teachers of this country are realizing that they must know how to train the hand as well as the head, in order that the boy and girl of to-day receive such instruction and training as will best fit them to meet the duties of life and citizenship to the best advantage for all concerned.

The Northwestern Normal School has been dealt with very liberally by the legislature and board of regents, and owing to the fact that liberal salaries are now being paid in all positions it has enabled the administration to secure a faculty of competent men and women, who for experience and scholarship can not be excelled. It is the aim of all connected with this institution to make it meet the requirements of the present high standard of civilization that our Territory enjoys. To do this, ample provision has been made for the financial care of the institution, and great pains have been taken in selecting a faculty of professional men and women to administer the affairs of the school and to promulgate a system of instruction that the experience and wisdom of the past fully justifies.

With harmony prevailing in all departments of school work, and with a zealous body of teachers earnestly striving to make the school a success, we have every reason to hope that the future of the school may be as successful as its past history.

SOUTHWESTERN STATE NORMAL SCHOOL.

[J. R. Campbell, president.]

The Southwestern Normal School was opened in September, 1903. The building was not completed, so the sessions were held in old store structures, churches, and the like. Despite this fact there were 356 students enrolled the first year. The number for the second year showed a good increase, and before the close of the year there were enrolled in all departments 458 students. Judging from last year's experience and the present outlook the coming year will find 600 students at the Southwestern Normal. Many inquiries are coming daily from prospective students. Present indications are that by the time the school has fairly launched itself in the fall term it will be filled almost to its utmost capacity.

In 1903 the faculty consisted of 13 members. It has been necessary to increase this number, until at present there are 24 regular instructors and assistants. It is possible that this number must be increased during the coming year in order to care for the increasing number of students.

When the school was first opened in 1903 there were instituted the following departments: Psychology and education; history and civics; mathematics; English language and literature; ancient and modern languages; natural, physical, and biological sciences; drawing and art; elocution and physical training; vocal and instrumental music, and a training school. It has since been found necessary to divide the science department into the departments of physical and biological sciences, respectively. This was caused by the increasing number of classes. It has also been necessary to divide the department of languages into two departments. Thus there are now the departments of ancient and modern languages. This last division is due in great measure to the increasing demand for Spanish. Besides

these several divisions there have been instituted three new departments—a department of agriculture, a department of manual training, and a department of athletics. During the coming year the two last-named departments will be under the direction of one instructor until the work becomes too heavy for him to manage alone.

The section of country from which the great majority of the students come is the great agricultural and grazing districts of western Oklahoma. Therefore it is necessary, in order that a teacher be fitted to teach the children of this section, that he should know the fundamental principles of the science to which the pupils will devote their efforts for the greater part of their lives.

The idea that there must be nothing taught in the schools that is of practical, utilitarian value to the student is fast giving way to the notion that education is an end and not a means. The end of all education is the same, but the means used to accomplish that end must vary with the individual students to be educated. With full knowledge of the force of this fundamental principle of education, the management of the Southwestern Normal have instituted these departments. The course in agriculture will consist of a study of soils, seeds, fruits, domestic animals, etc., such as would be necessary to the intelligent pursuit of agriculture as a vocation. A large laboratory is being fitted up for this department with the most approved apparatus and conveniences. The work will not be subordinate to that of any department, but be an end in and of itself. Much the same might be said of the department of manual training as has been said of that of agriculture. It is a means to an end which is thorough education. It combines the utilitarian or practical with the theoretical in education. At present there has been introduced nothing but manual training proper, such as woodwork, modeling, mechanical drawing, and the like. It is intended at a later date, as demands increase, to introduce a complete course in the domestic sciences and arts. In a word, it is the determination of the institution to adapt its courses, to the fullest possible extent, to the needs of the entire public which it serves. A well-equipped laboratory is being fitted out, and at the opening of school in September there will be facilities for the teaching of manual training in all its forms.

Athletics and physical training have in view the physical development of the students. No student can expect to do the very best work in school unless he had the advantages of systematic physical training. With this idea in view, and indirectly the stimulating of interest in athletic sports, a department of physical training and athletics has been established.

The first class from the regular normal course was graduated in 1905. There were two members of the class, and each came from another school with advanced credits on the course. Both years there has been a considerable class completing the commercial course. In 1905 there was one graduate in instrumental music.

The demands for special training in the music and art departments are far greater than anyone had anticipated. Since the opening of the school these departments have been crowded to overflowing.

All rooms of the building are in constant use. It has been found necessary to move the heating plant from the basement of the main building in order to make use of the basement for class purposes.

The rooms were in great demand and they could not be heated unless a separate building for the heating plant could be provided. It was also found that the building was endangered by having the heating plant in the basement. Now a separate engine house is being constructed, which will alleviate the difficulty and provide rooms for laboratories, a gymnasium, and baths.

The grounds are in excellent condition. The trees which were set out two years ago have grown so as to furnish shade for nearly all parts of the grounds. In the course of only a few years the campus will present one of the finest parks in Oklahoma.

AGRICULTURAL AND MECHANICAL COLLEGE.

[A. C. Scott, president.]

The Oklahoma Agricultural and Mechanical College was established and located at Stillwater by an act of the Territorial legislature, which took effect December 25, 1890, accepting the provisions of various Federal statutes in aid of colleges for the benefit of agriculture and the mechanic arts. The town of Stillwater was required to vote bonds in the sum of $10,000 and to provide not less than 80 acres of land. The bonds were voted and 200 acres of land provided. The institution opened in the fall of 1891.

The past year has been one of great and exceptional prosperity for this institution. Its material resources have been very largely increased. By an act of Congress approved February 9, 1905, a section of school land lying immediately west of the college farm was donated to the college for college farm and experiment station purposes. The lessees of this section have been settled with, in accordance with the provisions of the act, and the title is now in the college. Since the original donation of 200 acres above referred to, the college has purchased 160 acres, so that the land now belonging to the college and station amounts to 1,000 acres, lying in a compact body. This land represents nearly every quality of soil in Oklahoma, from the best bottom to inferior upland.

By act of the legislative assembly of the Territory, approved March 4, 1905, an appropriation of $92,500 was made to provide for the erection and equipment of a building for the departments of agriculture and horticulture, to be known as "Morrill Hall," and a building for additional shop room for the engineering department and a gymnasium. The latter is under construction and will cost about $17,500. The former will cost about $75,000. At this writing, July 15, 1905, an architect has been employed, and plans are under consideration.

From a scholastic point of view the record of the past year has been most satisfactory. Five hundred and fifty-five students were enrolled, a substantial gain over any previous year. Twenty students, 16 young men and 4 young women, received the degree of bachelor of science in June. Of these, 9 graduated in the general science course, 6 in the agricultural course, and 5 in the engineering course. Dr. Harvey W. Wiley, Chief of the Bureau of Chemistry of the Department of Agriculture, delivered the annual commencement address in June.

I am gratified to report continued interest in the short courses in general agriculture and in agriculture and domestic economy. These

courses cover periods in length from one week to two years, and embrace all subjects connected with farming and stock raising. During the past year 265 students took work of this character. These students almost without exception go back to the farm, and these short courses are therefore ministering directly to the interests of agriculture in Oklahoma.

The resources of the college now amount to about $70,000 per year. Of this $37,500 comes from the Government to the college and experiment station (Morrill and Hatch funds, respectively), $17,500 from the Territorial tax-levy fund, about $9,500 from the land-lease fund, $2,500 from the vaccine fund (a Territorial appropriation), and the balance from incidental fees, station sales, etc. Of the Government fund of $37,500 above mentioned, however, $15,000 (the Hatch fund) goes exclusively to the experiment station and is used solely for purposes of experimentation and the publication of results. The equipment for instruction now represents a valuation of $93,000, and the buildings and grounds, $128,500.

Three regular courses, each leading to the degree of bachelor of science, are given—the general science course, the agricultural course (including horticulture and animal husbandry), and the engineering course (including mechanical, electrical, civil, and rural engineering). In the general science course opportunity is given for specialization in chosen sciences. Special courses are given in stenography, typewriting, bookkeeping, and printing. In the general science course all young women are required to take a reasonable amount of work in domestic economy, and they may specialize in this line.

The agricultural experiment station is connected with this institution and a department of it. While its work, as above stated, is devoted solely to experimentation and the publication of results, incidentally it is a valuable source of illustration and affords a stimulus to students in every branch of science. Its bulletins now go to 20,000 farmers of Oklahoma and Indian Territory. One or more representatives of the station, as provided by law, attend each farmers' institute held under the direction of the Territorial board of agriculture.

Tuition is free, except to students outside of Oklahoma and Indian Territory. An incidental fee of $1 per term is charged. Text-books cost from $3 to $4 per term. Board, with room, in private families can be obtained for from $2.50 to $3.50 per week; furnished rooms, from $2.50 to $5 per month. A considerable number of the students board in students' clubs, thus reducing expenses in that line to $1.75 to $2 per week. Very many of the students are practically self-supporting, making their way by work done during the summer vacation and by labor during the academic year in the town, about the college, and in connection with the operations of the college farm.

COLORED AGRICULTURAL AND NORMAL UNIVERSITY.

[Inman Page, president.]

The Colored Agricultural and Normal University was established by an act of the Territorial legislature in 1897, for the purpose of giving the colored people of Oklahoma educational privileges similar to those which are offered to the white people in the normal schools, the Agricultural and Mechanical College, and the University of

Oklahoma. Forty acres of land were donated by the people of Langston and its vicinity. The same legislature which established the school appropriated the sum of $5,000 for its use during the next biennial period, but this amount proved to be inadequate for the erection of a suitable building, the employment of teachers, and the purchase of necessary equipment. Fortunately for the school, at this time the Territorial administration made such a division of the land-lease money among the various educational institutions as to make it possible for the school to continue its work without serious embarrassment until an appropriation could be made for its support by the next legislature. So favorable was the impression made by the university upon the legislature which met in 1899 that it made an appropriation of $10,000 for building purposes, provided a special fund by a tax levy of one-tenth of a mill, set apart one-fifth of the land-lease money, and one-tenth of the amount which is paid to the Territory annually by the Federal Government, in compliance with the Morrill Act, and made an appropriation of $15,000 for the maintenance and equipment of the university from the balance of the fund created by this act, which was then in the hands of the treasurer of the Stillwater College.

As a result of the action of this legislature, two new buildings were erected—a dormitory for young women and a mechanical building—and the number of acres of land was increased from 40 to 160. The appropriation of $15,000 out of the Morrill fund at Stillwater, which was ratified by the next Congress, made it possible for the regents to supply the university with books for the library, apparatus for scientific purposes, stock and farming implements for the agricultural department, and tools and machinery for the mechanical department.

The legislature of 1901 not only made a liberal appropriation for the support of the school during the following biennium, but also for the erection of a boys' dormitory, a residence for the president, and an addition to the main building.

The legislature of 1903 appropriated the usual amount for maintenance and $5,000 for installing a steam heating plant in the main building and in the girls' dormitory.

The last legislature appropriated the sum of $35,000 for maintenance and $5,000 for a waterworks system, $20,000 for the erection of an additional dormitory for girls and for the enlargement of the main building, the boys' dormitory, and the mechanical building.

DEPARTMENTS.

The departments of the university are as follows: Agricultural, mechanical, domestic economy, elementary, normal, college preparatory, collegiate, and musical. All these departments are in actual operation and are under the direction of instructors who were prepared for their work in some of the best institutions in the country.

The agricultural department has for its object the study and application of the scientific principles underlying the rural industries. The work of the course is presented by means of texts, lectures, observations, and analysis. The students are required to do a certain amount of practical work each day under the direction of the head of the department, who has the use of over 100 acres of land and the assistance of a practical farmer.

The mechanical department affords young men an opportunity to acquire a technical education in the various branches of engineering and at the same time to secure instruction and practice in such lines of work as will fit them to engage in practical industries. The usual methods of text-book study, recitation, and lecture are employed, but the student is required to put into practice as far as possible the instruction which he receives.

The department of domestic economy aims to give young women the kind of education which they need to enable them to properly discharge the duties and bear the responsibilities of home life. The work is so conducted as to give them not only the practical knowledge which they will need in presiding over their homes, but also the intellectual and moral benefits which naturally follow manual and industrial training. Inasmuch as many women are obliged to depend entirely upon their own resources, instruction is given in this department with a view to making it possible for them to become independent by earning a livelihood in the trades of their choice.

The elementary department fits students for the normal and preparatory departments, furnishes an elementary education to those who are not provided with suitable school facilities at their homes, and makes it possible for students who are preparing themselves to teach in the public schools of the Territory to have a school of practice where they can use the methods and theories which are taught in the normal department.

The normal department prepares teachers for the public schools of the Territory, and is so conducted that students who take the course are given instruction in both the theory and practice of teaching, and also in the laws governing the educational system of Oklahoma.

The college preparatory department fits students for the collegiate, the agricultural, and the mechanical departments.

The collegiate department gives instruction to the young men and women who enter it similar to that which is given at the University of Oklahoma.

The musical department aims to give the students who attend the university such training in music, both vocal and instrumental, as will create a taste for the highest and the best in the most universal of all the fine arts, and further prepare them to teach in the schools of Oklahoma, in which this study occupies a prominent place.

TEACHERS AND STUDENTS.

When the university closed in May last the number of instructors in actual employment was 13 and the number of students enrolled was 363, which is the largest enrollment in the history of the school.

KINGFISHER COLLEGE.

[J. T. House, president.]

This institution is the pioneer denominational (Congregational) school in Oklahoma, having opened its doors to students in 1895.

Aften ten years the property of the institution is worth about $200,000, $100,000 consisting of productive funds. A generous campus of 160 acres is crowned by three noble buildings.

The college is well located, being in about the center of the Territory. To the north the nearest college is at Wichita, Kans., a distance

of 160 miles; to the south at Fort Worth, Tex., a distance of 250 miles. East and west there are no colleges, excepting normal schools, for many hundreds of miles. From the beginning the college has commanded the generous patronage and earnest confidence of our people. The enrollment runs well up to 200 students.

A faculty of eleven efficient teachers is employed.

A large number of young people of limited means attend the college, and every endeavor is made to furnish them work for a portion of their support while in school.

This year the college had the Rhodes scholar for Oklahoma in the person of Charles D. Mahaffie, who has spent six years in the institution and was graduated this spring.

Doctor Pearsons, the multi-millionaire philanthropist of Chicago, has, for the second time, offered this school the sum of $25,000 as an endowment fund, provided the trustees secure $75,000 to go with it.

MISSION SCHOOLS.

The industrial schools maintained by various religious denominations are mentioned below, together with their location and attendance:

Cache Creek, boarding (Reformed Presbyterian), Anadarko	50
Mary Gregory Memorial (Presbyterian), Anadarko	60
Methvin, boarding (Methodist), Anadarko	80
St. Patrick's, boarding (Catholic), Anadarko	125
St. John's, boarding (Catholic), Pawhuska	150
St. Louis, boarding (Catholic), Pawhuska	125
St. Benedict's Academy (Catholic), Sacred Heart	50
St. Patrick's, boarding (Catholic), Anadarko	125
St. Mary's Academy (Catholic), Sacred Heart	50
Friends' Mission, Tecumseh.	

PUBLIC SCHOOLS.

[L. W. Baxter, superintendent.]

The enumeration of persons between the ages of 6 and 21 in the Territory for the year ended June 30, 1904, was: Whites, 195,665; colored, 9,051; aggregating 204,716.

The enrollment in the public schools for the same period was: Whites, 147,316; colored, 5,570; aggregate, 152,886.

The number of organized school districts was 3,069. The number of schools taught was 3,228, and the total number of days schools were taught was 333,233.

The daily average attendance for males was 47,309; females, 46,-186; aggregating 93,465.

There were 2,905 schoolhouses, valued at $1,052,287.20. Two hundred and sixteen were erected during the year at a cost of $250,766.14.

Teachers' certificates were issued to the number of 3,077.

The total number of teachers employed was 3,761, of whom 1,356 were males and 2,315 females.

The receipts from all sources for school purposes aggregated $1,-696,765.24; and there was expended for all purposes $1,359,623.54.

SCHOOL FUND APPORTIONMENT.

For the fiscal year ending June 30, 1905, there was apportioned among the common schools the sum of $271,436.95. Of this amount $2,649.07 was apportioned among 9 counties, in accordance with an act of the legislature (sec. 1, art. 9, ch. 33, 1905), which was passed because of the omission by the county superintendents of many names of scholars when making the enrollment.

County.	January, 1905.	July, 1905.	Provided by act of legislature.	Total, 1905.
Beaver	$3,421.16	$220.72		$3,641.88
Blaine	6,167.76	397.92		6,565.68
Caddo	9,142.52	589.84	$93.15	9,825.51
Canadian	7,324.68	472.56	79.12	7,876.36
Cleveland	8,656.44	558.48		9,214.92
Comanche	12,892.28	831.76		13,724.04
Custer	7,141.16	460.72	39.10	7,640.98
Day	3,268.64	210.88		3,479.52
Dewey	6,113.20	394.40		6,507.60
Garfield	10,807.84	697.28	70.15	11,575.27
Grant	7,790.92	502.64		8,293.56
Greer	16,044.36	1,035.12		17,079.48
Kay	9,963.40	642.80		10,606.20
Kingfisher	8,066.20	520.64		8,586.84
Kiowa	7,674.36	495.12		8,169.48
Lincoln	14,452.20	932.40		15,384.60
Logan	11,024.84	711.28	21.85	11,757.97
Noble	4,714.48	304.16	113.85	5,132.49
Oklahoma	16,542.84	1,067.28	886.65	18,496.77
Pawnee	7,064.28	455.76	1,245.45	8,765.49
Payne	10,332.92	666.64		10,999.56
Pottawatomie	17,611.72	1,136.24	189.75	18,937.71
Roger Mills	6,941.52	447.84		7,389.36
Washita	9,125.16	588.72		9,713.88
Woods	19,169.16	1,236.72		20,405.88
Woodward	11,043.44	712.48		11,755.92
Total	252,497.43	17,290.40	2,649.07	271,436.95

OKLAHOMA SCHOOL FOR THE DEAF AND DUMB.

[H. C. Beamer, superintendent.]

The school work in general during the year was very satisfactory, the success attained indicating certain, steady progress in all branches. Good discipline was maintained in study hall, class rooms, and elsewhere, the children contributing very largely thereto through their own efforts in self-government.

The course of study is practically the same as that of last year, although a few changes have been made to meet new conditions. The methods used are modern and living ones and those which it is thought will produce the best results under existing conditions. The teachers have been faithful in the discharge of their duties and the pupils studious and always anxious to excel in their work.

The literary and Christian Endeavor societies have been very entertaining and instructive. The physical-culture training given the children in the open air has been of great benefit in strengthening and developing them, and the success attained is very evident in the general appearance of the pupils. The morals of the pupils are good. The general health of the children during the year was excellent, with the exception of the month of January. During that month there were seven cases of la grippe. We employed a trained nurse to care

for them and none of the cases was serious. One death occurred during the year, on May 6. May Gordon, from Caddo County, died of organic heart trouble. Our physician, Dr. J. W. Duke, and nurse gave her every possible attention, but to no avail. Her mother was summoned and was present at the time of her death.

A general repairing and cleaning of the buildings and the placing of electric lights throughout was done before the commencement of the year's work. An addition 20 by 20, two stories high, was added to the south of the main building, thus enlarging the dining room and adding another dormitory for the girls. The grounds have all been inclosed by a 7-foot woven-wire fence, giving ample ground for recreation and exercise in the shade.

The following is a list of the pupils from the several counties enrolled during the year:

Beaver	1	Greer	5	Pottawatomie	8
Blaine	2	Kingfisher	4	Roger Mills	1
Caddo	4	Kiowa	1	Washita	2
Canadian	4	Lincoln	2	Woods	7
Cleveland	2	Logan	7	Woodward	5
Comanche	4	Noble	4		
Day	1	Oklahoma	1	Total	73
Garfield	3	Pawnee	1		
Grant	1	Payne	3		

From information obtained I think the number of mutes in the Territory will reach 100.

At the commencement of the year one change was made in our corps of teachers. Miss Frieda Bauman, teacher of first intermediate work, retired. Miss Edith Brummitt, former teacher of the second intermediate, was placed in charge of first intermediate work, and Miss Getta Baggerman, a graduate of the normal schools of St. Louis, was engaged as second intermediate teacher. Miss Mary Denehan, girls' supervisor, retiring, was succeeded by Miss Della Orr, of Olathe, Kans.

There was paid for the care and education of the deaf and dumb last year the sum of $21,326.16, being at the rate of $275 per annum per pupil.

SEPARATE SCHOOLS.

Probably no other State or Territory has built a stronger barrier against mixed schools. The legislature of 1901 enacted a separate school law, which begins:

> In all counties separate schools for white and colored children are hereby established, and such schools shall be permanently maintained, and the board of county commissioners shall annually levy a tax on all taxable property in their respective counties sufficient to maintain said separate schools.

Not only does this law prohibit the attendance of negro children at white schools, but it is equally mandatory against the attendance of white children at negro schools. No child, whatever its race, can be deprived of school advantages in Oklahoma. If there should be only one negro child in a school district provision must be made for its common school education by the establishment of a school, the employment of a tutor, sending the child at the district's expense to an adjoining district where a negro school is established, or sending

the child to the Territorial school for negroes in Langston. A white child must be cared for in the same manner. Even if white patrons might be willing to permit their children to attend school with negro children, rather than incur the additional expense of providing separate education for the negro child, this course is forbidden by the law of 1904.

The school census showed a total of 204,716 children of school age in the Territory, of which 9,051 were negroes, or 4 per cent.

REFORM SCHOOL.

The legislature of 1905 passed an act authorizing the governor "to enter into a contract with responsible parties within the boundaries of Oklahoma for the safe-keeping, careful rearing, and education of youthful offenders, who may have been found guilty of violation of law, or are found to be incorrigible by some court." There was also appropriated for the carrying into effect of this act the sum of $5,000 per annum.

There being upward of 50 inmates of the penitentiary who properly belong in a reform school, the sum appropriated is wholly inadequate for the purpose intended.

It has been impossible to enter into a contract with any persons for the safe-keeping and education of the youths above named under the existing circumstances and conditions.

The citizens of Anadarko, in Caddo County, have sought to have the institution located adjoining that city on ground occupied by the Indian agency, and if not required for the use of the agency will petition Congress to set apart this land for the purposes of a reformatory.

An institution of this character is very much needed, as by sentencing a mere boy, as often happens, to the penitentiary subjects him to associations that are degrading and morally wrong and totally unfits him for a useful life when he regains his liberty. The demoralizing influences surrounding him and the hardened criminals with whom he is obliged to associate make the worst possible environment in which an erring youth can be placed.

PUBLIC AND PRIVATE CREDIT.

LOANS AND SECURITIES.

Our people are prosperous, and consequently both public and private credit is good. School and municipal bonds always sell at a premium and are much sought after by eastern investors. The safety of farm loans and the promptness in payment both of interest and principal by the farmer, have rendered this class of business particularly desirable to the capitalist and money loaner.

BUILDING AND LOAN ASSOCIATIONS.

The last legislature enacted a law relating to building and loan associations, providing the method by which they may be permitted to transact business in the Territory, and providing for the regulation and inspection thereof.

In regard to foreign building and loan associations, it provides that they shall procure from the bank examiner of the Territory a certifi-

cate of authority to transact business. They shall also deposit with the treasurer of the Territory annually, to be approved by him, a good and sufficient bond in the sum of $10,000, conditioned that it will fulfill all of its contracts and obligations entered into with all residents of the Territory. A copy of the charter, constitution, and by-laws shall be filed with the bank examiner. Semiannually there shall also be filed a sworn statement showing the amount of capital stock, assets and liabilities, and the kind and character of the same. The bank examiner may at any time investigate the condition of any building and loan association doing business in the Territory, and he shall for the purpose of making such examination have all the rights and powers to do and perform all things necessary to make such examinations he is now given in the examination for banks in this Territory. Further provision is made for revoking of charter in case of violation of the act.

Since the enactment of the law some five outside companies have complied with its provisions and are now doing business in the Territory. They are the Midland Savings and Loan Company, of Denver, Colo.; the Farm and Home Company, of Nevada, Mo.; the National Loan and Investment Company, of Detroit, Mich., and the Ætna Building Association, of Las Vegas, N. Mex.

FLOUR MILLS AND GRAIN ELEVATORS.

The large acreage annually devoted to wheat raising necessitates a proportionate number of grain elevators located among the various lines of railway to properly handle the grain during the harvest and store it for the use of the seventy-odd mills.

Considerable grain is shipped to outside markets, but a large amount is ground for home consumption and the export trade; 15,000,000 bushels are required by the mills of the Territory for their own use. The demand for the by-products of the mills as stock feed is greater than the supply. Over $2,500,000 is now invested in the flour milling business in Oklahoma.

PUBLIC BUILDINGS.

The public buildings most needed are an insane asylum, reformatory, penitentiary, and school for deaf and dumb.

Owing to the prohibitory clause annually inserted in the appropriation bill by Congress, Oklahoma is deprived from locating or erecting any public institution. There is annually levied a tax for the Territorial building fund. This fund now amounts to $370,906.69. In addition thereto the sum to the credit of a school for the blind now amounts to $7,216.18.

A Federal building is being constructed at Guthrie. An appropriation has also been made for one at Oklahoma City.

PENITENTIARY.

A new contract has been entered into with the authorities of Kansas for the care and keeping of Oklahoma prisoners in the Lansing penitentiary. The former contract terminated January 27, 1905. Forty cents per day is paid by the Territory for the keeping of Oklahoma prisoners.

Warden E. B. Jewett, of the institution, states as follows:

Employment is given all able-bodied prisoners. Their occupation is changed quite often. While there are a number perhaps that will remain in the coal mine for quite a period of time, they are brought out, many of them, before their sentences expire and placed elsewhere in the institution. The business carried on is manufacturing furniture, mining coal, making binder twine, making brick, and building. A few carpenters are employed in the work of building occasionally. A man not a carpenter when he arrives here learns something of that business while here. The same is true of other trades.

During the past year there have been received:

Males under 18 years of age	9
Males over 18 years of age	184
Females over 18 years of age	2
	195
During the year there have been discharged	122
Showing an increase during the year	73

There are now confined in the institution 437 prisoners from Oklahoma.

INSANE.

Oklahoma's insane are confined and cared for in a private institution known as the Oklahoma Sanitarium, located at Norman. By the terms of the last contract with the sanitarium company the Territory pays $200 per annum for each patient. This contract expired June 15, 1905, and was not renewed, as it was intended, by virtue of the act of the last legislature locating the insane asylum at old Fort Supply, to move the patients to the new institution within the year. Owing to the granting of an injunction by the district court preventing the removal of the patients, the necessary repairs and preparation of the buildings at Fort Supply were stopped and the insane patients still remain at the Norman institution.

OKLAHOMA HOSPITAL FOR THE INSANE.

[D. W. Griffin, M. D., resident physician.]

At the close of the year ending June 30, 1904, there were domiciled in the institution:

Males		271
Females		168
Total		439
Received during the year:		
Males admitted on commitments	149	
Females admitted on commitments	87	
Males returned from parole	7	
Females returned from parole	3	
Total		246
Total treated during the year		685

	Males.	Females.	Total.
Died	34	24	58
Discharged	80	56	136
Out on parole	12	3	15
Escapes	12	2	14
Total decrease	138	85	223
On hand June 30, 1905	289	173	462

Of the 462 patients on hand, the causes assigned are as follows:

Heredity	116	Privation	6	Injury to head	3
Epilepsy	57	Senility	40	Domestic trouble	10
Intemperance	12	Syphilis	9	Acute illness	9
Mental excitement	1	Unknown	23	Chronic illness	31
Mental worry	4	Masturbation	7	Childbirth	8
Narcotism	5	Imbecility	82	Pregnancy	2
Paralysis	7	Idiot	11		
Paresis	8	Overwork	11	Total	462

Ages and number of males admitted:		Ages and number of females admitted:	
Under 16	1	Between 16 and 30	36
Between 16 and 30	52	Between 30 and 40	20
Between 30 and 40	38	Between 40 and 50	18
Between 40 and 50	30	Between 50 and 60	10
Between 50 and 60	12	Between 60 and 70	3
Between 60 and 70	8	Over 70	2
Over 70	5	Age not known	1
Age not known	10	Total	90
Total	156	Grand total	246

The number and causes of deaths during year are as follows:

Consumption	12	Apoplexy	2	Acute insanity	1
Exhaustion	6	Disease of stomach	2	Bright's disease	1
Softening of brain	2	Epilepsy	7	Peritonitis	1
Heart disease	4	Paralysis	8	Paresis	1
Cancer	2	Traumatic insanity	1		
Inflammation of bowels	1	Congestive chill	1	Total	58
Old age	4	Syphilis	2		

The sanitarium is located 1 mile east of Norman, Okla., on main line of Santa Fe Railroad, on 50 acres of land, part of which is used as a garden for the benefit of the inmates, part for a walk, the rest being planted in shade trees, which are several years old and give a complete shade where planted. This grove is partially converted into a park, the parade ground for the benefit of the patients, where they are allowed to go morning and afternoon of every day when the weather is suitable. Benches and walks are provided, and inmates allowed their discretion in enjoying these while in the parade ground.

During the year many improvements have been made. We have constructed a new building, one story, 100 by 33 feet. This building is equipped and accommodates 40 female patients. The sanitarium is supplied with water from two wells 239 feet deep and has the best water anywhere in this part of the Territory—no foreign substance, either alkali or gypsum.

The plastering on all the wards has recently been repaired and thoroughly calcimined. It is the endeavor of the management to keep the institution in the best sanitary condition possible by thorough cleansing and the unlimited use of disinfectant.

FORT SUPPLY MILITARY RESERVATION.

By act of Congress of February 8, 1899, that portion of the Fort Supply Military Reservation remaining under the control of the Federal Government was set apart to be used by the Territory of Oklahoma for the purposes of an insane asylum.

The land (1,760.25 acres) thus set apart included the buildings and waterworks and sewerage systems of said reservation. The seventh legislative assembly of the Territory of Oklahoma, by joint resolution, accepted the reservation from Congress under the conditions of the Congressional act, which provided that the authority to use the buildings and grounds might be revoked at the discretion of the Secretary of the Interior.

After the passage of this act by the seventh legislative assembly the Commissioner of the General Land Office transferred the reservation to the custody of the Territory of Oklahoma. The seventh legislative assembly provided that the asylum should be located at Fort Supply as soon as a railway—steam or electric—should be built to that place.

The eighth legislative assembly passed an act repealing the law passed by the seventh legislative assembly, and provided for the removal of the asylum from Norman, Okla., to Fort Supply as soon as the buildings could be repaired and the proper arrangements made for the transfer.

The eighth legislative assembly made an appropriation of $85,000 for the maintenance of the insane for the year 1905 and $50,000 for maintenance for the year 1906. An appropriation of $25,000 was made by the eighth legislative assembly for repairs on the buildings at Supply.

Under the act passed by the eighth legislative assembly two trustees were appointed, who, with the governor, constitute the board of managers of the insane asylum. An architect was employed to prepare plans and specifications and the board proceeded to advertise for bids.

The members of the Oklahoma Sanitarium Company, who have a contract with the Territory for keeping the insane, commenced an action in the courts to enjoin the Territory from carrying out the provisions of the act passed by the eighth legislative assembly, claiming that it was at variance with an act of Congress which restrains the Territory from making provision for any public building. Later Judge Hainer, sitting as a district judge in Logan County, Okla., issued an order restraining the Territory from proceeding to carry out the act of the eighth legislative assembly and from expending public moneys for repairs or otherwise on the buildings at Fort Supply. The decision of the court was to the effect that the act of the eighth legislative assembly was in violation of a Congressional restriction which prohibited the location of any public buildings in Oklahoma during the years 1905 or 1906. The Territory has appealed from the decision of the district court to the supreme court. The case is now pending in the supreme court.

The eighth legislative assembly greatly handicapped the Territory by making an appropriation which was inadequate for repairing the buildings at Fort Supply and also by making an inadequate appropriation for maintenance for the years 1905 and 1906. Under the present contract the cost of keeping the insane reaches something over $22,000 for each quarter. The $85,000 appropriated will not be sufficient to maintain these unfortunate wards of the Territory under the contract system, and in my judgment it would not be sufficient to maintain them even were the asylum conducted under the direct supervision of the Territory, and it is a foregone conclusion that the $50,000 appropriated for the year 1906 will be wholly inadequate.

The appropriation of $25,000 made by the legislature for repairing the buildings at Fort Supply was wholly inadequate. When the trustees for the asylum advertised for bids, although the bids were never formally passed upon, as an injunction had been granted restraining the trustees from proceeding with the work, yet it was ascertained that the bids would have ranged all the way from $90,000 to $125,000.

Whatever may be the result in the supreme court when a hearing is had on the appeal, it is evident that an increased legislative appropriation will have to be made before the buildings at Supply can be prepared in a proper manner for taking care of the insane. The members of the board of trustees have also decided to submit the matter to Congress and try to have the former Congressional restriction against the Territory erecting a public building removed.

TERRITORIAL ELECTION.

At the general election held on November 8, 1904, there was elected a Delegate to Congress, 13 members of the council, and 26 representatives, as well as the various county and township officers.

The total vote of the Territory for Delegate to Congress in 1904 was 109,145. Of this number, Bird S. Maguire, Republican, received 51,454; Frank Matthews, Democrat, 49,868; A. S. Loudermilk, Socialist, 4,443; H. E. Straughen, Peoples, 1,836, and Charles Brown, Prohibition, 1,544.

REPORTS OF UNITED STATES OFFICERS.

The reports of local land officers concerning the public lands within the Territory will be found in the Annual Report of the Commissioner of the General Land Office.

The reports of Indian agents and superintendents of Indian schools within the Territory will be found in the report of the Commissioner of Indian Affairs.

The report of climate and crop conditions of the Oklahoma section of the Weather Bureau will be found in the Annual Report of the Secretary of Agriculture.

Information in regard to irrigation in the Territory can be obtained from publications of the United States Geological Survey.

PART II.

This section includes annual reports of Territorial officers and various boards and commissions.

Territorial secretary.
Territorial treasurer.
Territorial auditor.
Territorial superintendent of public instruction.
Territorial attorney-general.
Territorial adjutant-general.
Territorial bank commissioner.
Territorial oil inspector.
Territorial grain inspector.
Territorial librarian.
Territorial game warden.
Territorial insurance commissioner.
Board for leasing school lands.
Board of health.
Board of asylum trustees.
Board of agriculture.
Board of pharmacy.
Board of dental examiners.
Board of osteopathic examiners.
Board of railway assessors.
Board of equalization.
Live stock sanitary commission.

TERRITORIAL SECRETARY.

[William Grimes.]

During the past year there have been issued 652 notarial commissions, distributed among the various counties as shown below:

Beaver	23	Grant	22	Payne	20
Blaine	32	Greer	39	Pottawatomie	56
Caddo	19	Kay	23	Roger Mills	21
Canadian	27	Kingfisher	11	Washita	8
Cleveland	17	Kiowa	14	Woods	33
Comanche	19	Lincoln	26	Woodward	29
Custer	16	Logan	26		
Day	8	Noble	13	Total	652
Dewey	7	Oklahoma	67		
Garfield	34	Pawnee	42		

Number of commissioners for Oklahoma in other States and countries	2
Number of notarial commissions issued during the year ending June 30, 1905	652
Number of requisitions granted	52
Number of requisitions honored	28
Number of corporations chartered	845

Amount collected in fees and turned into Territorial treasury.

Received from insurance	$15,269.50
Received from incorporations, notaries, and miscellaneous items	7,896.20
Total	23,165.70

Classified list of corporations chartered.

Churches	63	Mills and elevators	22
Banks	35	Miscellaneous	505
Mining and oil	152		
Railroads	20	Total	845
Telephone	48		

Total capitalization of railroads chartered during year $116,905

TERRITORIAL TREASURY.

[C. W. Rambo, treasurer.]

Below is given a statement showing the amount of taxes collected by counties from July 1, 1904, to June 30, 1905; also a statement showing the receipts from sources other than taxation, together with a list of Territorial depositories and amount of securities furnished by each, the amount of taxes due for the different years, and a statement showing the condition of the following accounts for the year ended June 30, 1905:

General revenue fund:	
Warrants outstanding June 30, 1905	$552,301.57
Cash on hand for redemption of warrants	20,731.22
Net general revenue fund indebtedness	531,570.35
Normal school fund, old levy:	
Cash on hand June 30, 1905	838.95
Warrants outstanding June 30, 1905	18.33
Balance on hand June 30, 1905	820.62

Normal school fund tax, 1903:	
Cash on hand June 30, 1905	$6,978.66
Warrants outstanding June 30, 1905	512.90
Balance on hand June 30, 1905	6,465.76
Normal School fund tax, 1904:	
Warrants outstanding June 30, 1905	10,659.50
Cash on hand June 30, 1905	3,791.75
Balance outstanding June 30, 1905	6,867.75
Normal School lease fund:	
Cash on hand June 30, 1905	2,324.11
Normal School building fund:	
Warrants outstanding June 30, 1905	5,593.02
Cash on hand June 30, 1905	3,303.53
Balance outstanding June 30, 1905	2,289.49
Northwestern Normal School fund:	
Cash on hand June 30, 1905	4,893.35
Warrants outstanding June 30, 1905	5.00
Balance on hand June 30, 1905	4,888.35
Northwestern Normal School fund tax, 1903:	
Cash on hand June 30, 1905	6,796.42
Warrants outstanding June 30, 1905	44.58
Balance on hand June 30, 1905	6,751.84
Northwestern Normal School fund tax, 1904:	
Warrants outstanding June 30, 1905	13,416.36
Cash on hand June 30, 1905	6,683.67
Balance outstanding June 30, 1905	6,732.69
Northwestern Normal School building fund:	
Warrants outstanding June 30, 1905	52,056.86
Cash on hand June 30, 1905	8,268.62
Balance outstanding June 30, 1905	43,788.24
Northwestern Normal School lease fund:	
Cash on hand June 30, 1905	5,120.32
Common school fund:	
Cash on hand June 30, 1905	16,602.52
Common school indemnity fund:	
Cash on hand June 30, 1905	5,865.99
Public building fund:	
Cash on hand June 30, 1905	370,906.69
University, Agricultural and Mechanical College, and Normal School fund:	
Cash on hand June 30, 1905	6,426.74
University fund, old levy:	
Cash on hand June 30, 1905	389.10
Warrants outstanding June 30, 1905	14.02
Balance on hand June 30, 1905	375.08
University fund tax, 1903:	
Cash on hand June 30, 1905	127.10

University fund tax, 1904:	
Warrants outstanding June 30, 1905	$15,032.97
Cash on hand for redemption of warrants	6,366.03
Balance outstanding June 30, 1905	8,666.94
University building fund:	
Cash on hand June 30, 1905	4,390.10
University lease fund:	
Cash on hand June 30, 1905	8,907.00
University equipment fund tax, 1903:	
Cash on hand June 30, 1905	3,502.56
University equipment fund tax, 1904:	
Warrants outstanding June 30, 1905	9,588.07
Cash on hand for redemption of warrants	2,949.77
Balance outstanding June 30, 1905	6,638.30
Agricultural and Mechanical College levy fund:	
Cash on hand June 30, 1905	7.42
Warrants outstanding June 30, 1905	2.05
Balance on hand June 30, 1905	5.37
Agricultural and Mechanical College levy fund tax, 1903:	
Cash on hand June 30, 1905	2,682.87
Agricultural and Mechanical College levy fund tax, 1904:	
Warrants outstanding June 30, 1905	4,195.47
Cash on hand for redemption of warrants	1,481.41
Balance outstanding June 30, 1905	2,714.06
Agricultural and Mechanical College building fund:	
Cash on hand June 30, 1905	489.51
Southwestern Normal School fund tax, 1903:	
Cash on hand June 30, 1905	3,199.79
Warrants outstanding June 30, 1905	8.39
Total	3,191.40
Southwestern Normal School fund tax, 1904:	
Warrants outstanding June 30, 1905	6,408.77
Cash on hand June 30, 1905	3,498.68
Balance outstanding June 30, 1905	2,910.09
Southwestern Normal School building fund:	
Cash on hand June 30, 1905	863.55
Southwestern Normal School lease fund:	
Cash on hand June 30, 1905	36.58
Southwestern Normal School beautifying fund:	
Cash on hand June 30, 1905	1,174.49
University Preparatory School fund:	
Cash on hand June 30, 1905	65.89
University Preparatory School fund tax, 1903:	
Cash on hand June 30, 1905	3,563.75
University Preparatory School fund tax, 1904:	
Warants outstanding June 30, 1905	3,345.13
Cash on hand June 30, 1905	586.73
Balance outstanding June 30, 1905	2,758.40

University Preparatory School lease fund:	
Cash on hand June 30, 1905	$179.43
Colored Agricultural and Normal University fund:	
Cash on hand June 30, 1905	124.48
Warrants outstanding June 30, 1905	20.00
Balance on hand June 30, 1905	104.48
Colored Agricultural and Normal University fund tax, 1903:	
Cash on hand June 30, 1905	2,398.82
Warrants outstanding June 30, 1905	712.13
Balance on hand June 30, 1905	1,686.69
Colored Agricultural and Normal University fund tax, 1904:	
Warrants outstanding June 30, 1905	4,182.90
Cash on hand June 30, 1905	2,302.98
Balance outstanding June 30, 1905	1,879.92
Colored Agricultural and Normal University building fund:	
Cash on hand June 30, 1905	2,616.36
Colored Agricultural and Normal University lease fund:	
Cash on hand June 30, 1905	1,720.77
Deaf and Dumb School fund:	
Cash on hand June 30, 1905	6,983.05
Deaf and Dumb School fund tax, 1903:	
Cash on hand June 30, 1905	5,944.62
Deaf and Dumb School fund tax, 1904:	
Cash on hand June 30, 1905	1,377.86
Warrants outstanding June 30, 1905	458.58
Balance on hand June 30, 1905	919.28
Blind School fund:	
Cash on hand June 30, 1905	7,216.18
Board of Education fund:	
Cash on hand June 30, 1905	736.04
Condemnation school lands fund:	
Cash on hand June 30, 1905	20,373.93
Greer County sections 13 fund:	
Cash on hand June 30, 1905	16,453.39
Greer County sections 33 fund:	
Cash on hand June 30, 1905	15,430.68
Library fund:	
Cash on hand June 30, 1905	1,312.16
Bond interest fund:	
Cash on hand June 30, 1905	7,860.97
Interest land-lease fund:	
Cash on hand June 30, 1905	1,818.53
Statutes and session laws fund:	
Cash on hand June 30, 1905	117.00
Permanent school fund:	
Cash on hand June 30, 1905	100.00
Condemnation sections 13 fund:	
Cash on hand June 30, 1905	1,238.24
Condemnation sections 33 fund:	
Cash on hand June 30, 1905	2,572.57

Statement of taxes due for the different years.

1891–92	$10,386.99	1897	$21,877.52	1902	$31,568.68
1893	13,005.61	1898	19,034.57	1903	25,957.26
1894	17,107.27	1899	12,543.81	1904	208,472.61
1895	48,055.46	1900	18,603.68		
1896	2,710.24	1901	31,057.60	Total	460,381.30

Statement showing the receipts from sources other than taxation, which have been placed to the credit of the different funds to which they belong.

William Grimes, secretary of Oklahoma	$21,465.60
F. A. Ashton, coal-oil inspector	6,215.42
Paul F. Cooper, bank examiner	2,410.00
J. W. Foose, Territorial librarian	972.50
Interest on daily balances	12,809.72
Common school fund (leasing board)	272,481.16
Public building fund (leasing board)	64,950.00
Common school indemnity fund (leasing board)	6,213.46
College fund (leasing board)	68,974.71
Greer County sections 13 fund (leasing board)	4,500.00
Greer County sections 33 fund (leasing board)	4,200.00
Music department, Northwestern Normal School	807.50
Music department, Southwestern Normal School	543.00
Music department, Central Normal School	590.25
Condemnation school lands	499.25
United States, for agricultural and mechanical colleges	25,000.00
Andrew Carnegie, for library at university	5,000.00
Santa Fe Railroad Company, overcharge on freight	2,136.68
Protest fees from O. H. Hayes	.90
Condemnation sections 33 fund	6.00
Sale of seats, Northwestern Normal School	463.50
Sale of stoves, Central Normal School	31.60
Sale of wood, Central Normal School	8.00
Fidelity and Deposit Company of Maryland, returned premium on treasurer's official bond	300.00
Sale of damaged material from ruins of burned science building at university	66.10
Sale of roofing from ruins of burned science building at university	3.84
Otto A. Shuttee, balance of appropriation for World's Fair	748.12
From sale of furniture and premium on warrants, Otto A. Shuttee	1,508.47
Total	502,905.78

The following is an enumeration of Territorial depositaries and also the amount of securities furnished by each:

Guthrie National Bank	$156,671.60
National Bank of Commerce (Guthrie)	100,001.38
Logan County Bank (Guthrie)	25,217.75
Guthrie Savings Bank	27,137.07
State National Bank (Oklahoma City)	12,700.00
Western National Bank (Oklahoma City)	25,001.40
American National Bank (Oklahoma City)	15,100.74
Oklahoma City National Bank	16,222.35
First National Bank (Edmond)	10,401.71
National Bank of Pondcreek	5,138.51
First National Bank (Arapaho)	9,669.07
First National Bank (Elreno)	10,011.10
First National Bank (Kingfisher)	28,700.00
First National Bank (Newkirk)	25,148.70
State National Bank (Shawnee)	21,917.12

Statement showing amount of cash at close of business June 30, 1905, and amount to credit of the several funds named.

General revenue fund	$20,731.22
Common school fund	16,602.52
Common school indemnity fund	5,865.99
Public building	370,906.69
University, Agricultural and Mechanical College, and normal school fund	6,426.74
Northwestern Normal School fund	4,893.35
Northwestern Normal School fund tax, 1903	6,796.42
Northwestern Normal School fund tax, 1904	6,683.67

Northwestern Normal School fund, building	$8,269.62
Northwestern Normal School lease fund	5,120.32
Normal school fund	838.95
Normal school fund tax, 1903	6,978.66
Normal school fund tax, 1904	3,791.75
Normal school lease fund	2,324.11
Normal school building fund	3,303.53
Colored Agricultural and Normal University fund	124.48
Colored Agricultural and Normal University fund, tax 1903	2,398.82
Colored Agricultural and Normal University fund, tax 1904	2,302.98
Colored Agricultural and Normal University building fund	2,616.36
Colored Agricultural and Normal University lease fund	1,720.77
University Preparatory School fund	65.89
University Preparatory School fund tax, 1903	3,563.75
University Preparatory School fund tax, 1904	586.73
University Preparatory School fund lease	179.43
University fund	389.10
University fund tax, 1903	127.10
University fund tax, 1904	6,366.03
University building fund	4,390.10
University lease fund	8,907.00
Agricultural and Mechanical College levy fund	7.42
Agricultural and Mechanical College levy fund tax, 1903	2,682.87
Agricultural and Mechanical College levy fund tax, 1904	1,481.41
Agricultural and Mechanical College building fund	489.51
Southwestern Normal School fund	3,199.79
Southwestern Normal School fund tax, 1904	3,498.68
Southwestern Normal School building fund	863.55
Southwestern Normal School lease fund	36.58
Southwestern Normal School beautifying fund	1,174.49
Deaf and Dumb School fund	6,983.05
Deaf and Dumb School fund tax, 1903	5,944.62
Deaf and Dumb School fund tax, 1904	1,377.86
Blind School fund	7,216.18
Board of education fund	736.04
University equipment fund tax, 1903	3,502.56
University equipment fund tax, 1904	2,949.77
Condemnation school lands fund	20,373.93
Greer County sections 13 fund	16,453.39
Greer County sections 33 fund	15,430.68
Library fund	1,312.16
Bond interest fund	7,860.97
Interest land-lease fund	1,818.53
Statutes and session-laws fund	117.00
Permanent school fund	100.00
Condemnations sections 13 fund	1,238.24
Condemnation sections 33 fund	2,572.57
Total	612,692.93
Balance on hand June 1, 1905	599,781.65
Amount received from all sources from June 1 to June 30	39,401.76
Total	639,183.41
Amount paid out from June 1 to June 30, 1905	26,490.48
Balance on hand at close of business June 30, 1905	612,692.93
Total	639,183.41

The funds are deposited in the following banks:

Capitol National Bank, Guthrie	$158,634.59
Less outstanding checks	6.99
	158,627.60
Guthrie National Bank, Guthrie	141,516.25
National Bank of Commerce, Guthrie	102,664.13
Logan County Bank, Guthrie	19,399.31
Guthrie Savings Bank, Guthrie	23,891.85
State National Bank, Oklahoma City	12,657.97
Western National Bank, Oklahoma City	23,405.47
American National Bank, Oklahoma City	15,162.93
First National Bank, Edmond	10,191.70
National Bank of Pond Creek	5,111.30
First National Bank, Arapaho	8,301.20
First National Bank, Elreno	10,060.10
First National Bank, Kingfisher	25,499.60
Oklahoma City National Bank, Oklahoma City	12,358.34
First National Bank, Newkirk	24,738.83
State National Bank, Shawnee	19,106.35
Total	612,692.93

Statement, by counties, showing the payments of the Territorial tax for the year ending June 30, 1905.

County.	1891–1899.	1900.	1901.	1902.	1903.	1904.	Total.
Beaver	$38.06		$2.20	$53.26	$3,366.39	$5,629.58	$9,089.49
Blaine	8.00	$11.89	20.84	330.13	5,445.72	6,692.26	12,508.84
Caddo				21.22	5,564.28	10,175.34	15,760.84
Canadian	7.94		1.83	16.11	7,942.77	12,488.50	20,457.15
Cleveland		.34		1.40	4,570.03	8,309.30	12,881.07
Comanche				23.89	9,422.48	16,261.89	25,708.26
Custer	.07	80.69	2.47	67.66	7,222.75	6,555.04	13,928.68
Day					1,176.61	1,499.42	2,676.03
Dewey	.22		12.09	13.27	2,166.68	3,833.31	6,025.57
Garfield	11.90	11.34	181.72	152.05	15,341.98	16,208.67	31,907.66
Grant					8,926.63	13,814.38	22,741.01
Greer			75.58	72.53	3,846.69	23,444.27	27,439.07
Kay	17.46	5.54	33.39	140.94	9,322.99	15,554.53	25,074.85
Kingfisher	1.68	1.14	8.87	99.78	7,156.14	11,361.02	18,628.63
Kiowa				36.28	5,880.49	9,836.75	15,753.52
Logan	29.25	8.59	48.50	61.97	12,650.26	15,546.84	28,345.41
Lincoln	20.41	8.03	30.13	172.96	8,019.48	14,067.73	22,318.74
Noble	.93	42.70	58.85	260.42	6,430.61	3,801.09	10,594.60
Oklahoma	1.31	2.41	4.65	150.10	17,395.71	29,145.52	46,699.70
Payne					8,679.36	11,152.19	19,831.55
Pawnee			13.87	95.85	5,830.19	10,332.82	16,272.73
Pottawatomie	75.26	22.78	76.18	299.51	7,002.56	15,334.89	22,811.18
Roger Mills				117.14	3,969.15	6,447.97	10,534.26
Washita	5.90	.74	6.08	22.28	3,932.77	10,111.79	14,079.56
Woods	.05	4.22	29.88	127.45	15,236.15	26,643.49	42,041.24
Woodward	33.29	49.07	69.59	201.45	7,125.17	8,278.58	15,757.15
Total	351.73	249.48	676.72	2,537.65	193,624.04	312,527.17	509,866.79

REPORT OF THE AUDITOR.

[L. W. Baxter, Territorial auditor.]

Warrants issued for the year beginning July 1, 1904, and ending June 30, 1905.

General revenue fund		$291,178.90
Agricultural and Mechanical College:		
Old tax levy	$96.75	
1903 tax levy	1,081.50	
1904 tax levy	12,000.00	
School-land lease	1,521.21	
		23,863.01
Board of education fund		1,191.37
Colored Agricultural and Normal University:		
Old tax levy	1,794.41	
1904 tax levy	9,999.86	
School-land lease	9,978.26	
Building	4,127.31	
		25,899.84
Common school fund		270,077.08
Deaf and dumb fund:		
Old tax levy	5,568.50	
1903 tax levy	9,196.35	
1904 tax levy	5,867.24	
		20,632.09
Library fund		1,264.28
Edmond Normal School:		
Old tax levy	10,073.47	
1903 tax levy	366.01	
1904 tax levy	25,000.00	
School-land lease	12,661.00	
Building	8,803.54	
		56,904.02
Northwestern Normal School:		
Old tax levy	4,409.96	
1904 tax levy	25,000.00	
School-land lease	7,423.49	
		36,833.45
Southwestern Normal School:		
Building	83.05	
Beautifying	891.98	
1903 tax levy	718.89	
1904 tax levy	12,500.00	
School-land lease	10,714.26	
		24,908.18
University:		
Old tax levy	7,967.88	
1903 tax levy	16,550.70	
1904 tax levy	29,994.68	
Building	555.03	
Insurance indemnity	2,687.75	
Library building	10,056.69	
		67,752.17
University equipment:		
1903 tax levy	2,968.75	
1904 tax levy	24,856.09	
		27,824.84
University Preparatory:		
Old tax levy	215.70	
1903 tax levy	1.83	
1904 tax levy	12,000.00	
School-land lease	8,766.59	
		20,984.12
Total		869,313.35

Warrants outstanding on June 30, 1905.

General revenue	$547,616.23
Agricultural and Mechanical College, old tax levy	2.05
Agricultural and Mechanical College, 1904 tax levy	4,195.47
Colored Agricultural and Normal University, old tax levy	8.50
Colored Agricultural and Normal University, 1903 tax levy	704.26
Colored Agricultural and Normal University, 1904 tax levy	4,183.10
Colored Agricultural and Normal University, school-land lease	12.00
Deaf and Dumb School, 1904 tax levy	458.58
Library	91.40
Edmond Normal School, old tax levy	118.08
Edmond Normal School, 1903 tax levy	148.30
Edmond Normal School, 1904 tax levy	10,659.50
Edmond Normal School, building	5,593.02
Northwestern Normal, old tax levy	5.00
Northwestern Normal, 1903 tax levy	44.58
Northwestern Normal, 1904 tax levy	13,416.36
Northwestern Normal, building	52,057.04
Southwestern Normal, building	90.10
Southwestern Normal, 1903 tax levy	44.58
Southwestern Normal, 1904 tax levy	6,408.77
University	12.00
University, 1904 tax levy	15,038.84
University equipment, 1903 tax levy	162.49
University equipment, 1904 tax levy	9,588.07
University Preparatory, 1904 tax levy	3,345.13
Total outstanding warrants	673,804.77

PUBLIC SCHOOLS.

[L. W. Baxter, superintendent public instruction.]

The American system presupposes a well-developed school system. Growing Commonwealths have ever early in their history taken active steps toward the foundation and maintenance of the public common school. Republican government would be impossible without the intelligence of the masses. Oklahoma's cosmopolitan population came to the Territory from every State in the Union and brought with them the high ideals of their respective States. In accordance with these popular ideals the first legislature enacted laws for the immediate establishment of a public school system. Even before this, private subscription schools and church denominational schools had been started and supported in many portions of the Territory. Congress, in the organic act, appropriated $50,000 for the benefit of the common schools. This amount was judiciously expended for teachers' wages in the early day. The school laws provided a system of taxation for the support of the public schools, for a thorough system of matriculation, proper supervision, examination of teachers, and the encouragement of the schools.

The growth of the educational spirit has kept pace with the commercial and material growth of the Territory. The official statistics show an enumeration of children of school age, 6 to 21 years, of 204,630; an enrollment in the public schools of 152,886; an average daily attendance of 93,495; that 3,671 teachers were employed; that the common schools collected and expended $1,459,623.54 for school purposes; that schoolhouses have been built aggregating a valuation of $2,072,274.27; that the Territory has 3,069 school districts; that the average length of term was one hundred days; that during the year

1904, 3,077 teachers' certificates were granted; that the average salary of first-grade teachers was $48 per month. These statistics speak concisely and tersely of educational conditions and progress, but do not fully present the spirit inspiring the work. Enthusiasm, harmony, and good will are characteristic of the educational forces of our great public school system. Each year sees more thorough organization, a richer course of study, a better understanding of the child mind and its development, improved methods of teaching and better management, and a more effective growth.

The present educational system comprehends the rural school, the high school, the preparatory school, the normal school, the agricultural college, and the university.

The nationalized Illinois course of study has been adopted and is being introduced in the country schools. The articulation between the different grades of school is so perfect that a child may start in the most distant rural district and graduate at the university without a break.

The system of supervision is placed in the hands of a Territorial board of education, consisting of the Territorial superintendent, the president of the State university, the president of the Central State Normal School, one city superintendent, and one county superintendent, appointed by the governor and approved by the Territorial council. This Territorial board of education has general charge of the educational system, outlines its policy, examines teachers for Territorial certificates, prescribes the various blanks to be used, and otherwise outlines and encourages the various educational forces of the Territory. The State superintendent is appointed by the governor, by and with the approval of the Territorial senate. This officer is the executive officer of the Territorial board of education and devotes much time to field work, as well as office work. It is made his duty to visit every county in the Territory annually, hold educational meetings, and encourage educational work. Each county has a county superintendent, elected biennially, who has charge of the public school system in the several counties. The county superintendent, together with the county examining board, examines teachers and issues county certificates. The county superintendent holds a normal institute in his county annually. He superintends the work of the county teachers' association, visits the various townships and school districts, and advises the teachers in the most approved methods of management and discipline. The business of each school district is managed by a district school board, consisting of a director, treasurer, and clerk, each officer being elected for a term of three years. The board hires the teacher, looks after the erection of the schoolhouse, and takes care of the same, provides the necessary supplies, and looks after the management of the school.

The State not only provides for the common schools, but has established a State university, three State normal schools, an agricultural and mechanical college, a university preparatory school, and an institution for the higher education of the colored people, known as the Colored Agricultural and Normal University.

The State normal schools are situated at convenient points of access and are well attended by the teachers of the Territory. The other State institutions are doing excellent educational work. An additional summer school for the teachers is held in each county for

a period of four weeks. The teachers of the county are encouraged to attend the normal institute, and much good is thereby accomplished. Teachers are enabled to become acquainted with each other, discuss educational questions, and are inspired to lofty ideals and a greater consecration to the educational work in the Territory.

The various schools are supported by an income from the State, from the county, and from the school district. The State has 1,413,803 acres of school land, the income from which is apportioned semiannually to the various school districts. Some $300,000 are thus apportioned annually. Each county levies a tax, which is apportioned per capita to the various school districts. Besides this, provisions are made whereby each school district may levy a direct tax not to exceed 20 mills on the dollar valuation for the support of the common schools. The income is expended by the school board under the provisions of the law.

For the further education and inspiration of teachers a Territorial teachers' association is held regularly during the Christmas holidays. Each county has a county association, and many counties are divided into districts having district associations. A regular system of reading circle study and examination has been prepared and inculcated with an idea both of cultural and professional development.

The law provides that county superintendents shall divide the various counties into a convenient number of school districts and change the boundaries of the same as the interest of the people may demand. These school districts are usually 3 miles square. For some time there was a tendency to decrease the size of the school district. However, the present tendency is toward the centralization of schools, consolidation of school districts, and transportation of pupils. The last legislature enacted a law permitting the merging of school districts and encouraging the tendency toward consolidation.

Oklahoma has a separate school law, which is working very satisfactory. Equal school facilities are guaranteed to the white and to the colored races. The people of both races are very well pleased with the present system and do all they can to make it successful.

Oklahoma has 2 county high schools, besides some 50 high schools in the various cities. The Logan County High School has been most successful, beyond the expectations of the most sanguine. It has some 400 pupils and is doing a great work in its community. The Woods County High School, at Helena, Okla., will open its doors the coming fall, and its promoters are assured of its success from the start. Both institutions have excellent buildings and promise much for the future.

Among the special laws passed by the legislature is the law providing for the establishment of a kindergarten in connection with the normal schools and in cities of the first class. Some of the cities have taken advantage of this law and prepared for the early education of the youth. The legislature also provided for the moral and humane education of the young people, and active steps will be taken to see that the allotted time is devoted to this subject in every country school throughout the Territory. The legislature also provided that the United States flag shall be displayed on every schoolhouse withing the confines of the Territory. Our schools are rapidly purchasing the flags, and the presentation of the flag is an encouragement for the teaching of patriotism to the young American. The legisla-

ture further enacted a library law. Many of the school districts of the Territory have provided their schools with a public library for the benefit of the students that attend.

The superintendent has just returned from a visit to every county in the Territory, and has visited the normal institute in each county, meeting the teachers personally and discussing at length the educational conditions in these counties. He finds that the character and training of the teachers is increasing every year; that county superintendents are more thoroughly performing their labors; that the schools are indeed in a very healthy condition.

The material growth of the Territory is due in a large measure to the excellent training of the young people. The schools are becoming more practical year after year. As the major portion of our people obtain their livelihood by farming, arrangements are being made for a systematic study of agriculture in every country school in the Territory. This is simply an indication of the practical nature of the schools. The people are proud of the school system, and freely and willingly give large sums for its support. Indeed, the public school system is the pride and the glory as well as the safety of the growing Commonwealth of Oklahoma.

LEGAL DEPARTMENT.

[P. C. Simons, attorney-general.]

The volume of work in the office of the attorney-general during the past year has been very heavy and has required active work to keep the same from accumulating, but I am glad to be able to report that the business of this department is substantially up-to-date.

Under the laws of our Territory the attorney-general is required to appear for the Territory and to prosecute and defend all actions and proceedings, civil or criminal, in the supreme court in which the Territory shall be interested as a party, when requested by the governor or either branch of the legislature; to appear for the Territory and prosecute and defend in any other court or before any officer in any cause or matter, civil or criminal, in which the Territory may be a party or interested, and to attend to all civil cases remanded by the supreme court to any district court in which the Territory is a party or interested. It is also his duty, at the request of the governor, auditor, or treasurer, to prosecute any official bond or any contract in which the Territory is interested, upon a breach thereof, and to prosecute or defend for the Territory all actions, civil or criminal, relating to any matter connected with either of their departments.

He is also required to consult with and advise the county attorneys, when requested by them, in all matters pertaining to the duties of their offices. Also to give his opinion, when requested, in writing, upon all questions of law submitted to him by the legislature, or either branch thereof, or by the governor, auditor, treasurer, or superintendent of public instruction; and whenever requested by the Territorial auditor, treasurer, or superintendent he is to prepare proper drafts for contracts, forms, and other writings which may be wanted for the use of the Territory. In addition to these general duties imposed upon the attorney-general there are many special acts requiring him to look after specific matters.

The volume of criminal business coming on appeal to the supreme court is quite large, as there are 26 well-populated counties in this Territory, each having a district court and probate courts, and the law officers of the Territory, generally speaking, have been vigilant in enforcing the law. Since June 30, 1904, there have been 33 criminal appeals filed in the supreme court of this Territory which have required the attention of this office, and in each case in the supreme court the attorney-general takes entire charge of the case, prepares a printed brief, if deemed necessary, often making oral argument before the supreme court. Many of these cases have been of much importance, requiring careful preparation for submission to the court. I am pleased to be able to state that very few judgments of conviction in the lower court have been reversed by the supreme court.

There has also been considerable civil litigation in which the Territory is interested in the various courts and which has required the services of this office.

During the time indicated three habeas corpus cases have been handled at Leavenworth, Kans., growing out of efforts on the part of Oklahoma convicts to obtain their release from the Kansas penitentiary, where our convicts are being confined under contract with the Kansas authorities, as we have no penitentiary in this Territory. These cases were as follows:

In re Ira N. Terrill, in the district court of Leavenworth County, Kans., and which case was tried before Judge Gilpatrick, of the district court, and the application denied and the prisoner remanded to serve out the balance of his time. I went to Leavenworth and handled this case in person.

The next case was an application of J. J. Maurer, who was convicted in the district court of Garfield County and sentenced to the penitentiary. I also went to Leavenworth in person to attend to this case, and it was tried in the district court, the application denied, and the prisoner remanded to serve out his term.

The next case was an application of Charles and Emma Flohr, who were convicted in the district court of Woods County and sentenced to the penitentiary, and who sued out a writ of habeas corpus for the purpose of determining the legality of their confinement. I also went to Leavenworth in person and tried this case, and the writ was denied as to both prisoners and they were remanded to serve out their terms.

These several habeas corpus cases entailed a large amount of hard work upon me and necessitated a number of trips to Leavenworth, but I am pleased to report that in each case the Territory was successful.

During the year I also made a trip to Pottawatomie County, there to investigate certain charges of lawlessness wherein complaint had been made by citizens of that county claiming that the local officials were dilatory in enforcing the laws. I also sent my assistant to Custer County to investigate certain charges of official corruption in Arapaho Township, at the governor's request.

Pursuant to the governor's request, I am assisting the county attorney of Garfield County in prosecuting certain offenses growing out of the failure of the Citizens' Bank at Enid, Okla. A number of indictments were returned in the district court of Garfield County at Enid, but changes of venue have been taken to Blaine County,

where the cases now stand for trial and will probably be reached some time this fall.

The bribery cases against ex-Mayor Hensley, of Elreno, are still pending in the district court of Canadian County. I made preparations to try one of these cases last December, but the case was continued on account of the sickness of the defendant, and I was engaged at the time in the prosecution of a murder case in Oklahoma County, in which the county attorney was disqualified, so that both these causes combined to continue the case. The next time it was set for trial the judge who had been assigned to try the case was engaged in holding court in another county, making it impossible for him to be there, so that the cases are still pending, untried.

There have been other cases in which I have participated on behalf of the Territory and which it is impracticable to describe in detail in this brief report.

The most important civil case now pending is the one in which the Territory sued the American Bonding Company, of Baltimore, in the district court of Logan County, to recover the amount which the Territory had on deposit in the Capitol National Bank of this city at the time of its failure, the said surety company being on the bond of said bank, it being a Territorial depository. The amount originally claimed in this case was $244,053.21, but the bank has paid dividends amounting to 35 per cent, which materially reduces the claim of the Territory. The case has not yet been reached for trial, and many dilatory tactics have been resorted to by the defendant bonding company to delay the case, but various motions and demurrers have been disposed of and the issues will soon be finally joined, and I confidently expect to be able to try the case at the coming fall term of court and I have no doubt but what the Territory will win the case and recover a judgment against the bonding company for the full amount due to the Territory.

Suit is also pending on behalf of the Territory against the Fidelity and Guaranty Company, which company executed a bond of $25,000 on behalf of the Capitol National Bank as a Territorial depository, and this case will also probably be reached for trial this fall.

Two other cases of much importance to the Territory have been disposed of during the period of time indicated. They were both entitled "Territory of Oklahoma *v.* J. A. Willoughby as Receiver of the Capitol National Bank." Both were equitable actions to declare trust funds. At the time of the failure of the Capitol National Bank the secretary of the Territory had on deposit in said bank money which he had received as Territorial secretary during the preceding quarter, and which he had deposited in this bank for the specific purpose of paying checks issued by him to the treasurer of the Territory for the amount of his quarterly report as secretary of the Territory and ex-officio insurance commissioner. Before the checks given by the Secretary to the treasurer could be presented for payment, and in the interim, the bank failed. Moneys were similarly deposited by the board for leasing school lands and suit was brought to recover both funds. I am pleased to report that in the case of the secretary's fund we recovered a judgment against the receiver declaring the entire amount deposited by the secretary a trust fund, and making it a preferred claim against the assets of the bank in the hands of the receiver. In the case of the school-land fund we obtained a preference

for about half of the amount claimed, the money having been deposited at different times and one deposit had been made a considerable period of time before the bank failed and the court denied us a preference as to that, but allowed a preference to the later deposit, amounting to something over $3,000.

Legal proceedings are also being prosecuted in the courts to exterminate illegal practitioners of medicine in the Territory, and one of these cases, which is a test case, will probably be tried at the fall term of court.

There are 26 counties in this Territory, each having a county attorney authorized to call upon the attorney-general for advice on matters pertaining to the duties of his office, and the majority of these officers have exercised the privilege liberally, and it is needless to say have added not a little to the work entailed upon this office.

During the period of time indicated the Oklahoma legislature was in session, occupying the full sixty days allowed by law for their deliberations. As a result of their labors a volume of session laws aggregating something over 400 pages was produced. Some laws of much import to the Territory were passed and many of minor importance.

One of the most important acts was the one establishing an asylum for the insane at the Fort Supply Military Reservation, in Woodward County. The Territory has had no insane asylum, and the care of the insane has been provided for by contracts made by the governor of the Territory with institutions organized for such purpose, and for many years our insane have been intrusted to the care of the Oklahoma Sanitarium Company, located at Norman, Okla. The legislature of 1903 passed a law locating the asylum for the insane at the Fort Supply Military Reservation, but which law never became effective owing to a provision in said act that no steps should be taken to establish said asylum at Fort Supply until a steam or electric railroad was constructed to within a mile of the old guard house at Fort Supply. As no such line was ever built no steps were taken to locate the asylum there.

The legislature of 1905, however, enacted a new law locating the asylum at Fort Supply and omitting the provision relative to the construction of a railroad. Acting under the authority thereby conferred, the board of trustees for the hospital for the insane appointed under the provisions of said act began active preparations to put the buildings at Fort Supply and the grounds in proper shape for the reception of the insane and use as an asylum. Bids were advertised for the remodeling of the buildings and such improvements as were necessary for this purpose. Plans were prepared and active preparations were being carried on looking to the carrying out of the act when an action of injunction was commenced in the district court of Logan County in the name of the county attorney of Logan County and against the board of trustees of the asylum for the purpose of enjoining them from carrying out the provisions of said act. While this action was brought in the name of the county attorney, it was apparent that the real party in interest was the Oklahoma Sanitarium Company which instigated said proceedings. The theory upon which the case was prosecuted was that the proposed improvements to be erected at Fort Supply and the remodeling of the buildings were so extensive as to constitute a violation of the act of Con-

gress prohibiting the Territorial legislature from locating any public institutions or letting the contract for the erection of any public buildings prior to statehood. Many other questions were also involved in the case, but this was the principal one. The board of trustees contended that the grant by the United States to the Territorial authorities of the right to use the Fort Supply Military Reservation and buildings thereon for the purpose of an insane asylum necessarily carried with it the implied power as an incident thereto to put the buildings and grounds in condition to use them for the purpose authorized. The case was fully presented by both sides, and as a result a temporary order of injunction was granted by Judge Hainer, acting judge of the district court. This stopped all proceedings for the time being, and no further steps have been taken to this date looking to the preparation of the reservation for the purposes of an asylum, and our insane are still being cared for by the Sanitarium Company, at Norman, under their contract. An appeal will be taken from the decision of Judge Hainer to the supreme court of the Territory and will probably be submitted at the January, 1906, session thereof.

A radical change was made in the law regulating the business of surety companies in this Territory, and a new act was passed requiring every company, before transacting business in this Territory, to make a deposit with the treasurer of the Territory of $50,000 in cash or designated securities to protect the business transacted by said surety company with residents of this Territory. As the result of this law the licenses of all surety companies in this Territory were revoked, and only one company has complied with the provisions of the new law, viz, the American Surety Company of New York, and it is at this time the only bonding company authorized to do business in the Territory.

Another important act passed by the legislature was one regulating demurrage and storage charges by the railroads and for the purpose of preventing delays in furnishing cars and in the transportation and delivery by railroad companies of freight, etc.

Liberal appropriations were made by the legislature for the erection of new buildings at several of our Territorial educational institutions and for the maintenance of such institutions in general.

The sum of $92,500 was appropriated for the erection of new buildings and for furniture, machinery, and appliances at the Agricultural and Mechanical College at Stillwater.

The sum of $20,000 was appropriated for the construction of an additional dormitory for girls and the enlargement of other buildings at the Colored Agricultural and Normal University at Langston.

The sum of $50,000 was appropriated for the purpose of building additional buildings for the Northwestern Normal School at Alva.

The sum of $60,000 was appropriated for additional buildings for the University Preparatory School at Tonkawa.

A radical change in the procedure in the probate courts of this Territory in counties having a population of 40,000, or having therein cities of 12,000 population or more, was also made.

A number of acts were passed relating to the various schools of the Territory and the government thereof, and a stringent act was passed to regulate the sale of schoolbooks, school supplies, etc., by any individual, firm, partnership, or corporation engaged in such business,

and prescribing certain conditions compliance with which was made a condition precedent to engaging in such business in the Territory.

As stated, it would be impracticable to attempt to outline any considerable part of the legislation passed by the session of the legislature, as it would carry this report beyond all reasonable length.

During the period of time covered by this report the opinion work of the office has been very heavy, as numerous requests have been made for my opinion upon a wide range of topics, many of which present important and intricate questions for consideration. I have given these matters careful attention, and this work has consumed considerable time. The correspondence of the office has also been heavy, owing to the large amount of business transacted and the many calls for information which have been made as to many of the interests of the Territory concerning which this office was informed.

So far as I am able to observe, the different departments of the Territorial government are being efficiently managed and the business of the Territory is in a very satisfactory condition.

OKLAHOMA NATIONAL GUARD.

[E. P. Burlingame, adjutant-general.]

The summer work consisted of regular drills at the home stations of the several organizations. New articles of uniforms and equipments were issued as required to fit out each company.

ENCAMPMENT.

The annual encampment was held at Oklahoma City, October 5 to 12. The camp site and drill grounds were exceptionally desirable. The military exercises were conducted under the direction of Maj. H. L. Ripley, Eighth U. S. Cavalry. The aggregate attendance of officers and enlisted men was 593. They were given the pay of their grades as established for the Army. The amount thus disbrused, $4,493.97, was charged to the allotment.

BANKING.

[Paul Cooper, bank commissioner.]

Consolidated statement of the condition of all of the Territorial banks of the Territory of Oklahoma, at the close of business June 1, 1905:

RESOURCES.

Loans and discounts	$6,268,087.85
Overdrafts	227,856.56
Bonds and warrants	194,673.45
Banking-house furniture and fixtures	570,156.39
Other real estate	65,581.39
Due from banks	3,460,854.50
Cash	845,515.64
Cash items and exchanges	142,251.52
Other resources	2,232.14
Total	11,777,209.44

LIABILITIES.

Capital stock		$2,491,200.00
Surplus		293,701.85
Undivided profits		494,448.79
Individual deposits	$7,355,299.44	
Certificates of deposit	823,137.50	
Deposits of banks	153,909.05	
Cashiers' checks	60,764.38	
Total deposits		8,393,110.37
Bills payable		60,482.22
Bills rediscounted		44,266.21
Total		11,777,209.44
Total number of banks in the Territory reporting		257
Average reserve held	per cent	52
Legal reserve required	do	25

Number and capital of banks doing business in the Territory of Oklahoma on the 20th day of June, 1905.

Banks.	Capital.	Banks.	Capital.	Banks.	Capital.
94	$5,000	109	$10,000	4	$20,000
1	5,500	1	10,200	11	25,000
3	6,000	1	10,500	1	30,000
1	7,000	2	12,000	2	50,000
2	7,500	2	12,500		
2	8,000	21	15,000		

Average capital employed $9,685

During the year ending June 30, 1905, the bank commissioner examined 225 banks. Of this number 68 banks were examined during the last half of the year 1904, and 157 banks were examined during the first half of the year 1905. The increased activity in examination is due to the fact that the department has at its disposal for the year 1905 a larger fund to defray the expenses of examination than it had during the year 1904.

During the year ending June 30, 1905, the department turned over to the Territorial treasurer the sum of $3,525, being the fees collected from examining banks during that time.

The condition of our banks, generally speaking, is quite satisfactory at this time.

There have not been so many new organizations perfected during the period covered by this report as during the two years prior to June 30, 1904. In a number of instances where there were too many banks in one town there have been some consolidations, which has the effect of increasing the strength of the banks without diminishing the banking power of the community.

The banking field is certainly very well covered in Oklahoma, and there is no demand for more banks at this time.

I believe that our banks are managed with as much ability as will be found in the conduct of the banking business in other jurisdictions. Our banking laws compare favorably with those of other jurisdictions as far as those provisions are concerned which are intended to protect the interests of the public.

NATIONAL BANKS.

There were 95 national banks in operation. The required reserve is 18 per cent. The actual reserve on hand is 44.63 per cent.

OIL INSPECTION.

[F. A. Ashton, inspector.]

A better grade of oil is being sold in the Territory than formerly. The inspections are made very carefully by experienced men, and no serious accidents have occurred in the use of the oil. All oil is tagged by the retailer when sold, and this feature alone has prevented accidents which would otherwise have occurred by mistaking gasoline for kerosene.

All coal oil is tested by the flash test, and must show a flash of at least 120° temperature and must have a specific gravity of from 44° to 48° Baumé, inclusive, to be marked "Good." All oil having a lower or higher specific gravity, or that flashes at less than 120° temperature, shall be marked "Unsafe—rejected."

The flash test shows the safety of the oil, while the gravity shows the quality.

There are 27 deputy inspectors, located at tank stations.

Below is given a statement of the inspections and fees received for the year ending June 30, 1905:

Number barrels oil inspected	48,993
Number barrels gasoline inspected	34,111
Total number of barrels of each inspected	83,104
Oil inspected shipped by Waters-Pierce Oil Company, barrels	44,113
Gasoline inspected shipped by Waters-Pierce Oil Company, do	33,555
Oil inspected shipped by other companies, do	4,880
Gasoline inspected shipped by other companies, do	556
Total fees collected for inspections	$8,602.04
Total fees paid deputies	$2,186.27
Amount turned into Territorial treasury	$6,415.77

GRAIN INSPECTION.

[A. H. Jackman, inspector.]

Number of cars of grain inspected for the year ending June 15, 1905, 1,517; fees received for inspections, $530.95. Four assistant inspectors have been employed during the year.

TERRITORIAL LIBRARY.

[J. W. Foose, librarian.]

The library has now a complete set of the reports of the courts of highest resort in each State and Territory in the Union; also a full line of the latest text-books.

The library is being more generally used by lawyers and judges throughout the Territory every day. The library is insured for $15,000.

Number of books on shelves, 7,413; number of books received in the last year, beginning July 1, 1904, to July 3, 1905, 1,668.

GAME LAWS.

[Eugene Watrous, game and fish warden.]

Since the passage of the game law by the seventh legislature in 1903 and its enforcement by the game warden and his deputies the conditions surrounding the preservation of game have materially improved.

The wanton destruction of quail had been going on for years, and their complete extermination was only a matter of time. Extensive shipments to eastern markets had been frequently made, doubtless resulting in much profit to those interested. While there are occasional violations of the law and some heavy fines imposed at times, the wholesale slaughter of the birds has been effectually stopped.

The indications now are that this season will witness a greater abundance of game birds than has been seen for many years.

INSURANCE COMMISSIONER.

[William Grimes, secretary, ex officio insurance commissioner.]

The business of the several fire, life, and casualty insurance companies transacting business in Oklahoma for the year 1904 is, in the main, very satisfactory, and shows the companies in a prosperous condition. The ratio of loss to premiums collected of the fire insurance companies in this Territory for 1902, 39 per cent; 1903, 52.2 per cent; 1904, 45.6 per cent.

BOARD FOR LEASING SCHOOL LANDS.

[Fred L. Wenner, secretary.]

One of the most important duties of the chief executive of Oklahoma is the oversight of the leasing, care, and protection of the school and other public lands reserved for the future State.

The total acreage of lands reserved by different acts of Congress and turned over to the Territory to become the property of the future State, and the revenue therefrom in the meantime to be received by the Territory, exceeds 2,000,000 acres. The greater portion of this land is in sections 16 and 36, reserved by Congress in every township in the Territory for the benefit of the common school fund, and indemnity lands secured in lieu of such sections lost by allotment or other purposes; but by special acts of Congress in portions of the Territory section 13 was reserved for the benefit of the higher institutions of learning and section 33 for public buildings, while in Greer County these two sections were set aside for such purposes as the legislature of the future State of Oklahoma might decide.

The total area of these reserved lands, divided in their proper classification, is as follows:

	Acres.
Common school lands	1,199,151.72
Common school indemnity lands	214,651.51
College lands	279,092.23
Public building lands	273,446.39
Greer County lands, section 13	42,914.88
Greer County lands, section 33	41,619.21
Total	2,050,875.94

In all other Territories these reserved lands were allowed to lie idle or were used for various purposes without authority of law and without any benefit to the Commonwealth, often to the detriment of the land.

Oklahoma in this, as in many other things, refused to follow old-established customs, but proceeded to set the precedent of a new and better way. Before the Territory was a year old Congress was petitioned by the governor and legislature of the Territory to allow the leasing of the school lands. In response to this petition, in 1891 the governor, by special act of Congress, was granted authority to lease the land reserved for the Territory for school and other purposes, and the net revenue above all the expenses of administration of this department, protection of the lands, securing of indemnity lands, etc., has been over two and one-half million dollars. During the year ending June 30, 1905, the receipts from the rentals of these lands reached the sum of $442,975.41, an average of nearly $1,500 per day. The total gross expenses of the department for the year were $22,-291.99. Deducting from this amount the sum of $3,881, collected for transfer, rental permits, and other special fees, and paid into the fund, leaves a net expense of $18,410.99, or about 4 per cent of the proceeds.

The rentals from the lands reserved for common schools are each year divided among all of the school districts of the Territory per capita of school population. Fifteen per cent of the rentals from indemnity lands are returned directly to the school districts from which they are collected, and the balance is turned into the common school fund to be divided per capita throughout the Territory. The receipts from the college lands are divided equally among the seven higher educational institutions of the Territory. The receipts from public building lands are placed in the Territorial treasury to the credit of the public-building fund (which now aggregates $370,-906.69), and the receipts from sections 13 and 33, in Greer County, are also placed in the treasury subject to disposition by the legislature of the future State of Oklahoma.

The net receipts to each fund for the year ending June 30, 1905, were as follows:

Common school	$235,246.66
Common school indemnity	41,423.06
College	68,595.54
Public building	64,749.70
Greer County:	
Section 13	4,756.34
Section 33	4,425.98
Total	419,197.28

The total net receipts of the different funds from the first leasing up to June 30, 1905, were as follows:

Common school	$1,669,676.10
Common school indemnity	119,052.22
College	371,935.07
Public building	367,028.96
Greer County:	
Section 13	17,013.14
Section 33	15,926.17
Total	2,560,631.66

Under act of Congress of date March 4, 1894, the leasing of the school and other reserved lands is placed in the hands of the board composed of the governor, secretary of the Territory, and Territorial superintendent of public instruction, the governor being designated as ex officio chairman, and upon him falls the greater burden of the administration of this very important department of the Territorial business. Each of these officials having other duties that require the greater portion of their time and attention, the board elects a secretary, upon whom devolves the management of the department. Working under the set of rules prepared by the board in accordance with the act of Congress, the secretary becomes the executive head of this department, with authority to act upon all matters coming within the scope of the rules. Appeal may be taken from any action of his, however, directly to the board by any person interested, and all matters that do not come specifically under the rules also come before the board for action.

Doing business with nearly 8,000 lessees, collecting rentals now averaging over $1,500 a day, looking after the protection of the lands, preventing timber and mineral depredations, settling and adjusting the many difficulties and controversies that come up almost daily, classifying and appraising the lands and issuing new leases on the same every three years, make this one of the largest and most important departments of Territorial business.

The receipts for rentals for the current year will probably pass the half-million mark. In addition to the work of leasing the lands and collecting the rents, the protection of the timber upon the land, the keeping out of intruders who attempt to locate mineral claims, and the settling of disputes between contesting claimants for leases, involves a very large amount of labor. When it is considered that these reserved lands are worth, at a conservative estimate, $25,000,000, it will be readily understood that their care and custody becomes a very important trust. In addition to the value of the lands are the improvements placed thereon by the lessees and recognized as their personal property, but being more or less under the jurisdiction of the department, because of the first lien held upon them for past-due rentals. These improvements, consisting of fences, breaking, fruit trees, houses, barns and other buildings, wells, pumps, and, in fact, everything of any value put on the land at the expense of the lessee, will aggregate a cash value of from three to four million dollars.

There has been less timber depredation upon school lands the past year than in any year previous, several special agents having been employed constantly watching the timber and investigating every case of illegal timber cutting. In several instances, parties have attempted to steal walnut timber from the land, but have each time been apprehended and the timber seized and sold for the benefit of the school fund. There is a large amount of walnut timber upon the school lands which has reached its maturity and is really deteriorating in value. It would be to the best interests of the future State if some means could be found to dispose of this mature timber and put the proceeds into the permanent school fund.

The department has had more or less controversy during the year with parties who persist in attempting to file mineral claims upon school lands contrary to law. A number of such intruders have been ejected and suit is about to be brought against others who have

refused to vacate. The finding of oil and gas in large quantities in the vicinity of some of the school lands has caused a demand for leases for oil or gas purposes upon these lands, but in view of the fact that the title to the land still remains in the United States and the oil or gas as mineral is held to be a part of the permanent title, the board did not have authority to make any such leases.

The demand has grown very imperative, however, in some instances, and on one particular tract of 240 acres, in Pawnee County, a cash bonus of $30,000 and a royalty of one-seventh of the oil has been offered for the lease. As oil wells are being put down on every side of this tract as close to the line as it is possible to get, considerable of the oil is undoubtedly being drained off the school land, and it is a matter of importance to the State that some legislation be enacted by Congress authorizing the leasing of the school and other reserved lands for gas or oil purposes for the benefit of the permanent school fund.

A number of measures affecting the leasing of school lands were introduced at the session of the legislature during the past year, but none of them became laws.

When the school lands of the Territory were first leased the rules limited the amount to be leased to any one person to a quarter section throughout the Territory. Under this rule only the land in the eastern third of the Territory was leased to any large extent, and it was soon found necessary to make a change. The rule was then changed so that west of range 13 as much as one section could be leased by one person. This change resulted in the leasing of quite a little of the land in the western part of the Territory, but the greater portion of it still remained vacant.

In 1895 the Territorial legislature by special act authorized the board to lease the lands west of range 14 in such tracts as they deemed for the best interests of the school fund. Following this enactment the greater portion of the western lands were soon leased in large tracts, and it was but two or three years until practically all of the lands in the Territory were under lease, and this condition has prevailed at all times since.

The first rules for leasing provided that every three years the lands should be put up to bids, the old lessee, if he had complied with the rules, being given the preference to take the land at the highest bid. The uncertainty of this system prevented lessees from putting any valuable improvements on the school land and often caused them to abandon the lands because of the rental having been bid to an excessive figure because of spite work or neighborhood differences. In 1898 the rules were changed so as to give the lessee the preference right for renewal of his lease at the appraised rental fixed by the Territory without any competitive bids. This gave a permanency to the lease and established a feeling of security which at once caused the lessees to begin the making of lasting and permanent improvements, which was a matter of general benefit to the community, all such improvements being taxable. From that time on all quarter-section agricultural leases have had a contract clause printed in them guaranteeing the lessee this preference right of renewal at the appraised rental.

In the case of grazing leases for tracts larger than a quarter section west of range 13, the preference-right contract was not printed in the lease, but the rule has been administered alike throughout the Terri-

tory by the Department, and every lessee has been, in practice, granted the preference right of renewal at the appraised rental. The Department, however, has always reserved the right to require the holders of leases upon large tracts for grazing purposes, to cut down their holdings and relinquish out or transfer their lease rights in small tracts to other persons when it was deemed for the best interests of the school fund and the community to do so. As the leases all had more or less improvements on them and these improvements, together with live stock, were often disposed of with the lease right, and the lease right had come to be considered property of more or less value, the board has never felt justified in cutting up any of the large grazing leases without giving the lessee an opportunity to relinquish his rights to other persons. This preference right, which in the agricultural leases encouraged the lessee to make permanent improvements, was also the means of keeping the grazing lands continually under lease, whereas had the lessee not been accorded such right a large portion of the grazing lands would have been surrendered and left vacant whenever cattle became so low as to make their grazing unprofitable.

The demand for agricultural lands having become so great, and the agricultural district of the Territory having been pushed far to the west, the Department two years ago inaugurated the policy of appraising each quarter section of land for the purpose or use to which it was best adapted, without regard to the kind of lease under which it had been held. Under this system sections of land which had been leased at a comparatively low figure for grazing purposes were classified as agricultural lands and the rentals put accordingly. This caused them to be rapidly divided up into quarter-section tracts and to come into the hands of actual farmers. So rapid has been this division that the number of lessees has increased in the last two years from 7,371 to 8,007, and at the present time in the entire Territory out of this great number of lessees less than 1,200 hold more than one quarter section, and only about 80 persons hold leases for more than one section.

The division of land into smaller tracts is being even more rapidly made at this time than ever before, and there is constant application for the cutting up of grazing tracts into quarter-section agricultural leases even from as far west as Beaver County. In Beaver County lands, however, the board has deemed it best not to allow the leases to be cut into less than section tracts, except where the land has been specifically classified as agricultural land by an appraiser from the Department. This is done for the reason that it is deemed that a large portion of the lands of Beaver County are adapted to grazing purposes only, and the grazing lands rent to better advantage in tracts at least one section in extent. Those lands in Beaver County which are, however, adapted to agriculture will be divided up into quarter-section tracts as fast as they are classified and proper application made for their division.

While these lands are reserved for specific purposes and they or their fair value belong to the future State for that purpose, the lessees have certain rights which should be considered and protected, having gone upon the lands when in their raw state, brought them to a state of productivity, and enhanced their value more or less by this and the placing thereon of their improvements.

The present plan of leasing with an assured preference right for renewal, the careful appraisal of the lands and the right of appeal guaranteed to all lessees, is very satisfactory as a temporary policy during the continuance of territoryhood, but with the coming of statehood there must be some settled and definite policy, either of leasing or sale, established.

In the solution of the question of the disposition of these lands and the investment, care, and protection of the funds, there are great problems to be solved and many dangers to be avoided. In fact, this question will be one of the most important ones to be settled by the people of the coming State.

Following are given tables showing receipts and expenditures of the department the past year; total receipts and expenditures of each fund to date; net receipts for each year from the beginning; apportionment of common school fund, by counties, the past year, and other valuable statistical information relating to the lands and the work of the department:

Receipts and expenditures for the year ending June 30, 1905.

On hand June 30, 1904		$1,481.54
Received from June 30, 1904, to June 30, 1905		441,493.77
Total		442,975.31
Expenses for the year	$22,291.99	
To the Territorial treasurer	419,692.44	
Returned to applicants	4.50	
Balance on hand	986.38	
Total		442,975.31

Receipts and expenditures for each fund for the year ending June 30, 1905.

Common school:		
Cash received		$248,720.32
Expenses	$13,469.16	
Returned to applicants	4.50	
Net receipts	235,246.66	
		248,720.32
College:		
Cash received		71,650.27
Expenses	$3,054.73	
Net receipts	68,595.54	
		71,650.27
Public buildings:		
Cash received		67,788.83
Expenses	$3,039.13	
Net receipts	64,749.70	
		67,788.83
Common school indemnity:		
Cash received		43,718.77
Expenses	$2,295.71	
Net receipts	41,423.06	
		43,718.77
Greer County:		
Section 13—		
Cash received		4,972.97
Expenses	$216.63	
Net receipts	4,756.34	
		4,972.97
Section 33—		
Cash received		4,642.61
Expenses	$216.63	
Net receipts	4,425.98	
		4,642.61

Total receipts and expenditures of each fund to June 30 1905.

Common school:		
Cash received		$1,800,911.50
Expenses	$125,451.34	
Money returned to applicants	5,784.06	
Net receipts	1,669,676.10	
		1,800,911.50
Colleges:		
Cash received		397,933.82
Expenses	$24,251.59	
Money returned to applicants	1,747.16	
Net receipts	371,935.07	
		397,933.82
Public buildings:		
Cash received		392,395.68
Expenses	$24,188.63	
Money returned to applicants	1,178.09	
Net receipts	367,028.96	
		392,395.68
Common school indemnity:		
Cash received		127,507.63
Expenses	$8,452.91	
Money returned to applicants	2.50	
Net receipts	119,052.22	
		127,507.63
Greer County:		
Section 13—		
Cash received		18,499.72
Expenses	$1,470.08	
Money returned to applicants	16.50	
Net receipts	17,013.14	
		18,499.72
Section 33—		
Cash received		17,396.25
Expenses	$1,470.08	
Money returned to applicants		
Net receipts	15,926.17	
		17,396.25
Grand total of all funds:		
Cash received		2,754,644.60
Expenses	$185,284.63	
Money returned to applicants	8,728.31	
Net receipts	2,560,631.66	
		2,754,644.60

Notes on hand.

	Number.	Amount.
Common school fund	9,177	$528,811.21
College	2,681	172,977.62
Public buildings	2,799	171,460.23
Common school indemnity	2,337	103,756.50
Greer County:		
Section 13	216	11,213.35
Section 33	160	8,334.00
Total	17,370	996,552.91

Net proceeds from leasing school lands, years ending June 30, 1891–1905.

1891	$4,536.82	1897	$98,467.81	1903	$322,880.54
1892	21,346.13	1898	173,442.83	1904	335,780.00
1893	19,164.67	1899	133,047.19	1905	419,197.38
1894	45,989.98	1900	177,190.24		
1895	88,627.97	1901	213,303.67	Total	2,560,631.76
1896	71,740.68	1902	435,915 85		

Amount of distribution each year.

Year ending June 30—	Number of children.	Amount per capita.	Total amount.	Year ending June 30—	Number of children.	Amount per capita.	Total amount.
1892	31,920	$0.83	$21,662.60	1899	101,474	$0.97	$98,428.78
1893	43,939	.56	20,416.86	1900	114,737	1.13	129,652.81
1894	74,384	.72	45,858.48	1901	128,797	1.20	150,201.92
1895	77,770	.69	54,665.65	1902	145,131	1.84	266,638.74
1896	88,093	.62	53,591.43	1903	178,964	1.02	181,828.88
1897	88,745	.86	76,853.00	1904	191,459	1.15	220,177.85
1898	90,585	1.34	121,383.90	1905	204,739	1.32	270,177.85

Apportionment of common school fund, 1905.

[$1.32 per capita.]

County.	School population.	Amount apportioned.	County.	School population.	Amount apportioned.
Beaver	2,759	$3,641.88	Kiowa	6,189	$8,169.48
Blaine	4,974	6,565.68	Lincoln	11,655	15,384.60
Cado	7,373	9,732.36	Logan	8,891	11,736.12
Canadian	5,907	7,797.24	Noble	3,802	5,018.64
Cleveland	6,981	9,214.92	Oklahoma	13,341	19,048.52
Comanche	10,397	13,724.04	Pawnee	5,697	7,520.04
Custer	5,759	7,601.88	Payne	8,333	10,999.56
Day	2,636	3,479.52	Pottawatomie	14,203	18,747.96
Dewey	4,930	6,507.60	Roger Mills	5,598	7,389.36
Garfield	8,716	11,505.12	Washita	7,359	9,713.88
Grant	6,283	8,293.56	Woods	15,459	20,405.88
Greer	12,939	17,079.48	Woodward	8,906	11,755.92
Kay	8,035	10,606.20			
Kingfisher	6,508	8,527.32	Total	203,630	270,166.76

Acreage of reserved lands, by counties.

County.	Common school.	Common school indemnity.	College, section 13.	College indemnity in lieu of section 13.	Public building, section 33.	Public building indemnity in lieu of section 33.	Total.
Beaver	207,271.84	15,078.63		2,560.00		1,640.00	226,550.47
Blaine	32,172.42		236.88		1,988.95	640.00	35,038.25
Caddo	45,801.36	5,190.00	16,863.02	8,600.00	17,460.40	4,200.00	98,114.78
Canadian	31,254.55	640.00	640.00		2,187.40		34,721.95
Cleveland	16,752.58						16,752.58
Comanche	62,978.59	18,630.63	25,034.87	12,800.00	27,559.48	15,640.00	162,643.57
Custer	34,560.00	4,480.00	1,920.00			1,440.00	42,400.00
Day	38,069.80	640.00					38,709.80
Dewey	33,639.20	4,720.00					38,359.20
Garfield	38,400.00		19,200.00		17,802.07		75,402.07
Grant	38,400.00		19,200.00		19,215.95		76,815.95
Greer	64,936.41	21,154.67	32,080.46	10,824.42	30,836.21	10,783.00	170,625.17
Kay	24,677.61		11,693.43		14,077.45		50,448.49
Kingfisher	31,632.48						31,632.48
Kiowa	40,120.78	15,077.67	18,824.20	10,080.00	17,280.02	12,320.00	113,702.67
Lincoln	32,515.72	68,160.00					100,675.72
Logan	26,230.00						26,230.00
Noble	15,360.00		7,680.00		7,454.00		30,494.00
Oklahoma	24,587.70	26,399.91					50,987.61
Pawnee	16,747.38		5,511.00		6,133.38		28,391.76
Payne	26,811.76		3,758.38		2,852.37		33,422.51
Pottawatomie	19,529.56	6,880.00					26,409.56
Roger Mills	41,728.27	3,360.00					45,088.27
Washita	36,120.02		2,560.00				38,680.02
Woods	97,693.48		50,490.45		46,092.92		194,276.85
Woodward	121,160.21	24,240.00	61,440.00		57,462.00		264,302.21
Total	1,199,151.72	214,651.51	277,132.69	44,874.42	268,402.60	46,663.00	2,050,875.94

Number of lessees and their holdings, January 1, 1905.

County.	Quarter section.	Half section.	Three-quarter section.	1 section.	2 sections.	3 sections.	Lessees holding 4 sections or more.	Total number lessees.	Total number sections.
Beaver	12	5	4	110	18	8	15 hold 171 sections.	131	346.50
Blaine	225							225	56.25
Caddo	587							587	146.75
Canadian	206							206	51.50
Cleveland	119							119	27.75
Comanche	678	35	5	66	2	1	2 hold 8 sections	784	271.75
Custer	80	16	3	31	1	1		130	66.25
Day	1	8	1	42	4		1 holds 6 sections	52	52.00
Dewey	38	23	7	43				111	69.25
Garfield	472							472	118.00
Grant	479							479	119.75
Greer	155	90	31	154	11	3	6 hold 43 sections	430	262.50
Kay	318							318	79.50
Kingfisher	197							197	49.25
Kiowa	118	20	3	74	14	2	4 hold 16 sections	215	115.75
Lincoln	631							631	157.75
Logan	165							165	41.25
Noble	192							192	48.00
Oklahoma	331							331	82.75
Pawnee	176							176	44.00
Payne	212							212	53.00
Pottawatomie	146							146	36.50
Roger Mills	55	15	1	61	1			132	83.00
Washita	58	14	3	34				109	57.75
Woods	801	25	5	68	3			899	284.50
Woodward	28	40	5	361	5	1	6 hold 65 sections	434	391.75
Total	6,480	291	68	1,044	59	16		7,883	3,113.00

BOARD OF HEALTH.

[Dr. J. W. Baker, secretary-superintendent.]

The condition of the health of the people of Oklahoma is good, and less sickness is reported than at this time last year. There have been no epidemics of any kind in the Territory for the year ending June 30, 1905. In former years there have been, during the months of January, February, and March, quite a number of cases of smallpox in different parts of the Territory, but owing to the rigid quarantine placed on these parts by the county health officers it has been eliminated to a great extent, and consequently a very few cases have been reported this year. There are at present the following diseases reported in the Territory, but not very many are violent in their effects: Whooping cough, mumps, malarial and typhoid fevers, and where there have been cases of typhoid fever reported the health officers have been instructed to look after the source of contagion.

The number of physicians that have registered and been granted license to practice in this Territory since June 30, 1904, to June 30, 1905, is 53. There were 48 applicants who desired to practice medicine and surgery in this Territory during the first six months of the year ending June 30, 1905. Twenty-seven of these applicants were successful in passing the requirements as prescribed by the statutes of Oklahoma and were granted license to practice medicine and surgery in this Territory.

There has been but one applicant for license to practice midwifery, and, as she was not regarded as a competent person, she was refused license.

The Territorial board of health has instructed all county health officers to notify all men who were practicing medicine and surgery in this Territory without a license from the board to appear for

examination at the next regular meeting of the board after their notification, and after two such notices to appear and they failing to appear, for them to take action against them as violators of the law governing the practice of medicine and surgery in this Territory.

In regard to the violators of the law, will say that there is some prosecution being carried on against them at the present time. In Pottawatomie County there are two men under bond to appear for trial as violators of the law. There have been orders issued from this office for the arrest of three men in Day County who are violators of the law, but as yet have not heard from the health officer in that county as to what he has done in regard to it.

There are at present about 800 physicians registered in this Territory, and these men represent almost every school in the Union, but the greatest number appear to be from Kansas City and St. Louis schools.

BOARD OF TRUSTEES OF THE OKLAHOMA HOSPITAL FOR THE INSANE.

[L. W. Baxter, clerk.]

The bill accepting the offer made by Congress to the Territory of Oklahoma and granting to the Territory the Fort Supply Military Reservation and the buildings thereon for the purpose of an insane asylum, and providing for the care of the insane of the Territory of Oklahoma, was approved by the governor on March 1, 1905.

This bill provides that "the control of the hospital, the care and preservation of all property shall be vested in a board of trustees, consisting of the governor, as ex officio chairman, and two suitable persons of different political affiliations appointed by the governor with the approval of the council." The governor duly appointed Hon. Otto A. Shuttee, of Elreno, and Hon. Edgar B. Marchant, of Aline, Okla. This board met regularly in the office of the governor on May 1, 1905, and organized at that time.

The board visited Fort Supply on May 4 and carefully inspected the buildings and premises. The board also elected a superintendent who should take charge the latter part of the month. An architect was employed who visited the premises and prepared plans and specifications for converting Fort Supply Reservation into a hospital for the insane.

Later a steward was elected, advertisements for repairing the buildings published, and a board of examiners appointed and confirmed. At this juncture the Oklahoma Sanitarium Company appealed to the court for an order restraining the board from making any improvements at Fort Supply. The district court granted a temporary injunction. The matter is still pending in the courts.

BOARD OF AGRICULTURE.

[C. A. McNabb, secretary.]

The board of agriculture of the Territory of Oklahoma was created by an act of the legislative assembly which was approved March 8, 1901. The board consists of six members, two of whom are elected each year for a term of three years. The members are elected by delegates selected from the chartered county farmers' institutes of the Territory, which now number 23 out of a possible 26, or one for each county.

The board of agriculture was not organized for almost two years after the passage of the law creating it, due to delay in organizing the requisite number of county farmers' institutes, such organization being effected on December 18, 1902.

J. B. Thoburn was elected secretary on the organization of the board and served with honor and credit until July 5, 1905, when C. A. McNabb, the present incumbent, was elected to succeed him.

The duties of the board largely devolve upon the secretary, and he is charged with the care of records, direction of county farmers' institutes, compiling of statistics, and with the enforcement of several very important laws passed by the last legislative assembly, chief of which are the nursery inspection and insect pest quarantine law.

The board has power to adopt and devise such regulations as may be necessary to secure the efficient administration and proper enforcement of all laws which have for their object the preservation, protection, and encouragement or improvement of any branch of agriculture, except such as have been specifically delegated to the board of regents of the Agricultural and Mechanical College and the live stock sanitary commission. Among other duties the secretary of the board shall co-operate with the faculty of the Agricultural and Mechanical College and the staff of the Agricultural Experiment Station in the preparation of programmes for institute meetings and attend all annual meetings of county farmers' institutes.

There are now 23 chartered county farmers' institutes and 2 organized that are not yet chartered, all in active operation and hold frequent meetings at which methods are freely discussed and active steps taken looking to the betterment of farming conditions and farmers' surroundings. Although in existence but a few years, much good has already been accomplished and great credit is due the faculty of the Agricultural and Mechanical College and the staff of the Experiment Station for their untiring efforts along the line of dissemination of scientific agricultural information.

It has been the privilege of the writer to recently travel over a considerable portion of the Territory, and I could not help but note the improvement in methods employed by farmers over those of a few years ago and the consequent advantages attendant upon such methods. One no longer sees the prevailing one crop practice so noticeable a few years ago, but instead a complete crop rotation and diversification has taken a firm hold upon all communities where the active institute exists. These improved conditions are plainly apparent to all, and little or no difficulty will be experienced in procuring the necessary aid from future legislatures to continue the good work now so well in hand.

While the accomplishments have been somewhat phenomenal up to the present time, due largely to the fact that the board is composed of highly intellectual, progressive, and successful business farmers, who have devoted untiring energies to the work with small compensation, the work of the future is certain to show greater accomplishments and relatively increased strides than has heretofore been attained.

BOARD OF PHARMACY.

[F. B. Lillie, secretary.]

During the past year the board of pharmacy have held four regular and three special meetings, and the different members of the board have visited practically every section of the Territory in looking after the enforcement of the law.

At the present time there are 101 drug stores in small country towns conducted under permits in most instances by physicians, otherwise by men who have some knowledge of pharmacy and are preparing to become registered at some future date.

There are 113 merchants selling patent medicines and ordinary household drugs under merchants' permits at country stores and in small towns where there is no registered pharmacist.

There have been during the year 43 candidates registered, and 36 candidates have failed to pass the examinations. Thirty-six applicants have been registered on diplomas from reputable colleges of pharmacy, making a total of 79 registered during the year ending June 30, 1905.

There are now 526 registered pharmacists in good standing on the registration book, and of these 86 are living in other States, leaving 440 in Oklahoma.

The secretary's office is an employment bureau for the druggists of the Territory, with no fees for this service, and at the present time there are no unemployed among the registered pharmacists of the Territory who desire to work.

The efficiency of the registered men of the Territory may be, to some extent, judged from the fact that not a single instance of error in compounding or dispensing by a registered pharmacist has been brought to the attention of the secretary's office during the past year. There has been, however, some complaint of errors committed by unregistered men employed by druggists in different sections of the Territory, and the board is making every effort possible to compel all employees who have had the required term of experience to qualify by taking the board examination. The names of these employees are being secured, and they will be required to take the examination at the earliest possible opportunity.

In the larger towns and cities of the Territory the drug stores already established are fully up to and in some instances in excess of the needs of the public demands, but in the new towns being developed by the building of new lines of railroad, a large number of former clerks in the Territory have started in business for themselves in a small way and are now proprietors.

There being no regulation for the registration of drug stores by proprietors, it is impossible to give the exact number of stores in the Territory, but approximately there are 294 drug stores conducted by registered pharmacists and 100 small stores under Class A permits by physicians, principally in towns of 3,000 population or less.

The following is a financial report for the year ending June 30, 1905:

RECEIPTS.

Renewals, licenses, and permits	$3,481.50
Examinations and registration fees	465.00
Balance on hand June 30, 1904	289.04
Total	4,235.54

DISBURSEMENTS.

Postage	$102.43	
Rent, light, and fuel	180.00	
Stenographer	480.00	
Expense of meetings	25.35	
Stationery, printing, and supplies	158.00	
Secretary's salary	500.00	
A. B. Clark, per diem and expenses	840.50	
E. E. Howendobler, per diem and expenses	840.50	
F. B. Lillie	827.50	
National Board of Pharmacy	38.50	
		3,992.78
Balance on hand June 30, 1905		248.76

The requirements by the board that all candidates for examination shall have a good common school education and shall have had at least four years of practical experience has resulted in furnishing us good material from which to select those who are to care for the interest of the people as the pharmacists of our future great State, and while the supply of qualified registered pharmacists has not been equal to the demand, the board has felt that it would be incomparably better to have fewer well-qualified men than to have a greater number by permitting them to register when not properly fitted.

Many of the candidates have attended three or four meetings of the board before passing the examinations, and during the time have taken correspondence courses in pharmacy to prepare themselves for the examinations.

It is a matter of great importance to the general public that the man who dispenses the medicines for the sick should be fully qualified, and in this respect we may well feel proud of the proficiency of the Oklahoma druggists.

In no other State or section of the country can be found more up-to-date or better-fitted drug stores than can be found in Oklahoma.

Every candidate for registration is required to make an affidavit that he is not addicted to the habit of drinking intoxicants or taking opiates, and the recommendation of two responsible parties is required to show his character and ability.

Annually the druggists of the Territory meet in convention, and prominent men in the profession are secured to deliver lectures. Subjects of interest are discussed, and a general exchange of ideas aids in keeping those who attend fully up to the times in the profession. To keep those interested and benefited who can not attend the meetings, the complete proceedings of the association are published, and every registered pharmacist is supplied with a copy without expense.

BOARD OF DENTAL EXAMINERS.

[A. C. Hixon, secretary.]

The legislature of 1905 passed an act regulatng the practice of dentistry, which was approved by the governor and went into effect June 1.

The law provides for the appointment by the governor of five legal practitioners of dentistry who have resided in Oklahoma for a period of at least two years. Quarterly meetings are held for the examination of candidates. The law was most carefully drawn and provides for the registration of all licensed dentists in their respective counties by the county clerks. The board is given power to prosecute all parties who practice or attempt to practice dentistry without having complied with the provisions of the law.

Out of the funds coming into the possession of the board each member of the board shall receive as compensation the sum of $5 per day for each day actually engaged in conducting examinations, and in addition shall be entitled to mileage at the rate of 3 cents per mile for all distances necessarily traveled in going to and coming from meetings of the board, and shall be entitled as well to the legitimate expenses incurred by him while going to and from and attending meetings of the board. No part of said compensation, mileage, or expenses shall be paid out of the Territorial treasury.

There were 292 licensed dentists in Oklahoma June 30, 1905.

Amount of fees collected during the year	$520.00
Expenses of board for year	346.77
Leaving a balance on hand June 30, 1905	173.23

The board has held one called and one regular meeting during the year. The new law that has recently gone into effect has not been enforced to any extent up to the present time, but preparations are being made to do so as soon as conditions will allow. The secretary of the board has a carefully compiled list of names of illegal practitioners of dentistry that will be placed in the hands of the board, as well as sufficient funds accruing under the annual-license feature of the new law, that will make it possible to begin active operations against the said charlatans at once.

There were three prosecutions brought under the old law during the past year, one of which was successful, while the other two persons under indictment left the Territory before trial could be had. The proportion of graduate dentists to those not having diplomas is about 92 per cent graduates to about 8 per cent non-graduates.

The moral and intellectual standing of the profession in Oklahoma is most excellent and will compare favorably with that of any other State or Territory, one remarkable feature being the comparative youthfulness of the profession in the Territory as compared with other States. The records show less than 10 per cent of the dentists to be over 40 years of age. This condition naturally results in our having a bright, wide awake, and energetic dental profession that is second to none anywhere, this being fully exemplified in our annual session meeting.

OSTEOPATHIC EXAMINING BOARD.

[J. A. Price, secretary.]

The board has held two regular and one called meeting during the year.

Eighteen candidates have passed the required examination and have been granted certificates during the year. Total number in the Territory at present holding certificates from the board is 55. Each candidate is required to pass a thorough examination.

One hundred and eighty dollars have been turned into the treasury from fees of applicants during the year.

Each member of the board is allowed a fee of $10 and necessary expenses per day for each day actually spent in official duty.

The secretary of the board receives a fee of $25 per annum for his services.

The board is pleased with the quality and standing, professionally, of those coming to the Territory during the past year, and feels that they will add much to the efforts the board has been putting forth to get osteopathy in its purity before the people. In the past the Territory has been infested with fakes, but we have succeeded in driving them from the Territory, with two or three exceptions, and shall not slacken our efforts till none but the best and legally qualified are left.

So far we have endeavored to enforce the law without proceeding to prosecution, and in the main we have succeeded, in fact, beyond our expectations. The country is so new and so rapidly developing that it necessarily requires great diligence and effort to keep any line of progress perfectly straight.. The past year osteopathy has made a most splendid growth and has won the loyal support of many of the most intelligent thinking people in every community.

Three years ago the osteopaths organized a Territorial association for mutual help and benefit, which is largely attended and in which most of the osteopaths in the Territory hold membership.

The board has endeavored to sound thoroughly the moral, as well as the professional standing, of all who ask permission to practice, believing that a high moral tone is indispensable for a proper qualification to bear the title, " Doctor of Osteopathy."

BOARD OF RAILWAY ASSESSORS.

At the annual meeting of the board of railway assessors, which is composed of the governor, secretary, and auditor of the Territory, the various railway, telegraph, and telephone companies were assessed as follows:

Atchison, Topeka and Santa Fe:	
Main line	$5,600
Kiowa division	3,700
Hutchinson and Southern	3,000
Tonkawa division	3,000
Eastern Oklahoma—	
Newkirk-Shawnee branch	3,100
Guthrie branch	3,000
Cushing branch	2,700
Seward branch	3,000

St. Louis and San Francisco:	
Texas and Oklahoma main line	$5,000
Oklahoma City and Western—	
Oklahoma City to Lawton	3,000
Lawton to Texas line	2,600
Blackwell branch	3,000
Blackwell, Enid and Southwestern—	
Choctaw Northern Crossing	3,000
From Crossing to Texas	2,700
Arkansas Valley and Western	2,700
Choctaw, Oklahoma and Western	2,500
Grade	400
Chicago, Rock Island and Pacific:	
Main line	5,400
Enid and Anadarko	3,500
Billings branch	3,400
Guthrie branch	3,000
Mangum line	3,800
Faxon line	2,500
El Paso line	3,000
Choctaw, Oklahoma and Gulf:	
Main line to Geary	5,200
From Geary to Texas line	3,500
Tecumseh branch	3,000
Choctaw Northern	3,700
Kansas City, Mexico and Orient:	
Completed	3,000
Grade	400
Ungraded right of way	100
Missouri, Kansas and Oklahoma:	
Main line	3,000
Wybark branch	2,700
Guthrie branch	2,800
Texas branch	2,800
Fort Smith and Western	2,900
St Louis, El Reno and Southwestern	2,600
Denver, Enid and Gulf	2,800
Side tracks on all roads (per mile)	2,000

On motion, the rolling stock of the Atchison, Topeka and Sante Fe; the Chicago, Rock Island and Pacific; the Choctaw, Oklahoma and Gulf, and the St. Louis and San Francisco railroad companies was assessed as follows:

Locomotives	$3,000
Passenger cars	2,000
Tourist and emigrant cars	2,000
Mail, baggage, and express cars	1,500
Refrigerator and fruit cars	210
Steam shovel cars and steam derrick cars	2,000
House cars	175
Pile-driving cars	1,500
Cattle cars	175
Platform cars	130
Cabooses	300
Hand cars	12
Push cars	10
Standard Pullman cars	6,000
Coal cars	150

On motion, the rolling stock of the Denver, Enid and Gulf; the Fort Smith and Western; the Missouri, Kansas and Oklahoma; the Kansas City, Mexico and Orient, and the St. Louis, El Reno and Southwestern was assessed as follows:

Locomotives	$1,800
Passenger cars	1,200
Tourist and emigrant cars	2,000
Mail, baggage, and express cars	900
Refrigerator and fruit cars	210
Steam shovel cars and steam derrick cars	2,000
House cars	175
Pile-driving cars	1,500
Cattle cars	175
Platform cars	130
Cabooses	200
Hand cars	12
Push cars	10
Standard Pullman palace cars	6,000
Coal cars	150

Tools, materials, and other personal property were assessed as returned by the company. All section houses and stock yards were assessed as returned. All railroad telegraph wires were assessed at $52 per mile for the poles and first wire and $12 for each additional wire. All railroad office furniture, switchboards, instruments, supplies, batteries, buildings, etc., were assessed as returned.

On motion, the property of the Western Union Telegraph Company, Postal Telegraph Company, and the American District Telegraph Company was assessed as follows: Fifty-two dollars per mile for the poles and first wire and $12 per mile for each additional wire. All office furniture, switchboards, instruments, tools, batteries, buildings, etc., were assessed as returned.

On motion, the Missouri and Kansas Telephone Company was assessed at $30 per mile for the poles and first wire and $5 for each additional wire.

The Central Oklahoma Telephone Company, the Home Enterprise Telephone Company, the Kingfisher, the Mangum, the Norman, the Oklahoma and Kansas, the Perkins, the Pioneer, the Topeka and El Reno, the Cordell Exchange, the Rural, Stroud Exchange, W. W. Oder & Co., and the Cleveland Telephone companies were assessed at $25 per mile for the poles and first wire and $5 for each additional wire.

The Billings and Red Rock, C. B. Wilson, Delphi-Erick Mutual, Dryden, Elk City Northern, Enid Rural, Farmers' Mutual of Kay County, Francis Western, Geary, Leger and Chickasha, McLoud, Mutual of Braman, Petit, Purcell and Lexington, Southwestern, Texas, Marshall, Union, Union City, Washita Valley, Watonga, Westtern Oklahoma, and the Reservation telephone companies were assessed at $20 per mile for the poles and first wire and $5 for each additional wire.

On motion, the Antelope Flat, Antelope Valley, A. Mathis, B. M. & R., Cement, Center Township Rural, Farmers' Mutual of Lincoln County, Fort Supply, Garland Mutual, Gotebo, Jefferson Rural, Long Distance, Oklahoma Rural, Perryman, Quapaw Valley, Skeleton Rural, S. S. S., Star, Thomas, Blaine County, Custer City, Temple, D. C. M., and Grand telephone companies were assessed at $15 per mile for the poles and first wire and $5 for each additional wire.

Office furniture, switchboards, instruments, batteries, and buildings were assessed as returned.

BOARD OF EQUALIZATION.

[L. W. Baxter, secretary.]

The Territorial board of equalization met in the office of the auditor at 1 o'clock p. m. July 15, 1905.

Present: Gov. T. B. Ferguson, president of the board; Secretary of the Territory William Grimes, and Auditor L. W. Baxter, secretary of the board.

The secretary of the board presented the various exhibits, with equalizations. After examination and discussion these exhibits were adopted by the board.

On motion, the following changes in values, with the exception of moneys and credits, were ordered made:

County.	Increase.	Decrease.	County.	Increase.	Decrease.
	Per cent.	*Per cent.*		*Per cent.*	*Per cent.*
Canadian	7		Logan		6
Cleveland	8		Pawnee		10
Day		10	Payne		6
Dewey	7		Pottawatomie	5	
Grant	22		Roger Mills		5
Greer		10	Washita		7
Kingfisher	10		Woodward	9	
Lincoln	6				

On motion, levies for the year 1905 were made, as shown in the apportionment of taxes, for the various funds.

The auditor was ordered to forward the foregoing equalizations, with the various levies, to the county clerks.

On motion, the secretary was ordered to report the tax levy, with the amount of taxes due from each county, to the Territorial treasurer.

On motion, the board adjourned.

OKLAHOMA LIVE-STOCK SANITARY COMMISSION.

[Thomas Morris, secretary.]

The commission consists of three members, the secretary being the executive officer of the board.

It is the duty of this commission to protect the live stock of the Territory against infectious and contagious diseases, and ample laws have been enacted by the legislative assembly to enable us to carry on this work.

Cattle raising is by far the largest live-stock industry in the Territory, and our close proximity to the South makes tick fever the most formidable disease with which we have to contend. For the purpose of controlling this disease, quarantine lines have been established and strict rules adopted governing the movement of cattle into the Territory from points south of these lines.

For the enforcement of these rules we have a force of 7 inspectors, whose duty it is to see that no infected cattle are brought into the Territory and to stamp out any infection which already exists. In this latter work all infected pastures are placed in strict quarantine, and are disinfected and held until no further infection exists.

The law is ample for the punishment of any violations of the regulations and rules of the commission, and our success in securing conviction of offenders has a tendency to discourage violations of the law.

During the past year 22 arrests were made for violating the quarantine law. In 13 of these cases defendants paid fines and costs amounting to $2,000; 2 were released by jury; judge refused to hear 1 case; county attorney refused to prosecute 1, and 5 are yet to come to trial.

Our work during the past year has resulted in ridding a large area of infection and placing it in the safe territory above the Federal quarantine line, and the result of investigations being made at this time leads us to believe that the Federal line will be moved still farther south another year.

We have had no complaint of tuberculosis, and do not believe the disease exists in the Territory at this time. There is some itch or mange among cattle in Beaver and Woodward counties, but we believe we have the disease under control in Woodward County, and the stockmen in Beaver County are dipping their cattle with the view of getting rid of the disease.

The diseases of horses are looked after with the same care as are those of cattle, glanders being the chief disease with which we have to contend. During the past year our veterinarian has condemned and destroyed 85 horses and mules on account of this disease, and as fewer cases are being reported we believe we have the disease in a measure under control.

No hog cholera or swine plague has been reported during the past year.

The law requiring the inspection of all animals the flesh of which is to be sold for food, is growing more popular every year. All animals must be inspected and pronounced healthy before slaughter, and diseased animals are condemned. This work is done by local inspectors, who collect a small fee for each animal inspected. We now have 298 such inspectors. During the year ending June 30, 1905, 39,600 cattle, 40,662 hogs, and 571 sheep and goats were inspected and slaughtered; 38 head of cattle and 49 hogs were condemned as being unfit for food.

The following are the expenditures of the board during the past year:

Per diem and mileage of members of the board	$852.91
Secretary's salary	1,200.00
Contingent (office expenses)	333.96
Inspectors' salaries and expenses	5,641.52
Live stock killed (indemnity)	504.00

Very respectfully,

T. B. Ferguson, *Governor.*

Hon. E. A. Hitchcock,
Secretary of the Interior, Washington, D. C.

MAP
OF
OKLAHOMA TERRITORY.

Compiled from the Official Records of the General Land Office and
from data on file in the Executive Office of the Territory,
to accompany the Annual Report of the

GOVERNOR OF THE TERRITORY,
1905

Compiled from the official Records of the General Land Office and other sources
under the direction of
FRANK BOND,
Chief of Drafting Division G.L.O.

Scale: 1 Inch = 12 Miles.

LEGEND.

- U.S. Land Offices
- Rail Roads constructed
- do. proposed
- Roads and Trails

COLORADO
KANSAS
NEW MEXICO
INDIAN TERRITORY

103° 102° 101° 100° 99° Longitude West from Greenwich 98° 97° 96°
37° 36° 35° 34°
26° 25° 24° 23° 22° Longitude West from Washington 21° 20° 19°

THE HOMMIS PETERS CO. PHOTO-LITHO., WASHINGTON, D. C.

REPORT OF THE GOVERNOR OF NEW MEXICO.

REPORT OF THE GOVERNOR OF NEW MEXICO.

LETTER OF TRANSMITTAL.

EXECUTIVE OFFICE,
Santa Fe, N. Mex., September 15, 1905.

SIR: In compliance with your request of recent date, I herewith transmit my ninth annual report upon the progress and development of the Territory of New Mexico and the work of its officials during the past fiscal year:

PART I.—REVIEW OF THE PAST FISCAL YEAR.

Despite temporary setbacks brought by floods and drought and by a cessation in railroad construction, New Mexico during the past fiscal year has continued to advance and to grow at a greater ratio than this nation, taken as a whole. Just as the census of 1890 and 1900 showed that the population of the Territory was increasing at a higher ratio than that of the entire country, so the reports received from every county indicate that this growth is not only being maintained, but has been exceeded, especially during the past year.

A session of the legislative assembly was held during the first three months of the year and measures of considerable moment became law, subject to the approval of Congress. Among the more important new legislation was included a marriage-license law; a new jury law, providing for the selection of jurors with the aid of the wheel; a law creating the department of insurance; a law for the building of a public road from the northern boundary of the Territory to the southern, to be known as "El Camino Real;" a law creating a force of mounted Territorial police; a new and liberal incorporation act; an act to prevent the waste of artesian water; an act for the inspection of coal oil; a compulsory flag law; an act for the better protection of game; an act to aid in the building of the reservoir at the Elephant Buttes by the Federal reclamation service; an act for the administration of Territorial lands, and many minor measures, 134 in all. It is too early to estimate the effect of all of this new legislation, but some of it is already proving of great benefit.

As is indicated by the reports herewith attached, the Territorial finances have never before been in better condition, although the annual improvement during the past eight years has been constant and very gratifying. Improvement in assessment methods, a closer collection of taxes, and an increase in the sources of revenue are very notable. The Territorial institutions are prosperous, and are extending the influence of their work and activity in every direction.

New Mexico has just reason to be proud of them. The public school system is well organized, and despite the disadvantages of a sparse population and low taxation values in the more remote country districts there is a distinct advance in the methods of teaching, the character of instructors, and the length of the school term.

The Territory has made considerable material progress, despite the fact that the drought of last year, noticed in my previous report, was followed by disastrous floods that caused damage to the extent of over a million dollars and plunged quite a number of settlers along the river valleys into poverty. Fortunately, there was no direct loss of life, and the abundant water for irrigation purposes this spring and summer and consequent fine crops have more than made up the losses caused by the floods. The wool crop as well as the increase in sheep herds was phenomenal, and taken together with the high price for raw wool that prevailed, has helped to augment considerably the prevailing prosperity. Cattlemen have not been quite as fortunate, but losses they experienced on the range are being compensated for by the good range of the spring and summer. Cattle are sleek and fat, and while the increase this year has been low, yet the promise for a big increase next year is very gratifying.

The fact that the Federal irrigation project on the Rio Hondo is nearing completion and that the reclamation service, as well as the settlers of the Mesilla Valley, have taken hold of the preliminary work for the building of a reservoir at the Elephant Buttes is of much promise for the future of the Territory.

There was but little railroad construction within the Territory during the past fiscal year, but at the present writing work is being prosecuted upon five large projects and a number of lesser ones, which, when completed, will add over 500 miles to the railroad mileage.

Some progress has been made in the establishment of new manufacturing industries or the expansion of those which have been established. Especially has this been the case in the manufacture of cement, of lumber, and of the treatment of ores.

The lull in the mining activity of the Territory during the past few years is on the point of being succeeded by great activity; the production of minerals by the Territory during the past fiscal year exceeded in value that of any of the eight preceding years. However, the record for the past ten years has not been a discouraging one. Statistics are at hand to show that in the past decade New Mexico mines produced $4,750,000 worth of gold, $5,350,000 of silver, 55,000,000 pounds of copper, 61,000,000 pounds of lead, and 12,000,000 tons of coal, not to speak of the production of zinc, which has come to the front of late; the production of iron, of which the Colorado Fuel and Iron Company annually takes 125,000 tons out of the Territory; the production of turquois, cement, clay, lime, gypsum, lithographing stone, onyx, marble, building stone, precious stones, and minor mineral products. It is safe to say that New Mexico, with its mineral products, has, during the past ten years, added $40,000,000 to the wealth of the nation. Yet, large as the sum seems, it is but small compared with the production of Colorado on the north, Arizona on the west, and Mexico to the south, and it does seem reasonable, to judge by analogy, that sooner or later New Mexico must become as great a producer of mineral wealth as the Commonwealths with simi-

lar geologic, mineralogic, and topographic features on its immediate borders. This development, or rather lack of development, is the more remarkable, because gold was mined in New Mexico centuries before it was discovered in Colorado or in California, and copper was mined by the natives long before the Montana, the Michigan, or Arizona copper mines were even dreamed of. The causes are many, intricate, and local, but they can and will be removed in time, and then New Mexico will take its front rank among the mining States of the Union.

New Mexico has 1,500,000 acres of prospected coal fields, with 9,000,000,000 tons of coal in sight. During the fiscal year it has produced almost 1,700,000 tons of coal, despite the fact that the mines at Capitan had to close permanently after battling several years with faults and water, although 5,000,000 tons of coal are estimated to be still in sight. During the year preceding these mines produced about 100,000 tons of coal. This loss will be made up by the increase of the output of the coal mines at Dawson, the opening of new mines in Tin Pan Canyon, and under the Johnson Mesa in Colfax County, to which branch railroads are now under construction. Owing to litigation over the right of way to the Carthage mines, Socorro County, these have been idle the greater part of the year, and the mines at Gallup are still suffering from the competition of California petroleum, and have therefore produced far below their capacity during the past fiscal year. The Madrid coal mines, in Santa Fe County, have nearly reached the limit of their production, and the day of their abandonment can not be many years in the future, although they have been among the best coal producers in the Southwest. It had been hoped that the working of the Hagan mines, southwest of the Madrid and Cerrillos coal fields, would compensate for the decline in the production of the Madrid mines, but the Hagan mines have not yet entered the list of producers as had been expected, but may do so during the present fiscal year. The building of a branch of the Denver and Rio Grande Railroad from Durango to Farmington will result in the working of the La Plata coal fields in the near future, the most extensive coal fields in New Mexico being situated in that part of the Territory. The fact that many square miles of coal lands have been taken up by railroad interests in western Socorro and Valencia counties also seem to indicate that an increase of coal production will take place soon in that part of the Territory. The coal mines in Rio Arriba County, near and at Monero, have been working steadily and have produced almost 50,000 tons of coal during the past fiscal year. The mines at Van Houten, Colfax County, would have been great producers had it not been for the traffic blockades on the Santa Fe system, but as it is, their output was exceeded only by that of the Dawson mines. The coal production in the Territory in ten years has increased from 620,000 tons almost 1,700,000 tons a year.

Next in importance to coal is the zinc production, which, during the year, amounted to a value of $900,000, while next to it stands the copper production. This has increased from 700,000 pounds in 1896 to about 5,000,000 pounds this year. Grant County was the principal and almost only producer, excepting the mines at Organ, Dona Ana County, which produced a small amount. The largest copper mine and works in New Mexico, those of the Santa Fe Gold and Copper

Company, at San Pedro, Santa Fe County, have not resumed, and there seems to be no likelihood of their resumption in the near future. Nevertheless, much has been done in the line of developing and prospecting for copper properties in other counties, and especially the Bromide camp, in Rio Arriba County, and the mining camps of Otero and Lincoln counties, as well as in Socorro County, should enter the ranks of extensive producers.

In gold production there has been a steady decline from year to year. In 1896 the production amounted to $832,900, while this year it is about $400,000, exceeding, however, that of the previous year. The promise of rich strikes last year in Caballo Canyon, Gold Gulch, and elsewhere did not result in a great increase of production, and camps like Bland and Golden have been greatly neglected, although in their day they produced the bulk of the gold ore in New Mexico and may do so again, for there is no indication that the large veins of low-grade ore have been hard worked much less exhausted. The principal gold producer during the year has been the El Oro dredge, on the Moreno placers, in Colfax County, which produced over one-third of the entire gold output of the Territory. Next in gold production came Grant and Sierra counties, while the placers in southern Santa Fe, Taos, Lincoln, Sierra, and Socorro counties all contributed a small amount to make up the production of over $380,000 the past year. The richest gold mines in the Territory seem to be located in the Mogollon district, in the Red River, and in the Elizabethtown districts, but their remoteness from railroads and the difficulty of treating the ores help to reserve their importance as gold producers for the future.

The silver production of New Mexico has declined from $889,277 in 1895 to less than $125,000 the past fiscal year. It is mined almost altogether as a by-product, although New Mexico at one time boasted of silver mines that were among the richest in the world. It is certain that large amounts of that ore will be mined in the future, for silver is one of the most widely distributed metal ores in the Territory.

The production of lead has declined from 18,246,000 pounds in 1896 to 3,122,872 this year, mainly owing to the decline in silver mining. Large bodies of the ore may be found in almost every mining county of the Territory, and in southern Santa Fe County especially veins of lead are extensive. The smelter at Cerillos has been idle during the past year.

Among the most profitable mining properties in the Territory during the past few years have been the Graphic and adjoining mines, in the Magdalena and Kelly districts, Socorro County. For years they produced a wealth of lead and silver ores and of late have become the principal zinc producers in the Southwest, the only producers of zinc ore for shipping before that having been the Mineral Point Zinc Company, in Grant County.

There has been an almost entire cessation during the year of drilling for oil, although the indications seemed so very promising. In Eddy County, however, drills are being placed to test the oil fields in that section, and if they strike oil of course it will mean a revival of interest in the Gallup, Santa Rosa, the San Pedro, and other oil fields. The turquoise industry has also lagged, owing to overproduction in previous years.

Judging by the large number of mining company incorporations during the past twelve months, there is no lack of new investors and of new projects. The heavy precipitation during the past winter has also lead to a more extensive working of the old placer fields in Colfax, Santa Fe, Rio Arriba, Otero, Lincoln, and Sierra counties, as well as to resumption of work in a number of mills which had been closed down for lack of water last summer. At Silver City the Comanche Mining Company has built and is operating a large smelter, and at Deming the Luna Lead Company blew in a smelter during the present year. This is leading to a revival of mining in those districts and the districts surrounding them. The Comanche Company is building a narrow-gauge railroad to Pinos Altos, so as to be better able to handle the ore, and its success is leading to the building of other reduction works and smelters in different parts of the Territory.

An event to the mining interests of the Territory during the year was the publication of Mines and Minerals, by Prof. F. A. Jones, under the auspices of the New Mexico bureau of immigration, for the Louisiana Purchase Exposition. It is the first complete and scientific publication treating comprehensively of the history, geology, mineralogy, and development of New Mexico mining districts.

Taken all in all, there is ground for much encouragement as to the mining outlook in New Mexico. Over 5,000 men are employed in this industry, and, with many new investors and more capital, it is believed that the production of precious and base metals, coal, and other minerals next year will reach the handsome sum of $5,000,000, or fully one-third of the value of the product of agriculture, the leading industry of the Sunshine Territory, and fully equal to the production of the stock industry, which is second among New Mexico's great industries.

Herewith follows a complete review of the status of the Territory from a material standpoint, which will give an adequate idea of the progress made during the past year, and incidentally during the eight years of the present administration.

PART II.—A LAND OF OPPORTUNITIES.

New Mexico is a land of opportunities. The major part of its wealth is latent; the bulk of its natural resources is undeveloped. There are 300 acres of land to each inhabitant, and only 1 acre out of every 300 is under cultivation. Few of the almost 300 mining districts have been thoroughly prospected much less systematically developed. Manufacturing industries are in their infancy and have but begun to utilize the water power and the immense stores of fuel and of raw material that destine the Territory for a manufacturing Commonwealth.

FOR THE CAPITALIST.

Capital is needed, for money is a prime requisite nowadays for the development of resources. Good returns upon carefully invested capital are certain in a greater measure than in any other part of the Union, not excepting the Philippines or Porto Rico.

FOR THE MANUFACTURER.

Manufacturers are needed to make use of the raw material that New Mexico can and does furnish in large quantities. It has grazing upon its thousand hills 6,000,000 sheep of improved grades, therefore it produces the raw material for many woolen mills. At present it ships its wool, half of it without being scoured, almost 3,000 miles to the large dealers, who transport it again to the scouring plants and woolen mills along the Atlantic seaboard, which in turn ship considerable of their product to New Mexico or through New Mexico to Mexico, the Pacific coast, and the Orient. By scouring and manufacturing the wool into yarn and cloth in New Mexico, for which every facility and advantage exists, more than 5,000 miles of transportation can be saved, as well as insurance in transit, the profits of middlemen, and other incidentals, and losses that are inevitable in the process of manufacturing several thousand miles from the base of supplies and from the markets to be supplied. Thus in other industries: The Territory has 1,000,000 cattle and 250,000 goats; canaigre is a native plant; therefore it produces the raw material for scores of tanneries, shoe and glove factories, and allied industries. It uses over 1,000,000 pairs of shoes and boots, 50,000 pairs of gloves, 20,000 sets of harness and other leather products annually, and many freight shipments of these pass through the Territory from the East to Mexico, Arizona, California, and the Orient. The best sugar beets in the world are raised within the borders of New Mexico, and the inducements for beet-sugar factories are worthy of consideration by investors. The rubber plant is indigenous, and mineral products are of such extent and variety that industries that need them for raw material, or incidentally in the process of manufacture, will find in this part of the United States a location much more favorable than most of the eastern manufacturing centers. There exist large deposits of iron ore, fluxing material, and fuel for furnaces, steel mills, and smelters, and there are but few branches of manufacture which could not be established with profit in this part of the Southwest. Besides the raw material, there are offered the water power, the fuel, the cheap labor, special inducements, such as exemption from taxation for the first five years and a low assessment thereafter, favorable legislation, cheap building sites, railroad facilities, freedom from excessive competition, the increasing home demand of a growing Commonwealth of vast resources, and proximity to the markets of Mexico and the Orient.

FOR THE HUSBANDMEN.

Farmers are urged to come to till the fertile soil under the most favorable conditions and with home markets that pay better prices than can be obtained anywhere else. Only 250.000 acres are under cultivation, and most of these only in forage plants or in products that demand little attention; four times that area is immediately available for agricultural purposes. Not one-half of the flowing waters are utilized and not one-fiftieth of the flood waters are stored. There are undeveloped possibilities of farming by the Campbell or dry-soil method. New Mexico raises the finest fruit in the world, and every other crop that can be produced anywhere in the Temper-

ate Zone; yet it imports annually millions of dollars' worth of flour, alfalfa, hay, potatoes, fruit, garden produce, poultry, eggs, butter, cheese, honey, beef, pork, and other products of the farm and the dairy that it can and should raise at home. Free lands, the finest climate in the world, irrigation, churches, schools, railroad facilities, home markets, good prices, and extensive range, are all factors which help to make the life of the farmer and stock grower in New Mexico pleasant and prosperous.

FOR THE MINER.

A great field for the miner. New Mexico lies in the same mineral zone as Colorado, with the difference that Colorado has been well prospected, while in New Mexico, although mining is an old industry, there are many virgin mineral districts, and even the oldest mining sections have been incompletely prospected and but little developed. To the west are situated the Bonanza copper mines of Arizona and to the south the rich mining districts of Chihuahua and Sonora and other Mexican States. It stands to reason that, hemmed in on all three sides by the richest mining sections of the North American Continent, and traversed by the same mountain system, New Mexico will make as many fortunes for prospectors and miners as have the mines of Colorado, Arizona, and Mexico.

FOR THE BUSINESS MAN.

The business men of New Mexico have most of them come from the East, and it seems that without exception they have done exceedingly well. There is probably no other Commonweath which has recorded so few failures during the past decade, and in but few other sections have so many merchants advanced from a small beginning to affluence. Good business men with capital will find many an opening in their line in the older towns as well as the growing new settlements of the Territory. Hotels, private sanitariums, steam laundries, and other branches of business are among the immediate wants of New Mexico towns.

FOR MECHANICS.

While New Mexico is no manufacturing Commonwealth, yet mechanics are needed in the building trades, in the coal mines, in the railroad shops, or to go into business for themselves on a small scale. There is a promise for such of good wages as well as opportunities to be independent as are seldom presented in the crowded centers of population. For the unskilled laborer, however, the Territory offers no inducement in his line, for it sends cheap labor into the coal camps of Colorado, into the sugar-beet fields of that State, and furnishes it to the railroads in Arizona and California. The native people make excellent day laborers, are trustworthy and reliable. The Territory supplies its own sheep herders, cowboys, farm hands, and teamsters. The laboring man who has accumulated a few hundred dollars and wants to better his condition will find opportunities to buy farming land cheaply or to branch out for himself along other lines than those by which he formerly gained a living. There is also an always existing opportunity to find employment at good wages in railroad construction and lumber camps.

FOR CLERKS AND PROFESSIONAL MEN.

Positions are open for good bookkeepers, stenographers, clerks, teachers, and journalists. But those who must depend upon finding such employment had better communicate with business firms or advertise for positions before leaving their present homes, and should, if possible, acquaint themselves with the Spanish language before coming, although this is not absolutely necessary; it is merely a help. First-class professional men are likely to succeed in the larger towns or in building up a good practice and influence in the more thickly populated country districts.

FOR THE HEALTH SEEKER.

Health seekers are invited. New Mexico does not intend to shut the door upon them. Physicans the world over recognize that its climate offers the best and, in most instances, the only conditions under which those suffering from lung, throat, and nervous troubles can be cured. California's climate is good, Colorado and Arizona's climate is better, but New Mexico's climate is best of all, both from the standpoint of comfort and salubriousness. Nowhere else, according to official reports of the United States Weather Bureau, is there such a high per cent of sunshine year in and year out, combined with rarity and dryness of atmosphere, low range of temperature, cool summers, and mild winters. The United States has put the stamp of its approvel upon New Mexico's climate by establishing here its only two sanitariums for the cure of consumption, one under the Marine-Hospital Service at Fort Stanton, and the other an army and navy hospital, at Fort Bayard. The great Fraternal Sanitarium for the cure of tuberculosis has been located by the united fraternities of America at Las Vegas Hot Springs for the same reason.

The story of the cures that have been effected at the first two mentioned hospitals are now part of the official records of the Government and can be consulted by those who still doubt the testimony of the thousands who have found health and have been virtually snatched from the brink of the grave by the sunshine and bracing atmosphere of the sunshine Territory. Ample accommodations are to be found at tent cities, hotels, sanitariums, and homes in the larger towns as well as in the smaller settlements; also the various hot springs, which last-named are gaining well-deserved renown for their potent medicinal virtues. Those who desire to do their own housekeeping or to live in tents of their own, can do so as cheaply in the Rocky Mountains as they can in the Alleghenies or the Adirondacks.

FOR THE TOURIST.

New Mexico extends the "glad hand" to the tourist. It will give him his money's worth, be he interested in scenery, in ethnology, in romance, in history, in the quaint, in the picturesque, or in the sublime. Superb mountain scenery, deep canyons, snow-clad peaks, difficult mountain trails, mining camps, picturesque and pretty valleys. Historic spots by the score and ruins of prehistoric origin by the thousand. It is the land of the cliff dwellers, the Pueblos, the Navahos, the Apaches; of the Indian dances, of the Conquistadores

and their descendants, of mission churches antedating by centuries those of California; of towns, buildings, and monuments older than the most ancient in any other part of the United States; of scenery grand and unique. To the sportsman it offers bear, mountain lion, and lesser game; trout, bass, and other fish, and to those who love to tread quiet and forsaken byways of nature or of history, or who seek rest in deep forest or along babbling brooks, there is no more attractive region than that of this old and yet new land.

CLIMATE.

New Mexico invites metaphors; it compels superlatives. Bathed in sunshine, swept by the cool winds of the mountains, endowed with untold mineral wealth, colored with the hues of the sunset, and hallowed by the romance of the Cliff Dwellers, the Pueblos, the Conquistadores, and the Franciscans, it shines brilliantly and with a color all its own in the galaxy of the stars of the Union. The "Land of Sunshine," one talented author calls it, and New Mexico has adopted and learned to love that name. The "Land of Poco Tiempo," a name now outgrown. The "Land of Sunshine, Silence, and Adobe," now no longer strictly true. The "Land of the Turquoise Sky," beautiful and expressive; the "Land of the Conquistadores;" the "Land of the Pueblo Pyramids;" the "Land of the Sun King," and many more have been the attempts to coin a distinctive phrase to characterize the vivid impression that New Mexico's climatological, physical, and ethnological characteristics make upon the visitor. "The Sun Land of Promise, Romance, and Health," though not quite as euphonious as some of the above, comes, perhaps, closer than those cited in summarizing what gives the Territory its distinctive atmosphere and color. But there are volumes of romance, of history, of scenic beauties, of climate, of natural wealth, of progress that can be written in addition to those that have been published with New Mexico, its people, and their traditions as their subject. But after all has been said, the fact remains that its climate, its sunshine, its history, and its resources set the Territory apart from the other Commonwealths, that directly or indirectly influence all its industries, all its activities, its very nature. Nowhere else in the world is there found a more perfect climate and but few sections can boast of a climate as good. It is not only a lovely day now and then, not only a fine summer or a pleasant winter, but a perfect all-the-year-around climate that is making New Mexico the sanitarium of the world, the refuge of those stricken by one or the other of the many forms of lung, throat, and nervous troubles, and of invalids from other causes. It is this fact which must be borne constantly in mind when reading of New Mexico's resources, developed and undeveloped wealth, and its manifold industries, as they are briefly outlined in this report.

LOCATION AND AREA.

New Mexico covers an area of 122,469 square miles upon the southeastern portion of the Rocky Mountain plateau in the United States. This is an area greater than the Kingdom of Italy, and of any other State in the Union excepting Texas, California, and Montana. It

is situated between the parallels of 31° and 37° north, and the meridians of 103° and 109° west. It is therefore in the north Temperate Zone, but its diversity of altitude from less than 2,900 feet to over 13,000 feet gives it every variety of climate, except that sunshine and dryness of atmosphere are nearly the same at the lowest as at the highest points. The Territory is divided into 25 counties. Its chief executive and a number of other Territorial officials are appointed by the President of the United States, its legislation is subject to the approval of Congress and must conform to the organic act enacted by the Congress of the United States, but otherwise the Territory governs itself, elects its own legislature, its own county and municipal officers, maintains its own institutions, manages its own finances, and regulates its own internal affairs.

HISTORY.

In less than fifty years after the discovery of America by Columbus the Spaniards visited and began to occupy that part of the United States now known as New Mexico. The conquest and Christianization of the Pueblo Indians began before the dawn of the seventeenth century and several decades before the first permanent settlements by the English on the Atlantic coast. In 1680 the Pueblo Indians succeeded in driving the Spaniards from this then Spanish province, but in 1692 New Mexico was reconquered by the Spaniards. When Mexico threw off the yoke of Spain New Mexico became part of the new Republic and shared its vicissitudes until the United States took possession in 1846, during the war with Mexico. Through the Gadsden purchase the southern portion of the Territory was acquired by the United States from Mexico. It is only since the coming of the railroads, a quarter of a century ago, that the Territory has attracted immigration and has taken a position among the progressive and prosperous Commonwealths of the Union. Such is a brief outline of a history of three hundred years that teems with romance, with wars, with mighty deeds, with heroic self-sacrifice, and with thrilling episodes.

POPULATION.

New Mexico to-day has 300,000 people within its boundaries. Less than one-half of these are of Spanish, Mexican, and Indian descent, most of these people using the Spanish language in preference to English, although a steadily growing per cent is as well able to converse in English as in Spanish. A few more decades will witness the complete amalgamation of the native people, both as to language and as to customs, with the newcomers of Anglo-Saxon origin. In 1850, when the Territory was organized, although it then included what is now Arizona and part of southern Colorado, its population was only 61,547. In 1860 it was 93,516. In 1870, when New Mexico had contracted into its present boundaries, the population was only 91,874. In 1880 it was 119,565, and it was the coming of the railroads about that time that has since almost trebled the population of the Territory, each decade showing a larger per cent of increase in population than did the rest of the United States.

But it is not only in population that New Mexico has progressed during the past twenty-five years. A public school system has been

established and is being maintained liberally, its city schools comparing favorably with those of Eastern cities of much larger population. Financially the Territory is in excellent condition, for despite a low rate of assessment its income is not only sufficient to pay all obligations as they fall due, to support 15 Territorial institutions, and to aid many quasi Territorial charitable institutions, but to pay off the bonded indebtedness and to accumulate a large sinking fund.

The cities and towns are progressive, and the idea that the Territory is upon the ragged edge of civilization is entirely erroneous, for civilization is older in New Mexico than in any other part of the United States. Every settlement has its church and its schoolhouse, and social organizations and fraternities were organized in the centers of population as long as fifty years ago, the Masonic and Odd Fellows lodges at Santa Fe, for instance, having both celebrated their semicentennial and being older than any other lodges west of the Missouri River except the Masonic lodge in Salem, Oreg. Irrigation works, a network of railroads, modern mercantile establishments, colleges, academies, high schools, Territorial institutions of learning and of charity, hospitals, sanitariums, all testify to a spirit that aims to keep abreast with the times. The larger towns have electric-light works, two of the cities have electric street railways, all of the larger towns have waterworks, four of the cities have free delivery of mail, three rural mail routes have been established, the Territory has entered upon a programme of good-road building, and on every side there are evidences of civic spirit and pride manifested in beautiful homes, prosperous farms, and progress along every line of public and private activity.

PHYSICAL FEATURES.

New Mexico is part of the roof of the continent. From one side of this roof the waters flow into the Atlantic and from the other into the Pacific. The roof not only slopes to the east and to the west, but also from the north to the south, there being a difference of 3,000 feet in the average altitude of its northern and of its southern boundaries. The ridge of the roof which traverses the western part of New Mexico varies in altitude from 4,000 to over 13,000 feet. From this ridge branch off at right angles, or run almost parallel to it, many majestic mountain ranges, extensive foothills, and table-lands, cut by canyons and arroyos or hiding between their slopes valleys of great fertility and beauty.

The mountains, though locally and geographically designated by various names, are all a part of the Rocky Mountain system, whose backbone in the northern part is the Sangre de Cristo Range, the Alps of the Southwest, lofty and massive, over a score of its peaks rising to an altitude of from 12,000 to above 13,000 feet. It extends from the Colorado line through Taos, Colfax, Mora, and San Miguel, into Santa Fe County, and from its wooded peaks and flanks flow the streams that water the fertile Santa Fe, Espanola, Taos, Mora, Cimarron, and other valleys. The names of subsidiary ranges are the Culebra, the Taos, the Picuris, the Cimarron, the Pecos, the Glorieta, and the Santa Fe. Other ranges are part of this beautiful mountain system, and the Cochiti, the Jemez, the Valles, the San Mateo, and the Zuni Mountains, a little northwest of the center of the Territory, may be considered a continuation of it. As the middle of the Territory is

gained, going southeast, the mountain ranges are more disconnected and less lofty, although still massive. Here the Sandia, the Ortiz, the San Pedro, the San Isidro, the Manzanos, the Gallinas, and the Jicarillas are names for mountains, some of them rich in mineral wealth and others well timbered to their jagged summits.

Farther south, four distinct ranges, broken of course, can be traced, their axes all converging apparently toward the center. The eastern branch is the loftiest and is known as the White Mountains, rising to an altitude of almost 12,000 feet. Continuing toward the south it is called the Sacramento Range, while the Guadalupes in the far southeast are an apparent extension. The second branch is also east of the Rio Grande, commencing as the Oscuro Range and continuing southward as the San Andreas and Organ mountains and terminating in the Franklin Range. The third branch consists of the Magdalenas, the San Mateo Mountains, the San Cristoval, the Caballos, and the Black Range, while the most western branch consists of the Datils and the San Francisco, Tularosa, and Mogollon ranges, extending into the Burro Mountains, in Grant County. Besides these there are many apparently independent mountain groups and ranges, such as the Floridas, the Cooks Range, the Las Animas Hills, the Ladrones, the Peloncillo, and others, whose geographical appelations are hardly of interest to the general reader and whose importance to the Territory is only as to the extent of their watershed, the direction they give to the flowing streams, and their mineral wealth.

A list of the better known peaks of 10,000 or more feet in altitude is as follows: Truchas peaks, 13,306, 13,275, and 13,150 feet; Taos Mountain, 13,145; Jicarilla Peak (Pecos), 12,944; Cone Peak, 12,690; Costilla Peak, 12,634; Santa Fe Baldy, 12,623; Pecos Baldy, 12,500; Elizabeth Baldy, 12,491; Sierra Mosca, 12,400; Lake Peak, 12,380; Santa Clara, 11,507; Bassets Peak, 11,500; Elk Mountain, 11,500; Mount Taylor, 11,389; Sierra Blanca, 11,300; Thomas Mountain, 11,275; Pelado Peak, 11,260; Abiquiu Peak, 11,240; Round Mountain, 11,000; Agua Fria Peak, 10,965; San Antonio Peak, 10,833; Mount Magdalena, 10,798; United States Mountain, 10,734; Sandia Mountain, 10,609; Chaperito Mountain, 10,600; New York Mountain, 10,594; Thompson Peak, 10,546; Osha Peak, 10,223; Hermits Peak, 10,200; Ute Peak, 10,151; Manzano Peak, 10,086; Mimbres Peak, 10,061; Nacimiento Peak, 10,045; Mount Capitan, 10,023; Grass Mountain, 10,000. On the Pecos Forest Reserve alone, in an area less than 700 square miles, there are mapped three peaks exceeding 13,000 feet in height; ten between 12,000 and 13,000; twelve between 11,000 and 12,000, and seven between 10,000 and 11,000 feet, or 32 peaks in all whose altitude exceeds 10,000 feet, while there are a hundred or more peaks higher than any mountains east of the Mississippi.

The elevation of the principal passes is as follows: Costilla Pass, 10,188; Cumbres, or Toltec, Pass, 9,622; Taos Pass, 9,353; Volcano Pass, 8,871; Raton Pass, 7,623; Glorieta Pass, 7,432; Capitan Pass, 7,398; Pedernal Pass, 7,181; Mora Canyon, 6,528; Emery Gap, 6,462; Upper Abo Pass, 6,431; Tijeras Pass, 6,214; San Augustine Pass, 5,694; Organ Pass, 5,467; Magdalena Pass, 4,755; Florida Pass, 4,600. The lowest points in New Mexico are Red Bluff, on the southeastern boundary, 2,877 feet; Carlsbad, 3,122; Roswell, 3,565; Anthony, 3,789; Las Cruces, 3,888, and Donna Ana, 3,916 feet—the elevation even of these, however, exceeding one-half mile.

GEOLOGY.

Although the systematic study of the geology of New Mexico has been thus far neither comprehensive nor thorough, a general view of the principal formations has been gained. From both a mining and a scientific view point the rocks of New Mexico are of exceptional interest. In fact, erosion has exposed the geologic formations at many points so that they may be read even by the casual observer, and it seems that there are but few places in the United States where the study of geology and mineralogy can be pursued under as favorable conditions. The escarp of the Sandia Mountains, for instance, which faces the Rio Grande, exposes fully 5,000 feet of its formations and is classic in that respect. West of Mount Taylor, toward the Zuni Reservation, erosion has had a gigantic playground, and nowhere elses in the world, geologists say, has the tooth of time, wind, and water played such fantasies. The wide range of geologic formations represented, the large and diversified deposits of ores and other mineral values which these formations are known to contain, and the fact that the mineral wealth of the region has been exploited upon a small scale only, all go to make New Mexico a very interesting field to the geologist, the mining engineer, the expert, the prospector, the miner, and the man who ultimately profits by their discoveries—the investor and capitalist.

It is with the older eruptive rocks that the valuable minerals are mostly associated, as well as in the later gravels in the Carboniferous limestone and in the Upper Cretaceous sandstones. Low-grade copper ore is disseminated widely throughout the "red beds," especially in strata of shale and sandstone, copper having in many places replaced fossil plants and trees in the form of a high-grade glance. However, the spasmodic appearance of these glances and the low grade of the ore in the surrounding formation have thus far not made the working of these deposits profitable. The Upper Cretaceous sandstones contain the coal deposits which are distributed in the Laramie and the Fox Hill series, the Cerillos and Carthage fields belonging to the latter, the coal of these two districts being superior to those in the Laramie series, especially on account of their fine coking quality. Much of the copper and all of the principal lead and zinc ores are found in intimate association with the carboniferous limestones. Gold and silver ores are nearly always found in intimate connection with the metamorphic and eruptive types of rock, especially with porphyry. Lead, copper, zinc, and other ores are, as a matter of fact, found intermixed with the gold and silver ores. In the placer and black sands have been discovered traces of platinum and other rare minerals. The geological formations comprise five very marked classes of rock material. At the base is a great mass of crystallines, chiefly granites, gneisses, and schists, with some metamorphic clastics, which can not always be distinguished from the members of the fundamental complex. The latest Paleozoics are widely distributed, and are chiefly known by the thick blue limestones which form the crests and back slopes of many of the principal mountain ranges; these are carboniferous. A third class of rocks is found in the thick and extensive beds of massive yellow sandstones, the geological age of which is Cretaceous.

Over all these indurated rocks is a mantle of soft clays and sands, largely deposited during the Tertiary period. Later than all of these are vast outflows of igneous rocks, which cover many thousands of square miles, covering nearly one-sixth of the Territory's area. The period during which these volcanic rocks were erupted extended from the late Tertiary down to within historical times. It is at the end of the Tertiary period that the Mal Pais was formed. It is to this period that New Mexico owes many of its most fertile river valleys, the rivers having been dammed by lava flows forming lakes, which, after the rivers again eroded a bed through the lava, were unwatered, leaving valleys deeply covered with fertile soil. Thus the Espanola Valley and the Rio Grande Canyon, 60 miles long, above Embudo, were formed, as were also the valleys along the Gila and San Francisco rivers.

Only in the southern extremity of the Sangre de Cristo Range it is thought that true Archaean rocks are exposed. Possibly also some of the basement crystallines of the Mogollon and Burro mountains in western New Mexico, and in the Sierra de los Caballos, in the south-central part, may prove to be of Archaean age. Even in these localities the areas which may be properly referred to the Archaean are quite limited.

Most of the mountain ranges are great tilted blocks, having one long sloping side and one steep face, originally a fault scarp. In the abruptly rising faces considerable portion of the basal part is often found to be made up of quartz plates, micaceous and hornblendic schists, gneisses, and granites. The foliation of these highly metamorphosed rocks is usually nearly vertical. When they meet the basal quartzites and limestones above they are sharply beveled off, and the stratification of the last-named beds is nearly at right angles to the planes of lamination beneath.

These highly metamorphosed masses are here referred to the Algonkian age. They are more or less mineralized in the various mountain systems. They contain many of the extensive deposits of copper, iron, silver, gold, and some of the rarer metals. These rocks are well displayed in the Sandia, Manzano, San Andreas, Magdalena, Caballos, Black, Sangre de Cristo, Sacramento, and other ranges.

In central New Mexico, in the Sandia, Caballos, and San Andreas ranges, there is a massive quartzite, 50 to 100 feet in thickness, the lower part of which is a conglomerate, lying between the Carboniferous limestone and metamorphics. It is conformable with the limestones immediately above it. This quartzite member reposes upon the upturned ages of the Algonkian formations, indicating clearly that an enormous erosion interval separates the two. In some mountain ranges this quartzite carries important copper deposits.

On the whole, the Carboniferous rocks are very important formations. They are found in the majority of the principal mountain ranges. In most localities they are important ore carriers. As guide horizons they deserve the fullest consideration in the location of mines. Four important series of formations belonging to the Carboniferous system have been clearly made out. They represent the Lower Carboniferous, the Middle Carboniferous, the Upper Carboniferous, and Oklahoman series. The nether series of the Carboniferous has been clearly differentiated in a number of localities. Principal of these places is Lake Valley, in Sierra County. In the Sac-

ramento Mountains the faunal equivalent of the Burlington limestone of the Mississippi Valley is well exposed.

The great limestone plates which cap the principal mountain ranges in central New Mexico, and which form their back slopes, are Carboniferous in age. Immediately beneath the great limestone formations is found usually a white quartzite, which often passes downward into a coarse conglomerate. The quartzite with its coarse phase rests unconformably on the upturned edges of the metamorphic series.

The great limestones are easily distinguishable by their black and blue to gray color, their peculiar compact texture, and the fossils which they contain. The thickness of the limestone is from 300 to probably 1,000 feet. It is massively bedded, and in some localities contains some very thick beds of pure whitish lime rock.

This great limestone formation forms a remarkable cornice on the Sandia Mountains, clearly seen from the railroad station at Albuquerque. It is also an important part of the Manzano, Magdalena, Socorro, Caballos, Ladrones, San Andreas, and Sacramento ranges.

In most of the districts the Carboniferous limestone carries important lead and silver deposits. The quartzite also carries copper.

Above the blue limestone of the Carboniferous comes in an important sandstone, and then a sequence of shales and sandstones conspicuous for their remarkable red coloration. "Red beds" they are generally called.

These Permo-Carboniferous red beds are found everywhere at the foot of the back slope of the central New Mexico mountain ranges. They are 200 to 1,000 feet thick and often form a conspicuous feature in the landscape.

In the Sandia Mountains the lower sandstone is called the Coyote sandstone, from Coyote Springs, and the upper member of the Bernalillo shales.

These red sandstones and shales are notable for the copper ores everywhere distributed through them.

There appears to be small doubt that the upper part of the great formation, long called the "red beds," belongs to a later geological age than the Carboniferous. American geologists prefer to denominate the lower part of the Threefold Mesozoic the Jura-Trias.

These beds are largely developed in the northeastern part in the Cimarron, Canadian, and Pecos valleys, and in the central part in the Rio Grande Valley. In thickness the measurement is probably greatly in excess of 500 feet.

The important ore deposits are chiefly those of copper and iron. Gypsum, fire clays, and cement materials abound.

The Cretaceous formations are the most extensive surface rocks. They probably cover one-third of the whole area. Both the Upper and Lower Cretaceous sediments are well represented.

In the Canadian and Pecos valleys, particularly around the western and northern borders of the Llano Estacado, there lies above the "red beds" a remarkable sequence of sands, chalky rocks, and clays. These have been called the Trinity sands at the base, the Fredericksburg limestone, and the Washita sands.

At the base of the Upper Cretaceous is a sandstone at least 300 feet in thickness. This is one of the chief artesian-well reservoirs.

In northeastern New Mexico particularly, the Colorado formation is well defined. It there attains a thickness of fully 800 feet. It comprises chiefly shales, with numerous bands of limestone and several thick sandstones.

Attaining a development of 1,500 feet in northeastern section, the Montana is well represented by at least two important terranes, known farther north as the Pierre shales and the Fox Hills sandstones. The shales are prevailingly gray and drab, becoming yellowish above and blackish below.

Here the beds generally referred to the Laramie are upward of 2,000 feet in thickness. The rocks are chiefly gray sandstones and shales, with numerous beds of coal. Most of the coal of the region is believed to belong to the Laramie age. The coals of the Raton, Dawson, Cerillos, Carthage, and the Bear mountains are all regarded as Laramie coals.

In northeastern New Mexico and in the Rio Grande Valley there are two large areas of gray shales which reach a maximum thickness of over 800 feet. They have been referred to the early Tertiary, and are called the Puerco series.

The later Tertiary beds are widely distributed. The Llano Estacado formation of the eastern part, over 800 feet in thickness, appears to belong to this age. On Galisteo Creek, south of Santa Fe, certain sands are referred to the Neocene, as are the Santa Fe marls so extensively developed north of the city of Santa Fe. The marls extend down the valley of the Rio Grande at least as far as Socorro.

New Mexico is preeminently a mountain country. Geologically its mountains are interesting on account of their valuable mineral deposits; topographically, on account of being the sources of the life-giving rivers, without which the Territory would be a desert.

RIVER SYSTEMS.

New Mexico has three large river systems. That of the Colorado, draining the entire region west of the Continental Divide into the Pacific Ocean, and the Rio Grande and Canadian systems, both draining the waters of the eastern and larger part of the Territory into the Atlantic. There are in addition, several independent systems whose waters never reach the ocean, the principal of these being that of the Mimbres River in the southwestern portion. None of the rivers of the Territory are navigable nor are there any large bodies of water, although there are numerous mountain lakes and several lakes formed by irrigation systems, while at certain seasons of the year the submersion of deep places on the plains or mesas forms lakes and lakelets.

Of most importance to New Mexico is the system of the Rio Grande. The river rises in Colorado and bisects the Territory, almost 500 miles of its course being within New Mexico. In its valley and tributary valleys live two-thirds of the population of the Territory, and with its tributaries it furnishes the irrigation water for three-fourths of the land under cultivation. During flood seasons it carries an immense amount of water that spreads over the lowlands, but during the dry season it dwindles into insignificance in many places, although a large volume of water flows under the sandy bed at all times. In the northern part of its course the river flows through precipitous canyons, opening into the Espanola Valley, and then

rushes through the White Rock Canyon. South of this its valley grows wider and the stream more sluggish, the banks being low or consisting of sand bluffs, excepting in lower Socorro and in Sierra counties, where the Elephant Buttes close in upon the stream, which for a short distance flows more rapidly again, but below the Buttes spreads out into the Mesilla Valley, one of the garden spots of the Southwest. This river has been called the "Nile of New Mexico," and this name is truthful within certain limitations. Egypt without the Nile would be a desert, New Mexico without the Rio Grande would still be a rich and prosperous Commonwealth, although its population would only be one-half of what it is to-day and instead of being, first of all, an agricultural, it would be more a stock and mining country.

The Rio Grande has many tributaries, along which are situated some of the loveliest and most fertile valleys. Commencing in the north, the most important are the Costilla, Cabresto, Taos, Embudo, Petaca, Chama, Santa Cruz, Pojoaque, Santa Fe, Jemez, Galisteo, Puerco, and Salado rivers. South of the last named the Rio Grande is practically tributaryless for over 100 miles, except during the spring months or after heavy rains.

Next to the Rio Grande the longest river in the Territory is its largest tributary, the Pecos. It rises in Mora County, on the Pecos River Forest Reserve, and flows southeasterly for over 400 miles through the Territory and finally enters the Rio Grande in Texas. Along the upper course it is a mountain stream, but in Guadalupe County it assumes the characteristics of the lower Rio Grande, a wide, shifting, sandy bed, cutting through bluffs or spreading over lowlands, carrying an immense volume of water during floods, seeping into the ground along certain stretches during drought, but always having a strong underflow. In Chaves and Eddy counties the flow of the river is more permanent and of greater volume, but here, too, it fluctuates according to the season. The waters of the Pecos are more alkaline than those of the Rio Grande, especially from Santa Rosa south. The Pecos has a number of long tributaries, but none of them carries a great volume of water except after heavy rains or during the flood season.

The river system next in importance is that of the Canadian, which drains the eastern slope of the main Rocky Mountain range as far south as the headwaters of the Pecos River. Its principal tributaries—the Cimarron, the Vermejo, the Ocate, and the Mora—carry a considerable amount of water, while there are a number of lesser tributaries perennial in their flow in their upper courses. These streams have more or less the characteristics of mountain streams, with rock bottoms. Still, they have considerable underflow, and as the Canadian approaches the eastern boundary its waters seep into the sandy bed and its tributaries are mere arroyos.

The third great system is that of the Colorado, exceeding the other two systems in the amount of water carried, but inferior to them in the number of acres under cultivation and tributary to it and the population dependent upon its waters for irrigation. The largest affluent is the San Juan, with its important tributaries, the Animas and La Plata, draining southwestern Colorado and northwestern New Mexico. To the Colorado system also belong the Zuni, the

Gila, and the San Francisco rivers, all important on account of the large volume of water they carry.

Of the independent river systems those of the Mimbres, the Tularosa, the Tres Rios, and the Datil are alone worthy of more than mere mention.

While the rivers of New Mexico are not great highways of commerce, yet, owing to the necessity of irrigation, they are the arteries upon whose flow prosperity depends to a great extent. They differ in many respects from rivers in the east owing to peculiarities of climate, of soil, and the uses to which their waters are put. So-called arroyos, or dry water courses, furrow New Mexico in every direction in addition to the rivers and streams. These arroyos carry water only after rains or when the snow is melting in the mountains. Most of them have an underflow, but ordinarily they appear to the eye as rivers that have been dried up by the sun and the winds.

IRRIGATION.

Crops are raised in the mountain valleys much the same as in the more humid East. On large areas, especially in draws, sinks, and former river and lake bottoms, the Campbell method of soil culture will enable the energetic husbandman to do well without irrigation or with scant irrigation, but as a rule irrigation is necessary to the successful pursuit of agriculture, and it is really the ideal condition under which to raise crops, as has been proven by five thousand years of history in the fertile valleys of Egypt, Mesopotamia, Hindostan, China, North Africa, and northern Italy. No excessive moisture, no drought, worries the husbandman who possesses an irrigation right in a perennial stream, who has fortified himself with a reservoir, or who has struck artesian water, or who has wells from which he can pump. Irrigation means intensive farming; it means that the land will be fertilized at the same time that it is watered; it means certain crops and a maximum production per acre. In its perfection agriculture by irrigation is as distinct an advance upon the methods of agriculture in the more humid States as manufacturing with machinery is over manual labor.

When it is remembered that out of a total area of over 78,000,000 acres only a little over 250,000 are in actual cultivation under irrigation ditches, then it will be seen that there is a vast opening for enterprise in reclaiming broad areas of as fertile lands as God ever created, lying under a perfect sky and in a well-nigh perfect climate. Nor is there a lack of water for reclaiming at least a portion of the vast arid domain. The flood waters which flow to waste annually, the ordinary flow of rivers and streams that is wasted or not utilized, the tremendous underflow in most of the broad valleys, the feasibility and cheapness of pumping water from unfailing wells in many sections, and the undoubted existence of large artesian belts all promise that sooner or later a large part of New Mexico will be under successful irrigation.

Sufficient data have been gathered and published in the report of the Territorial commission of irrigation in 1898 and by the United States Geological Survey to make it quite practical to select the most available reservoir sites and to determine upon projects which at a minimum cost would benefit the greatest number of people.

The Territory may be properly divided into three distinct regions—the eastern plains, the Rio Grande Valley, and the western plateaus. The eastern portion is an extension of the high plains of Texas, broken by the waters of the Canadian and Pecos rivers. This broad stretch of open grazing land continues to the uplands which form the southern extension of the Rocky Mountains in Colorado.

This portion is a favored section for the cattle growers and sheep raisers. Beyond this broken country is the Rio Grande Valley, and still farther west are elevated arid table-lands. These extend to the mountains, which lie about the headwaters of the Gila and Salt rivers. In the extreme northwestern part of the Territory, where are the fertile valleys of the San Juan River and its tributaries, there has been recently a considerable development of irrigation.

In the Rio Grande section there are a few very large irrigation canals and many small community ditches held by the small farmers and the Pueblo Indians. The origin of these ditches is lost, even in local tradition, and it is probable that many more of them were in use before the advent of the Spaniards. Under the community system each ditch is held and controlled by the owners of the land it irrigates, these living together in a village or pueblo. In the fall of each year a mayordomo is elected, who has control of the ditch for the following season. He assesses the land for the labor necessary to clean the ditch and to keep it in repair during the irrigation season, apportions the water to each consumer according to the local conditions, and in general supervises all matters pertaining to irrigation. While the apportionment of labor varies, it is generally such that a farmer holding a tract of 6 acres is required to furnish the labor of one man in cleaning and repairing the entire ditch in the spring, while he who holds 12 acres furnishes a man's labor when necessary during the whole season. The ditches have no regular gates or sluices, and flooding is the only means of irrigation; consequently the use of water is extremely wasteful.

The development of the agricultural resources depends largely upon the control of the water of the Rio Grande and its many tributaries. The seepage and inflow from streams maintain the river at a good volume in northern New Mexico. Sites suitable for reservoirs along the Rio Grande and its principal tributaries are frequent and several of them excellent. Large dams constructed at these points would render it possible to hold large quantities of water for irrigation of a number of open valleys along the course of the river.

The reclamation service of the United States Geological Survey has completed the preliminary work for the building of a diverting dam at Penasco Rock and a dam at the Elephant Buttes in the Rio Grande, north of the Mesilla Valley. Water-users' associations have been organized as the first step toward having the reclamation service undertake actual construction work upon this project.

The reservoir will be 40 miles in length, and its capacity will be 2,000,000 acre-feet, or ample for the 180,000 acres of land to be supplied by it. The cost of the project, including reservoir and all diversion works and canals above El Paso, is estimated at $7,200,000, or $40 per acre on 180,000 acres. This is below the value of irrigated land in the valley, and those best informed pronounce the project desirable at the price. The main item of cost is the dam, which will require 300,000 barrels of cement, a large amount of machinery, gates,

etc., entailing a very heavy outlay for freight. It is estimated that the dam will cost approximately $5,500,000. As projected, the dam will be arched upstream and on a 6° curve, the upstream edge or crest having a radius of 955.4 feet. Its dimensions are as follows: Height of dam from bed-rock formation to top parapet walls or crest, 255 feet; thickness at bottom, 180 feet; on top, 20 feet; length of crest, 1,150 feet. The roadway is 5 feet below the crest, between parapet walls on each side, and is 14 feet wide. The spillway at a natural gap on the west side of the valley is several miles above the dam and about 175 feet above the level of the present river bed. It will have a total length of 800 feet.

The reclamation service is taking water measurements on the Sapello, Gallinas, and Tecolote rivers, in San Miguel County, as a preliminary to considering a project for the construction of a reservoir on the Las Vegas grant. Private companies have from time to time constructed irrigation systems in the valleys tributary to the Rio Grande, and a number of other projects are under consideration at present.

The largest irrigation system in the Territory, and probably in the United States, is situated on the Pecos River, in Chaves and Eddy counties. In the lower part of its course in New Mexico the Pecos receives large quantities of water from numerous springs, which are a notable feature, many of them emerging from the earth with such volume and force as to prove beyond question that their source is high upon the snow-clad ranges to the northwest of them. The drainage area of the catchment basin of the Pecos River lying within the Territory and available for irrigation purposes is estimated at 20,000 square miles. The irrigation system of the Pecos Irrigation Company has a water supply sufficient to irrigate 250,000 acres, although thus far only enough storage capacity had been provided for 20,000 acres which are under cultivation. Unfortunately the dam of Lake Avalon, from which the irrigation ditches are supplied, has been washed out twice by floods and was not rebuilt last year. An effort is being made to have the Federal Government take over this project from its owners, which, according to the latest reports, will be successful and will result in the rebuilding of the Avalon dam by next year. The reclamation service is building a reservoir on the Hondo, a tributary of the Pecos, which will be completed in 1906 the Lake Urton reservoir, will probably be approved by the reclamation service for construction. The Felix irrigation system, owned by private parties, furnishes the water for a large area in southern Chaves County. Irrigation ditches in this drainage basin are confined almost wholly to the tributaries, the course of the main stream being for the greater part through a canyon, from which it does not emerge until it nears the county line. Important irrigation systems are supplied by the Cimarron, Vermejo, and Mora rivers, those of the two first-mentioned streams being among the most extensive in the Territory.

Two large canals, constructed by a corporation, are located on the Maxwell grant, a tract containing 1,491,755 acres of grazing, agricultural, timber, and mineral lands, including within its boundaries the headwaters of the Canadian, Vermejo, and Cimarron rivers. Along the line of these canals is a series of natural basins or ancient

lake beds, favorably situated, in which large quantities of water are stored. Many smaller natural reservoir sites, located at elevations where evaporation is comparatively slight, are found near the headwaters of nearly all the streams which originate in this basin. Eleven reservoirs, with a combined capacity of 5,000 acre-feet, have been constructed on the Vermejo. On the Cimarron there are thirteen community or individual ditches and one corporation ditch. Connected with these are four storage reservoirs, with an average capacity of 6,000 acre-feet. The area irrigated by the ditches of this stream is 8,000 acres. The Mora River and its tributaries supply water for practically all the irrigation systems in Mora County. Two ditches have been constructed by which, during the periods of drouth, water is taken from the Rio del Pueblo in Taos County and diverted through passes in the mountains. All the ditches along the Mora and its tributaries are either private or community ditches.

In the western plateau region the total number of acres irrigated is small compared with the other two main divisions of the Territory. The waters affording supply for this region are the San Juan, the Gila, the Zuñi, and the Mimbres rivers. The lands irrigated by the San Juan River are in the northern part of San Juan County. The sources of this river are in the San Juan and La Plata mountains in Colorado, and the affluents which it receives from the south are unimportant. Near the Colorado line the San Juan has a mean flow of 960 cubic feet per second. This is augmented by the waters of the Rio de los Pinos, which has an estimated flow of 80 cubic feet per second. The most important tributary is the Animas, which has a normal flow at a point below Aztec of 855 cubic feet per second.

While the flow of all these streams is perennial, it fluctuates with the seasons, being increased by the melting snows in the spring and later by the rains which usually occur in the latter part of July and in August.

In the drainage basin of the San Juan there are 54 ditches, located as follows: On the Animas 20, irrigating 7,500 acres; on the San Juan 19, irrigating 4,000 acres; and on the La Plata 15, irrigating 3,000 acres. The total area irrigated by the San Juan and its tributaries is 14,500 acres. Here the reclamation service has completed surveys for the diversion of the surplus waters of the Animas into the La Plata Valley, which works, if built, would reclaim 20,000 acres. A private corporation has taken the preliminary steps to reclaim 20,000 acres in the vicinity of Blanco, on the San Juan River.

The Gila River rises in the Black and Mimbres ranges, and in Grant County flows for the most part through narrow mountain valleys. The flow is permanent, and only a small portion is used. The area irrigated by it is 6,000 acres. In Grant County a considerable acreage is irrigated by the Rio Mimbres. This stream flows southeast through the counties of Grant and Luna to within a few miles of Deming, then turns abruptly to the east and discharges its waters upon the Florida plains, where they are lost in the sands.

Between the basins of the Gila and the San Juan rivers there is a small area drained by the Zuñi River. Portions of this area are irrigated by the Zuñi Indians. The Indian Office is constructing a reservoir for the Pueblo Indians on the Zuñi Reservation, which will impound sufficient water to irrigate 6,000 acres.

LANDS OF NEW MEXICO.

Of the 78,374,000 acres of land surface in New Mexico only 6,000,000, or 6.5 per cent, are included in farms and only 400,000 are improved. Of the improved land 385,000 acres are located outside of the Indian reservations. The importance of irrigation is demonstrated by the fact that the cultivated area outside of the Indian reservations is only a little more than 250,000 acres. In 1889 the corresponding cultivated area was but 91,775 acres.

Of the farms of the Territory 72.2 per cent are wholly or partially irrigated, while of the improved acreage 57.2 per cent are cultivated. The average area of improved land in such irrigated farms is 33 acres, of which 26 are cultivated.

The average number of acres of cultivated land for each mile of ditch reported is 86. The area under ditch for each mile is 272 acres, or over three times the average cultivated area. In many States where there is a larger percentage of new irrigation enterprises than in this Territory the area cultivated bears a much smaller ratio to the area under ditch. In the sections of New Mexico where irrigation has been practiced for centuries the effect on the old canals of the diversion of waters at points farther up the stream is shown by the difference between acreage under ditch and the acreage actually cultivated. This is especially evident along the Rio Grande. On the other hand, in the valleys of the Pecos and San Juan rivers and their tributaries the difference is due to the existence of modern irrigation systems.

The average cost of constructing the ditches is $1,738 per mile and $6.40 per acre of land under ditch.

The average size of all farms, exclusive of those held by Indians, is 464 acres, and that of irrigated farms, 380 acres. The irrigated farms make greater use of the public domain for grazing purposes than do those which are unirrigated, and an income is thus secured in addition to that obtained directly from the land owned and leased.

Sufficient has been done in irrigation to demonstrate what might be, and eventually will be, accomplished. The irrigation works in the lower Pecos Valley are the largest in the United States. They have placed under ditch an area equal to the entire number of acres now under cultivation in the Territory; they have built cities and villages, turned a desert into a garden, and created millions of dollars of wealth where formerly there was but an unproductive waste; and yet this is only the beginning.

On the Maxwell land grant in Colfax County equal progress has been made in building irrigation works on scientific principles, and the results are similar to those achieved in the Pecos Valley. In San Juan County there are miles upon miles of irrigation canals, while many more miles are being added without exhausting the available water supply. For the Pueblo, as well as the Navaho Indians, the National Government is constructing such reservoirs and irrigation canals, and it will undertake the same work in the near future for farmers who are not wards of the United States. In the Rio Grande Valley and the valleys of its tributaries and along every stream and river are irrigation systems, some of them primitive and wasteful, it is true, and sooner or later to be supplanted by scientific irrigation,

yet sufficient to demonstrate that this is first of all an agricultural Commonwealth. It was the first to practice irrigation and will be the greatest beneficiary eventually under the reclamation policy of the National Government.

But New Mexico does not depend altogether upon water from flowing streams or stored flood waters for the moisture to raise crops. Besides a number of valleys and mesas, where the rainfall is sufficient to raise crops, there are artesian areas, developed to their greatest extent in Chaves and Eddy counties, where there are scores of flowing wells, but existing also in Colfax County and about to be developed in other sections. Besides flowing wells, there are inexhaustible wells in which the water does not rise quite to the surface, such as in the Estancia Valley in Torrance County, in the Mimbres Valley in Luna, in Roosevelt, and other counties. There is a great underground flow in nearly every river valley, which is available by pumping. Experiments successfully conducted at the agricultural experiment station at Mesilla Park have demonstrated that water sufficient for irrigation purposes can be raised with a gasoline pump at a maximum cost of from 51 to 54 cents an acre, the well being 48 feet deep. When it is considered that in India 6,000,000 acres are irrigated from wells by pumping, it can be seen what a future there is for New Mexico in agricultural development alone.

In Roosevelt County, in Quay County, on Johnson's Mesa, on the Barela Mesa, in the White, Sacramento, and Pecos mountains, thousands of acres are under cultivation depending upon the annual rainfall. It has been demonstrated that the real difficulty in the arid region is not a lack of rainfall, but the loss of too much water by evaporation, and this can be properly controlled by cultivation, especially by the Campbell method of soil culture. It has been proven by careful laboratory and field work that 8 inches of rainfall are sufficient to grow good crops, providing the water is all utilized. The average rainfall for New Mexico is twice as much, and in portions three times as much. A description of such a dry-culture farm north of Alamogordo, in the most arid portion of the Territory, gives an idea of the practicability of raising crops without irrigation in the arid region. It says:

> It is the cleanest, neatest ranch conceivable. The weeds lining every irrigating ditch and in every irrigated field are conspicuous by their absence. The intense dark green foliage of the trees strikes one's attention upon approach, and the evidence of thrift and health in every growing thing is so convincing that one is utterly confounded. All the preconceived notions as to the absolute necessity for abundant water to raise a crop in New Mexico are swept away at a glance. One who has seen thousands of dollars expended to bring a small stream of water for a few miles to develop a little ranch is dumfounded to see the desert blossom as the rose under simply the magic touch of labor in common methods of good farming.
>
> It is only four years since the first lick was struck on this desert farm. Several acres of land were cleared of sagebrush and, after cropping to corn or small grain, fruit trees were planted. Many of these are bearing this year. It will pay one to visit this ranch to see what can be done without irrigation. One will find there a thriving crop of barley, corn, rye—six feet tall—all kinds of garden truck, and trees of many varieties. There are large cottonwoods, and fruit trees loaded with blossoms and fruit. Apricots, pears, peaches, plums, walnuts, apples, grapes, blackberries, rhubarb, and all growing well by the simplest method of cultivating throughout the summer. Dry as it was last year none were lost. Good corn has been raised, and the returns for this season certainly will be up in the hundreds of dollars.

FOREST RESERVES.

The Department of Agriculture has established four forest reserves in New Mexico to conserve the headwaters of its largest streams. These are the Pecos, the Gila, the Lincoln, and the Jemez reserves. Lands have been withdrawn for the establishment of one more reserve, the Burro Mountain reserve, while the area of both the Pecos and the Gila reserves have been enlarged. About 6,000,000 acres, mostly mountain and forest, are included in these reserves, although they also contain agricultural, mineral, and grazing lands. Permits for grazing cattle and sheep and, in some instances, goats upon these reserves are granted by the Department of Agriculture upon application and upon the payment of a small head fee. These reserves are also natural game preserves and contain many fine trout streams. They are coming into favor as summer resorts and are of inestimable benefit to the Territory, both for the conservation of waters and the preservation of timber and game.

THE INDIANS.

There are 13,000 Indians in the Territory, 9,000 of them Pueblo, or town Indians. Of the others, the Jicarilla Apaches number 800 and occupy a reservation in Rio Arriba County. The Mescalero Apaches number 450 and occupy a reservation in Otero County. The Navaho number about 3,000 in New Mexico and occupy a reservation in the northwestern part. The Pueblo have reservations of their own and are the most advanced of all Indian tribes, being husbandmen and self-supporting. The Apaches and Navaho have made considerable advance in civilization and till the soil or are owners of herds of cattle, sheep, and goats. Some of them find employment as section men on the railroads or work in the sugar-beet fields of Colorado. They are law-abiding and send their children to the reservation or training schools provided by the Indian Office.

PART III.—CLIMATE, HEALTH, AND TOURISTS.

"Climate is fate!" exclaimed Helen Hunt Jackson when racked with pain and in the grasp of the insidious destroyer, consumption. She sought the climate of California and of Colorado and was much benefited. Had she sought the climate of New Mexico perhaps she might have lived another decade and have given the world another Ramona. Thousands have risen to bless the sunshine, the invigorating and dry air of New Mexico, and thousand have died because they knew not of it or came too late to be restored.

As the altitude gradually declines from 8,000 feet in the north to 3,000 feet in the south the climate is modified as far as the mean annual temperature is concerned, but otherwise it is the same in the north as in the south, the sharp winter winds of the north being tempered by the warm sunshine and dry air, and the higher temperature of the south being moderated by the altitude, the dry air, and the invariably cool nights. There is no other Commonwealth, not even Colorado, with its high winds and greater annual precipitation, nor Arizona, with its hot dust storms and great variations in daily temperature, although both possess a fine climate that is a specific

for lung trouble, that can compare its climatic advantages with those of New Mexico. The Territory until recently knew of no cases of native consumption, and in the higher altitudes and in certain localities of no enteric diseases, no malaria, no diphtheria, no croup, no mosquitoes, no blizzards, no oppressive summer days or nights. At Santa Fe in winter, on sunny days, the temperature runs from 50° to 80°, and in summer the shade temperature never exceeds 90°, except once or twice in a decade, 97° being the highest temperature on record in thirty years. Even a temperature of 97°, on account of the great dryness of the atmosphere and the invariably cool summer nights, is not as oppressive as a maximum temperature of 80° at Chicago or New York. At Carlsbad and Las Cruces the mean temperature for January is 42°, and in July a little less than 80°, giving the extremes of the mean temperatures for the year in southern New Mexico.

The days of sunshine in every year average from 300 to 320, partly cloudy days from 25 to 45, and cloudy days from 20 to 30, there being more cloudy days in summer than in winter; and no other Commonwealth in the United States has an average sunshine record equal to that of New Mexico, which, for that reason, is known as the "Sunshine Territory." The year 1904 was by no means a favorable one as far as climate goes, yet the official record of the United States Weather Bureau at Santa Fe shows that there were only 16 cloudy days during the entire year. The sunshine averaged 80 per cent of the total possible amount, or a total of 3,554 hours, almost 10 hours of sunshine every day—spring, summer, fall, and winter. In the month of January, when most needed, the sunshine percentage reached its maximum, 93 per cent. In November, another cool month, it was 92 per cent. In August, when cloudiness is grateful, the minimum was recorded, 69 per cent. These are official statistics of the United States Weather Bureau and not manufactured to bolster up claims to superiority of climate which facts will not sustain. These same records show that the precipitation during the year was 14.19 inches, nearly 12 inches occurring during the months from June to October, inclusive, while during the other seven months it did not amount to 3 inches. The wind movement during the year averaged less than 7½ miles an hour, while the maximum velocity recorded was 46 miles an hour, and there was but one other record of a velocity greater than 40 miles an hour.

The relative humidity, an important factor of salubriousness, reached only 42 per cent. The highest monthly average was 61 per cent, caused by unusually heavy rains on a few days in October. In April of 1904 the remarkably low average of 28 per cent was recorded. Not a single fog was observed at Santa Fe during the year. The temperature at Santa Fe averaged 49.3°, which, according to a carefully considered formula of the United States meteorological service, is equal to 65.4° at sea level. The coldest month was January, with an average of 27.4°, but an average in the sun of 59°. The warmest month was July, with an average of 69°. The highest temperature recorded was 86°, on July 10. The lowest was zero, on December 27, The mean daily range in temperature was only 22.1°, while the greatest daily range recorded was only 35°. This equability in the temperature is a great factor in the comfort of health seekers and well

persons, and helps to make Santa Fe the greatest climatic summer and winter resort on the Western Continent.

It has been stated by medical writers that tuberculosis can be treated successfully in any climate. All experience is against such a conclusion. It has been demonstrated beyond question that certain sections of the United States possess climatic characteristics which are peculiarly adapted to the successful management of the disease. The so-called arid regions of the great Southwest, which comprise portions of southern Colorado, all of New Mexico and Arizona, together with that part of western Texas known as the "Llano Estacado," may be included in this favored section. The vast and salubrious stretch of country, which is so many times alluded to as a "land of sage, sagebrush, and cacti," possesses in an almost unlimited degree those very elements which observation has proved to be of the utmost value in the treatment of tuberculosis.

Where medicines have failed the elements are succeeding. A pure atmosphere, containing an abundance of oxygen and electricity, in conjunction with a large amount of sunshine, is to-day fulfilling in an eminently satisfactory manner the mission heretofore mapped out for such agents as cod-liver oil, creosote, and the various poisonous concoctions known as serums.

The importance of climate as a factor in the treatment of pulmonary tuberculosis is daily manifesting more and more its value, whether taken separately or coupled with the various plans of therapy now advocated and employed in this important branch of practice. Physicians are informing themselves more widely upon this vital question, and the experiences gained by the practitioner living amidst such ideal climatic conditions as exist in New Mexico are being looked upon with more interest and kindly consideration than heretofore has been accorded them.

The consensus of opinion as expressed by the leading authorities on tuberculosis at the International Congress held at Moscow, Russia, a few years ago, and later at London, England; Madrid, Spain, at Atlanta, Ga., and at Paris this year was in favor of the climatic treatment of pulmonary tuberculosis over all other methods considered.

The southwestern section of the United States has thousands of residents who came as tuberculosis patients, some of them as long as twenty-five years ago. They are to-day and have been for many years in good health, have married and reared children, who are, to all appearances, absolutely free from tubercular disease.

Animals, as well as the human race, are likewise remarkably free from tuberculosis in this region, as has been shown by the researches of Herrera and Lopez in Mexico, where the climatic conditions are practically similar to those existing in New Mexico. These investigators report that they have found but 45 cases of tuberculosis in cattle out of 73,000 killed and examined at the Government abattoir in the City of Mexico.

It may be stated in a general way that all specific plans of therapeutic treatment thus far suggested for the cure of tuberculosis, and especially of the pulmonary form, have failed, so that one must look to nature rather than to the laboratory for the weapons to combat this enemy of the race.

The early diagnosis of pulmonary tuberculosis is of the utmost importance, for it is in the beginning of the disease that the greatest

benefit is derived in the largest proportion of cases from the climate or the out-of-door plan of treatment.

New Mexico is essentially a "land of sunshine and blue skies." Here there is a dry and bracing climate, with no extreme heat or cold, a climate which, for the most part, admits of an existence out of doors almost all the year round. It is these qualities of air and sky that have caused this favored region to be known to-day over the entire civilized world as the "land of sunshine." The peculiar adaptability of such a climate to the successful management of consumption and other diseases of the lungs and respiratory tracts is causing invalids to flock here in great numbers, experience and observation having demonstrated beyond further question the fact that the seacoast resorts have proved dismal failures in exercising either a corrective or retarding influence upon the diseases mentioned above.

The past few years the medical profession, as well as the laity, have been made aware, through various channels, of the vastly superior climatic conditions existing throughout the Territory of New Mexico, and patients are seeking relief here by the hundred where formerly they came only by the score.

The famous Doctor Osler, recently much in the public eye, says:

> The requirements of a suitable climate are a pure atmosphere, an equable temperature not subject to rapid variations, and a maximum amount of sunshine.

Given these factors, and it makes little difference where a patient goes, as long as he lives an outdoor life. The purity of the atmosphere is the first consideration, and it is this requirement that is met so well in the mountains and the forests of New Mexico.

The problem of the prevention of the further spread of tuberculosis and its ultimate and complete eradication from the human race will be solved when physicians realize the importance of at once placing the patient suffering from or threatened with this disease in a suitable climate. Children inheriting this peculiar condition of the cellular structures and cell elements known as a "tubercular tendency" will develop, in a favorable climate, a cell antagonism to the disease which can never be acquired in a climate where tubercular diseases are more common and one which favors the causes that lead to tubercular disease.

It is generally conceded by writers upon bacteriology that climatic conditions play a most conspicuous part in both the development and retardation of microbic life. Epidemic diseases which have for their vehicles certain conditions of the atmosphere, such as heat and moisture, constantly demonstrate their power of spreading contagion, the moisture contained in the air being the chief factor of preserving the vitality of the germ.

To anyone familiar with the extreme climatic difference between the Atlantic Coast States and the Southwest the great rôle played by the climate in each locality named will at once become strikingly apparent. Epidemics, such as grippe, so fatal and destructive in their train of sequelæ, are little known in New Mexico. This is rather remarkable, in view of the fact that the majority of the people live in a simple and unpretentious state, scarcely ever employing any modern sanitary precautions to guard against epidemic invasions. The climatic conditions existing throughout the Territory, and in the mountain regions more especially, the rarity and

purity of the atmosphere, together with the almost constant direct rays of the sun, are the most powerful bactericides known to science to-day. A climate where discarded animal and vegetable substances undergo prompt and rapid desiccation after brief exposure to the atmosphere, with but little manifestation of decomposition, argues most strongly against bacterial development. The tuberculosis bacilli lose their infective power in a very short time after exposure to the sun's rays in the arid atmosphere. This clearly explains the curative effect of climate upon pulmonary tuberculosis. Constant inhalation of what may be properly termed "an aseptic atmosphere," in time brings about in the pulmonary tissues inflamed by tuberculous deposits that very desiccation effected upon animal and vegetable substances exposed directly to the air.

Although there are many invalids, principally persons with tuberculosis, there is not a case of tuberculosis on record in New Mexico that was communicated from the diseased to the healthy through the medium of the atmosphere. That the native people of this section experience such wonderful immunity from tuberculosis, especially of the respiratory tract, must have its explanation in the very favorable climatic conditions surrounding.

In order to derive all possible benefit from such a climate as that of New Mexico the health seeker should live out of doors. If he has the strength to get about at all, the best he can do is to go into the pine forests and camp out. The nomadic life of the tent dweller is the best treatment for incipient pulmonary tuberculosis. It is often a grave mistake for an invalid to seek a change of climate in a place where he has no friends, no occupation, nothing to distract his mind from himself and his malady. In a few months he exhausts the possibilities of mere curious interest in unfamiliar surroundings, and then he strolls about alone or with chance acquaintances until he becomes weary of the town and the monotony of his existence. Homesickness ensues, the mental disease sometimes counterbalancing the climatic benefit, and the health seeker in desperation returns to his home, preferring the certainty of death among friends to the possibility of a prolonged existence under unsupportable conditions. If such a health seeker could procure a saddle horse, pack animals, and a camp outfit and go into the mountains with a good guide and agreeable companions, he would find no monotony and no homesickness, but would gain strength and buoyancy of spirit and never know a dull hour. A year of out-of-door life in the dry, bracing air of New Mexico will arrest many a case of incipient pulmonary tuberculosis, if the sufferer has the necessary strength and vitality to begin such a course of treatment and takes ordinary precautions against undue exposure and overexertion.

Recognizing the superior climatic advantages of New Mexico for the treatment of diseases of the respiratory system, the United States Government has established and now has in successful operation two large sanitariums, one operated under the auspices of the War Department and the other under the United States Marine-Hospital Service.

The action of the Government in establishing its great sanitariums for the treatment of consumption in New Mexico is a far greater and stronger eulogy on the climatic advantages of this Territory than anything that can be said or written upon the subject.

Since the establishment six years ago of the two Government sanitariums, one at Fort Bayard and the other at Fort Stanton, hundreds of soldiers and sailors, afflicted with tuberculosis, have been cured by the climatic treatment, which is the chief feature of both of these establishments. Liberal appropriations have been made by the National Government for enlarging and improving both of these institutions, and they are destined to make a record in the future by the large and increasing per cent of cures they are effecting. Fresh air in abundance, both night and day, is the first and most important factor in the treatment. Coupled with this are sunshine, healthful and abundant diet, moderate exercise, amusements, and recreations of a suitable character. This constitutes the plan followed at both places, and they are proving each day the immense advantages they possess over the old methods of treatment.

Another triumph for New Mexico climate as a factor in the cure of consumption was achieved when, in the early summer of 1905, the representatives of the Associated Fraternities of the United States, after a searching and personal investigation of the climatic features of the Southwest, selected Las Vegas Hot Springs for the site of the Fraternal Sanitarium for the cure of consumption. The leading fraternal organizations of the United States have promised their aid, and it is planned ultimately to take care of thousands of health seekers at this sanitarium, which will be conducted upon the cottage, tent, and outdoor plan. Almost $1,000,000 worth of land and buildings have been acquired for that purpose and the results promised would have been deemed impossible a few years ago.

Private sanitariums are being established, and this is a sure indication that at last capitalists as well as scientific men are beginning to admit in a practical way that New Mexico has great possibilities in this respect.

At Santa Fe, Albuquerque, Las Vegas, Silver City, Lascruces, and other points are now in successful operation excellent sanitariums conducted by private individuals. Add to these the various mountain resorts and springs where camp life is a feature, it will be readily seen that at the present time much excellent provision is already made for health seekers, whereas only a few years ago everything of this kind was extremely crude. Special attention is given at all these places to making the dietary varied and wholesome. This, with abundant sunshine and pure mountain spring water, constitutes a trinity hard to surpass in the treatment of consumption.

"Sunmount," beautifully situated in the foothills east and south of Santa Fe, is the pioneer tent city of this region and the most important. Great care in the selection of the site has repaid the managers, as the demand for accommodations increases daily. The "Holmes sanitary tent" is in use there, and its construction is so ideal for the purpose that it permits of a comfortable life in the open air during the entire year. Grand scenery, constant sunshine, pure water from mountain springs, a generous cuisine, competent medical supervision, trees with health-giving properties, like the spruce, cedar, pine, and the Australian red gum, or eucalyptus, together with the altitude of 7,000 feet, and the pure mountain air form a strong combination of health and life giving elements not to be found elsewhere perhaps on the continent. "Sunmount" is surely destined to become the most noted health and pleasure resort in the entire southwestern country. A common mistake about this country is that it is a very expensive

place to live in. At "Sunmount" excellent tents comfortably furnished are to be had at $10 and $15 per month.

Charles E. Linney, director of the United States weather bureau at Santa Fe, speaks as follows of the New Mexico climate:

It is easy to say that the climate of this or that place is the finest in the world; it is less easy to show reliable facts and figures to bear out the statement, and it is least easy to convince the self-satisfied public that some other spot can be or is the more favored. Facts, however, if they are facts, should be given credence.

It is with these barriers in view that a few facts (and simple figures) regarding the climate of central and northern New Mexico are presented, this vast empire being in many respects nicely typified by Santa Fe, local contour, latitude, and altitude being considered.

Discarding fractional finesse, the annual mean temperature of Santa Fe (obtained from thirty-three years of carefully compiled records by the United States Weather Bureau) is 40°, a degree higher than that of Chicago, the same as that of Boston, a degree lower than Denver, 6° cooler than Asheville, N. C. (which is in the same altitude), 7° cooler than St. Louis, and 20° cooler than Jacksonville. This comfortable average, too, is the result of balancing 29°, the coldest month (January), with 69°, the warmest month (July). In thirty-one years the temperature has never risen to 100°, the highest record being 97° in the month of August, 1878, and since the following year it has not touched 95°. The average number of days each year with 90° or higher is but two. The average daily maximum temperature (afternoon reading) of the warmest month (July) is but 81°, while the average night temperature of this month is but 57°, a summer temperature far more comfortable than that of St. Louis, Washington, New York, Boston, Chicago, Denver, or St. Paul, and only approached by the cities that nestle beside the cool waters of Lake Superior.

On the other hand, winter is not bleak and cold. The average winter temperature is 31°, just below the freezing point. The temperature of the night falls to or below freezing a little over one hundred times each year, while zero temperatures are rarely recorded. The lowest actual record is 13° below zero in December, 1879, and in January, 1883. Many winters pass without a record of zero temperature.

The annual precipitation (including rain, snow, sleet, and hail) is 14.3 inches; Denver, the same; Chicago, 34.8; St. Louis, 41.1; Asheville, 42.5; Washington, 44.8; Boston, 45, and Jacksonville, 54.1 inches. While the rainfall is low, it should be borne in mind that 62 per cent of the amount occurs in the spring and summer months, leaving the fall and winter months dry and invigorating. July is the wettest month, averaging 2.8 inches, while but 0.7 inch (or less) are measured in November, December, January, February, and March. The average number of days with 0.01 inch or more of precipitation is 81, against 111 at St. Louis, 120 at Chicago, 121 at Boston, 122 at Washington, and 127 at Jacksonville. These figures for Santa Fe, however, do not represent days with continuous rain, but rather days with showers of short duration, for a day with continuous rain is practically unknown.

The sunshine of Santa Fe is proverbial. There is annually recorded 76 per cent of the possible amount, against 69 per cent at Denver, 65 per cent at St. Louis, 59 per cent at Washington, 54 per cent at Boston, and 53 per cent at Chicago. With all of these cities, excepting only Denver, the greatest amount of sunshine occurs in summer, while here the highest percentage is in the fall, spring, and winter in the order named. Expressed differently, this means that there is a partial veiling of the sun's rays during the heat of the summer, but a full and free bestowal of its glorious rays during the remaining nine months of the year. Occasionally the amount of sunshine reaches the marvelous total of 93 per cent of the possible 100 per cent (June, 1902), and it has never fallen below 55 per cent (January, 1898). In actual hours of sunshine the record averages 3,352 hours in a year, 9.2 hours for each day.

The average relative humidity is slightly below 46 per cent. It is highest, slightly below 55 per cent, in January, and lowest, 33 per cent, in June. The annual relative humidity at Denver is 50 per cent; at St. Louis, 70 per cent; at Boston, 72 per cent; at Washington, 73 per cent; at Chicago, 77 per cent, and at Jacksonville, 80 per cent. For the warmest months of the year—June, July, August, and September—the average at St. Louis is 66 per cent; Chicago and Boston, 74 per cent; Washington, 75 per cent, and Jacksonville, 82 per cent; in other words, the humidity during the heat of the summer in the eastern cities

is considerably greater than the annual average, while just the opposite condition prevails in Santa Fe, where it is a dry heat, thus always free from enervating effects.

The average hourly wind movement is low (6.9 miles per hour), and it is rare indeed that a storm velocity (40 miles an hour or higher) is attained, there being but 37 such records in twenty-one years. There is no record of the wind ever having attained a velocity of 60 miles an hour at Santa Fe.

Summarized, the climate may be described as one that is mild and equable, much given to sunshine, free from great heat, high winds, humidity, and debilitating effects so noticeable in the central and eastern cities, free also from the cold and snow and storm of other northern cities, a climate of clear skies, small rainfall, few storms and those of short duration, one which is usually warm in the sun in winter and cool in the shade in summer.

MINERAL AND HOT SPRINGS.

New Mexico is not only blessed with a climate that is a boon to health seekers, but it also possesses mineral and hot springs whose waters have curative powers that are wonderful.

Among the hot springs which ought to rank with the most remarkable in the United States are those at Ojo Caliente, Taos County, north of Santa Fe, and 6,290 feet above the sea level. There are four of these springs in a small area, each one peculiarly adapted for the cure of particular diseases. The dissolving power of their waters is very great, and they are especially recommended by physicians for rheumatism, gravel and other calcareous affections, gout, and other kidney, stomach, and blood disorders. The temperature of the springs varies from 90° to 122° F., and the largest is classed as a chalybeate spring, as it carries a large amount of iron carbonate. Its waters contain 1.68684 grains of alkaline salts to the gallon and no organic matter. The fourth spring of the group pours forth lithia waters. The combined flow of these springs is 300,000 gallons in twenty-four hours. Ojo Caliente is reached by a short stage ride from Barranca, on the Santa Fe-Antonito branch of the Denver and Rio Grande Railroad.

Owing to the volcanic nature of that part of Taos County it has other thermal springs, among the best in the Territory being those known as Wamsleys Hot Springs. They are located in a deep gorge of the Rio Grande on the road from the station of Tres Piedras, on the Denver and Rio Grande Railroad, to Taos. The water is lukewarm, and in that respect similar to another group of mineral springs, situated at Glenwoody, 18 miles below.

At Las Vegas Hot Springs, San Miguel County, 6,767 feet above the level of the sea, 6 miles from the city of Las Vegas, is a group of hot springs whose waters resemble those at the famous hot springs at Teplitz, Austria, although their two chief active constituents, carbonate and sulphate of sodium, recall the waters of Carlsbad. There are 40 of these springs. The waters from the different springs vary in temperature from 75° to 144° F. Their character is mostly alkaline-saline, although they vary from saline to lithia and sulphur. They are especially potent in stomach disorders, intestinal and liver troubles, kidney disease, gout, diabetes, and kindred ailments. Mud baths and poultices, for swollen joints due to gout and rheumatic affections, from the black tenacious mud about the springs, prove very efficacious. The water is conveyed by pipes into the bath houses and natatorium. Adjoining the springs is the palatial Montezuma

Hotel, which will be the headquarters for the fraternal sanitarium for consumptives, which also has control of the springs and bath houses. The springs are reached from Las Vegas by electric railroad and are located on the famous scenic highway that is partly completed between Santa Fe and Las Vegas.

There are two groups of fine medicinal springs less than 50 miles directly west of the city of Santa Fe, in the Valles Mountains, and they are counted among the most efficacious mineral waters to be found in the Rocky Mountains. They are situated in the picturesque San Diego Canyon, in Sandoval County, and are known as the Jemez and the Sulphurs, or the upper and lower Jemez Springs. The lower group embraces 10 springs varying in temperature from 94° to 168° F. The temperature of the hottest of these is the highest of any spring in the Territory. Their altitude is 6,620 feet. The water of the hottest and largest spring runs about 50 gallons per minute, with escaping carbonic-acid gases and depositing white carbonate of lime. One spring, with waters of 103° F., carries free carbonic-acid gas, and its deposits are reddish brown. A third spring of 119° F. is impregnated with sulphuretted hydrogen and iron. The other springs of the lower group are impregnated with sodium, lime, and magnesia. Their solid constituents are about 0.24 per 100 parts of water.

The upper springs, or Sulphurs, are situated 2 miles above the lower group, at an altitude of 6,740 feet, and their temperature varies from 70° to 105° F. They flow from caves of lime forming a ridge 30 feet high and 200 feet long and varying in size from a few inches to 20 feet in height. The waters are strongly impregnated with sulphur and resemble those of Marienbad. The springs are both mud and vapor, and their principal constituents are chloride of sodium, sulphate and carbonates of soda, lime, and magnesia. They are especially potent in rheumatic and syphilitic disorders. Their solid constituents are 0.3726 to every 100 parts of water. Hotel accommodations have been provided at both groups.

In the same part of the country is the San Ysidro mineral spring, near Jemez, whose waters are carbonated and carry 0.5632 part of solid in every 100 parts of water, mostly sodium chloride, sodium sulphate, calcium carbonate, magnesium carbonate, iron carbonate, with traces of silica, potassa, and lithia.

Four to 6 miles west of the sulphurs are the San Antonio springs, which resemble the Jemez springs and are equally efficacious in kidney and stomach disorders.

The mineral spring at Carlsbad, Eddy County, has the largest flow of any mineral spring in the Southwest. It is located 2 miles above the town. Its flow is about 5,500 gallons per minute, and its waters are of medicinal value in cases of kidney trouble and dyspepsia. The waters resemble those of the Friedrichshall Sprudel, at Carlsbad, Bohemia, they being aperient and alterative. The famous Austrian spring, however, is heavy in magnesium chloride and carries but a small amount of carbonate of lime, while the Carlsbad spring is destitute of the magnesium compound and is heavily impregnated with carbonate of lime. The solids amount to 155.25 grains to the gallon, consisting of over 50 grains of salt, 44 grains of Glauber's salts, 22 grains of Epsom salts, over 17 grains of sulphate of lime, and 14

grains of carbonate of lime, while silica, iron, alumina, and carbonate of magnesia exist in small quantities.

In the Rocky Arroyo, Eddy County, is a sulphur spring that carries 90.47 parts of solids in every 100,000 parts of water, and, besides the magnesium sulphate, is impregnated with carbonate of lime, sulphate of lime, sodium chloride, sodium sulphate, silica, and alumina.

The sulphur springs near the Bottomless Lakes, Chaves County, carry 2,518 parts of solid in every 100,000 parts of water, and the sulphur spring on the Berrendo River, in the same county, carries 297 parts of solid in every 100,000 parts of water, 148 parts being common salt, 72 parts calcium sulphate, 35 parts magnesium sulphate, 17 parts calcium carbonate, 5.5 parts silica, and 1 part alumina.

Penasco Spring, Chaves County, has faint traces of sulphureted hydrogen and is a good aperient, being impregnated with calcium sulphate, magnesium sulphate, calcium carbonate, sodium chloride, silica, and alumina.

The water of Water Grove Spring, on the San Juan Mesa, 60 miles north of Roswell, is described as truly wonderful by the chemists, who claim that it has no equal in New Mexico for the cure of gout and rheumatic affections. Its main constituent is sodium chloride and potassium sulphate, although it is also heavily impregnated with potassium carbonate, sodium chloride, calcium carbonate, magnesium carbonate, and shows traces of silica and alumina.

Excellent hotel accommodations have been provided at Faywood Springs, Grant County, 3 miles from Faywood station, on the Santa Fe Railway. The water is 142° F. and among the hottest in the Southwest. It is efficacious in cases of rheumatism, stomach and kidney troubles, and blood and skin diseases, resembling the waters of Carlsbad. The altitude is 5,782 feet. The spring flows from the top of a cone 40 feet high, which has been built by the solids in the water. The reservoir around the spring is 15 feet across and very deep. The water of the spring is alkaline, and it flows 6,000 gallons an hour. Each gallon has 39.59 grains of solids, soda predominating, the other constituents being carbonates, lime, sulphates, silica, chlorides, magnesia, potassa, iron, and alumina.

A group of hot springs 6 miles north of Faywood has a temperature of 150°.

Another group of hot springs is found in Grant County, at Ojo Caliente, on the Mimbres River, 15 miles north of Mimbres postoffice.

Commercially the Coyote mineral springs, 14 miles southeast of Albuquerque, in Coyote Canyon, at the foot of the Sandias, are perhaps best known in the Southwest, for 35,000 bottles of their water are annually exported. Their waters are mildly laxative and diuretic and are a specific in gout, rheumatism, dyspepsia, kidney, and liver troubles. There are three groups—the Harsch, the Chavez, and the Topham springs. In 100,000 parts of water of the Harsch iron spring there are about 180 parts of solid, chiefly sodium chloride, calcium carbonate, sodium carbonate, sodium sulphate, potassium sulphate, iron, silica, and alumina. The Cottontail Spring, of the same group, has only 147 parts of solids, the Chavez Spring 153 parts, and the Topham artesian spring only 88 parts. The last two named carry free carbonic-acid gas in quantity.

Whitcomb Springs are situated at the foot of the Sandias, in Tijeras Canyon, 18 miles east of Albuquerque. The water of these springs carries a little over 11 grains of solids to the gallon, the chief constituent being calcium carbonate.

On the Tejon grant, at the foot of the northern slope of the Sandia Mountains, are hot springs which have not been analyzed, but are reputed to be of great medicinal virtue.

Near Folsom, Union County, at an elevation of 6,500 feet, on the Colorado and Southern Railroad, are hot springs of great medicinal value. Near by is beautiful Mount Capulin, with one of the most perfectly formed craters to be found in the Southwest.

Four miles east of Santa Fe, in the foothills of the Sangre de Cristo Range and a few hundred yards from the scenic highway, are the Aztec mineral springs. Their principal constituents are calcium carbonate, magnesium sulphate, sodium sulphate, calcium sulphate, sodium chloride, and silica, while the water contains enough carbonic-acid gas to retain the carbonates of calcium and magnesium in solution as bicarbonates. Formerly these waters were bottled and a hotel was maintained at the springs, but of late they have been abandoned, owing to the removal of their owner.

At Las Palomas, in Sierra County, is a remarkable hot spring, cures almost miraculous having been effected by its waters in rheumatic affections. It is reached from Engle, on the Santa Fe line. The principal constituents are chlorides and magnesia, while the waters are impregnated to a lesser extent with lime, carbonates, soda, sulphates, potash, magnesia, and silica.

No county of the Territory contains as many hot springs as Taos. There is a good sulphur spring at Rio Pajarito with a temperature of 68°. The water contains carbonic acid, hydrogen, sulphide, sodium carbonate, sodium chloride, calcium, and magnesium carbonates.

At Ojo Sarco, on the Rio Grande, north of Santa Barbara, Taos County, is a fine group of mineral springs. In the same county, 3 miles north of Ojo Caliente, are soda springs. Five miles south of Taos, as well as between Penasco and Mora, on the Rio Pueblo, are sulphur springs of rare medicinal virtue.

Socorro County boasts of a large number of hot and mineral springs, the most noted being the Gila Hot Springs, situated on the upper Gila and Diamond Creek, in the southwestern part of the county. They carry 27 parts of solids in every 100,000 parts of water, the chief constituents being soda and potash carbonates, silica, sulphuric acid combined with lime and potash, and ferrous sulphate.

The city of Socorro is supplied with mineral water by its municipal waterworks. The water has a temperature of 93° F. and flows from the foot of the eastern slope of Socorro Mountain. The flow is 700,000 gallons every twenty-four hours. The waters are alkaline, the solids amounting to 17 grains per gallon, the chief constituents being potassium sulphate, sodium sulphate, calcium carbonate, silica, sodium chloride, and magnesium carbonate.

Other noted springs in Socorro County are found at Caballo, 5 miles from old Fort McRae. Their water is 136° F. On the San Francisco River in the southwestern part of the county are springs with water heated to 130°. Near the mouth of the Diamond Creek.

in the same part of the county, are springs of 151°. Four miles south of the Carrizo Valley is a group of soda springs, and near Cherryville and Canada Alamosa are the Ojo Caliente Springs, the waters of which are mineralized and have a temperature of 85°.

In Torrance County are alkaline springs, notably the Dog Lake Spring not far from Estancia, the waters of which are impregnated with 556 grains of magnesium sulphate, 437 grains of calcium sulphate, 65 grains of potassium sulphate, 36 grains of magnesium chloride, 1 grain of alumina, and 171 grains of volatile matter in every gallon.

Valencia County has its quota of hot and mineral springs. A saline soda spring is situated on the Antonio Sedillo grant, near the settlement of Quelites, on the northeast bank of the San Jose River. The water is tepid and is highly charged with carbon dioxide and carries considerable iron. The flow is small, however, and comes from the top of a mound reared by its mineral deposits. The water is especially beneficial in stomach and kindred ailments. It is impregnated with 1,563 grains of solid to every gallon. The chief constituents are sodium chloride, 768 grains; sodium sulphate, 561 grains; calcium carbonate, 138 grains; potassium chloride, 16 grains; sodium bicarbonate, 14 grains; magnesium, 57 grains; iron, 4 grains; silica, 2 grains, and traces of sodium bromide, sodium iodide, sodium borate, sodium phosphate, lithium, barium sulphate, alumina, and manganese.

Ten miles north of Coolidge, Valencia County, are the Stinking Springs, which are classed among the soda springs, although sulphureted. West of the Mesa Lucero, in the same county, are sulphur springs, while the springs at Ojo Caliente, 12 miles southwest of Zuni, have great repute among the Pueblo Indians for their medicinal virtues.

In McKinley County there are mineral springs 3 miles east of Gallup and another group 15 miles west of Fort Wingate, the latter being alkaline. The water of the Ojo Azufre, 20 miles west of Fort Wingate, are sulphureted.

There are mineral springs 18 miles east of Abiquiu, in Rio Arriba County, and soda springs 4 miles southeast of Petaca, in the same county. In the Chusca Valley, in that county, are sulphur springs, and warm springs have been located at the head of the San Diego Canyon, above the Jemez Springs.

Three miles northeast of Las Vegas, east of the Great Ranch, are alkaline and sulphureted springs, while 10 miles west of the Santa Fe are iron springs, claimed to equal in medicinal virtue those of Manitou, Colo.

On Salado Creek, 4 miles south of San Ysidro, Sandoval County, have been discovered soda springs, and a similar group is situated 13 miles northeast of Isleta, Bernalillo County.

This is only a list of the better known and most accessible of the hot and mineral springs in New Mexico, whose healing waters have stood the test of time. No matter to what point the health seeker goes—in the mountain, in the forest, on the plains—he is certain not to be far away from springs whose waters are healing or curative of many ailments to which the human flesh is heir. It is only at the more prominent springs, however, that ample hotel accommo-

dations have been provided, but the climate of every part of the Territory is such that tent life at or near any of the springs mentioned is practicable the year around. Waters not mineralized are rather the exception than the rule in the Territory, and therefore the pure drinking water furnished the city of Santa Fe or the soft water of the Estancia Springs are noteworthy. The water derived from the mountain streams, especially in the northern part of the Territory, is also very pure. Among the better known springs of pure water are Pattersons Springs, western Socorro County; Horse Springs, western Socorro County; Gallina Spring, in eastern Lincoln County; the Antelope and Buffalo springs, on the Estancia plains; Chico Springs, 20 miles from Maxwell City, Colfax County; Hermy Spring, on the Pecos Forest Reserve, on which, however, there are hundreds of other fine springs of pure water, and Gallo Spring at San Rafael, Valencia County.

OF INTEREST TO STUDENT AND TOURIST.

New Mexico is as rich in prehistoric ruins and remains as it is in historic monuments and present-day interest. The Pajarito Cliff Dwellers' Park, the Chaco Canyon, the Gila Canyon, western Valencia and Socorro counties, abound in cliff and communal buildings the age of which has puzzled scientists, but which are older than any other ruins on the American Continent and probably in the world. The most accessible cliff dwellers' region is the Pajarito Park, but one day's overland trip from Santa Fe or Espanola, in which 20,000 cliff dwellings and caves are situated within a comparatively small area. The scenery of this natural park is superb. "Wonderful" is the only adjective that will do justice to the caves in the cliffs, high and inaccessible almost as eagles' nests, but showing many other signs of occupation besides the peculiar picture writings in the soft volcanic tufa of which the cliffs are composed. In addition to the cliffs there are remains of communal buildings of later occupation, some of them containing as high as 1,200 rooms. There are also burial mounds with remains of ancient pottery. Along the eastern foot of this steep plateau flows the Rio Grande and lie the Indian villages of San Ildefonso, Santa Clara, and San Juan, while to the west rise the stupendous mountain masses of the Valles, the Cochiti, and Jemez ranges, with their deep forests and canyons, their famous hot springs, their Indian villages, and their mines.

Where else on earth is there so much of the beautiful in scenery, of romance, of historic monuments, of prehistoric remains, of the ancient, the unique, the picturesque, the sublime to be found as within a radius of 50 miles of Santa Fe? One day's trip will take the wanderer from the historic Old Palace and San Miguel Church, in the City of the Holy Faith, over the foothills of the Sangre de Cristo Range, from which rise in full view mountain peaks almost 13,000 feet high, into the picturesque Tesuque Valley and by the ancient Indian pueblo of Tesuque. The road winds through sand hills that the wind and the rain have cut into grotesque shapes, huge as Titans and weird as the rock formations in the Garden of the Gods. Then come once more fertile fields and the village of Cuymungue, formerly an Indian pueblo, now a native settlement. Along the Nambe River, with its grand falls, close by the Indian pueblo of Nambe, to the pueblo of San Ildefonso, on the Rio Grande, then along the river

through the laughing Espanola Valley, past the Black Mesa, a famous Indian battle ground, the large Indian pueblo of Santa Clara and its mission church, to Santa Cruz, also with a quaint and ancient church building, threads the wagon road across the river into Espanola. From there the road ascends the wildly beautiful Santa Clara Canyon, along a rippling trout stream, up to the steep cliffs of the Puye and the Shufinne, with their hundreds and thousands of prehistoric caves and communal buildings. And all that in one day's journey overland! If the trip be prolonged another day or two the remarkable hot springs at Ojo Caliente and the hot springs in the deep chasm of the Rio Grande at Wamsleys, the Indian pueblos of Picuris and Taos, the finest trout streams and the best haunts of wild game, or the Jicarilla Indian Reservation, as well as busy lumber and mining camps, can be visited. And that is only in one direction from Santa Fe. Going south, one day's trip will pass through the quaint settlements of Agua Fria, Cienega, and Cieneguilla, by the Tiffany turquois mines, the old mining camp of Bonanza, the smelter at Cerrillos, the Ortiz gold placers, worked a hundred years before gold was discovered in California and still yielding gold dust and nuggets, the coal mines at Madrid where bituminous and anthracite coal are mined from the same hillside, the placer and gold mines of Golden and San Pedro, not to speak of sheep and cattle ranches and the beautiful scenery of the Cerrillos, Ortiz, San Pedro, and Sandia mountains.

Another trip of one day from Santa Fe will take the traveler by the pueblo ruins on the Arroyo Hondo, over Apache Hill, the battle grounds of Apache Springs, the interesting native settlement of Canoncito, over Glorieta Pass and the battlefield of Glorieta to the upper Pecos River, by the ancient and historic Pecos Church ruins, the village of Pecos, and through the most beautiful summer-resort country in the Southwest, where trout streams babble in every canyon and where from one summit can be surveyed the hoary heads of ten of the twelve highest peaks in New Mexico. Another day's trip out of Santa Fe will take the visitor up the rugged Santa Fe Canyon, by the large reservoir and the Aztec mineral springs, to the scenic highway which crosses the Santa Fe Range into the upper Pecos Valley, and unfolds at every step new mountain views and panoramas that are magnificent beyond description. Nor do these trips exhaust the interesting points in and about Santa Fe. Almost every other town in the Territory offers sights and scenes of equal importance to the tourist and sight-seer.

The prehistoric ruins of Chaco Canyon and Pueblo Bonito, in southeastern San Juan County, as well as those at Aztec, in the same county, are more fully excavated than those of the Pajarito Park and in some respects are more palatial and more impressive. They can best be reached from Gallup or Thoreau, on the Santa Fe Pacific Railway, in McKinley County.

The prehistoric ruins on the Gila Forest Reserve, as well as those in western Valencia and Socorro counties, have not been thoroughly explored thus far, being distant from the highways of travel, but on this very account they should have a special charm and attraction for the student of archæology.

Coming to more recent, although still ancient, days, the ruins of Gran Quivira and of near-by abandoned Pueblo villages, between the

Jumanas Mesa and the Mal Pais and Jornado del Muerto, are of great human and historic interest. They are best reached from the station of Willard, at the junction of the Santa Fe Central and the New Mexico Eastern railways. Similar ruins are found in western Valencia, Socorro, and other counties, and divide the interest of the tourist with the many present-day Indian pueblos and Spanish settlements, all boasting of considerable antiquity. The Zuñi, Navaho, Jicarilla, and Mescalero Indian reservations are well worthy a visit, and upon the first two named are many prehistoric ruins.

Foremost in interest and value in historic archæology are the old mission churches of the Franciscans. In every occupied Indian pueblo and upon the site of almost every abandoned pueblo there is one of the monuments of those pioneers of Christianity and civilization, the Franciscan Fathers. Many of these are in a good state of preservation, while others are in ruins, but every one is an object of historic interest.

The old mission church of San Diego, which is the oldest of the California missions, was founded in 1769. It is almost a total ruin; only the front remains in a good state of preservation. The side walls are still standing, but no portions of the roof or interior remain. This is the most venerable and venerated historic monument in the State of California and is annually visited by thousands of tourists. It has stood for one hundred and sixty-four years. It marks the beginning of civilization and Christianity in California, and yet in New Mexico, on the upper Pecos, 35 miles west of Las Vegas, at the site of the abandoned pueblo of Cicuye, are the ruins of the old Pecos Church. The church is three hundred years old. It was nearly one hundred and fifty years old when the San Diego Mission was founded. It was projected before the Spanish armada was destroyed and antedates the coming of the *Mayflower* and the settlement of Jamestown. All that is said of the old Pecos Church may be said of that of Jemez. They were built at the same time. The one at Quivira was founded in 1630, and is a fairly well-preserved ruin. The churches at San Ildefonso and Santa Clara are in a complete state of preservation. They are nine years older than the oldest of the California ruins. The old San Miguel Mission in Santa Fe has been rebuilt. Its walls date from 1650; the roof from 1694, or possibly a few years later. From the old church at Algodones was taken a bell cast in Spain in 1355, and at the cathedral at Santa Fe and other churches are ancient relics and art treasures of old Spanish and Italian masters.

These are only a few examples selected at random from the large number of ancient churches of equally great interest scattered over New Mexico. Inscription Rock, near Zuni, and every one of the pueblos from Taos on the north to Isleta on the south, and from the Rio Grande pueblos in the central part to Zuni in the west, are worthy of a visit both for historic and present-day interest.

Nor is there any other building in this country to compare in historic interest with the Old Palace at Santa Fe, which has been more to New Mexico than Faneuil Hall to Massachusetts or Liberty Hall to Pennsylvania, nor is there any other town in the United States which offers so much of interest to the tourist as the city of St. Francis de Assisi.

SCENIC WONDERS.

In addition to its manifold sights of prehistoric, historic, and archæological interest; New Mexico possesses many scenic attractions. Its mountains equal the Alps in ruggedness and height; its valleys, lakes, streams, and waterfalls have a picturesqueness of their own; its forests, such as are included in the Pecos and other forest reserves, offer sylvan retreats of rare beauty; its mesas and plains are not without their attractions, and a visit to its old settlements, as well as to the Indian pueblos and the Indian reservations, is well worth many miles of travel, even from the scenic standpoint alone.

The scenic highway that is being built between Santa Fe and Las Vegas, through the Pecos Forest Reserve and over the highest and steepest divides of the Sangre de Cristo Range, opens to the traveling public as beautiful scenery as any in the world. The Sacramento Mountain Railway in Otero County is an engineering wonder that brings travelers from all parts of the United States. The Gran Quivira ruins, the salt lakes, the white sands, Inscription Rock, the Mal Pais, the Jornado del Muerto, the Guadalupe caves, possess a weirdness or a picturesqueness that has made them world famous. New Mexico's hot springs, mountain and summer resorts combine many advantages and attractions difficult to find anywhere else. New Mexico has an atmosphere and color of its own, just as Spain, Italy, or Greece. Here the civilization of centuries ago and of to-day meet; here are found prehistoric ruins and historic monuments; the history of yesterday and of to-day have left their impress side by side; the civilization of the Indian, the Spaniard, the Mexican, and the Yankee commingle. Still, New Mexico is strictly up-to-date in its government, in its hotels, railroad accommodations, in the protection the law affords, in its universities, its colleges, its public schools, its sanitariums, its charitable institutions, in its progress, and in its prosperity. Churches are found in every settlement, newspapers in every town, together with fine stores, banking institutions, and every safety, comfort, and luxury that the centers of civilization of the

PART IV.—INDUSTRIES.

The up-to-date New Mexico farmer is the aristocrat of his craft. With 20 or 30 acres of fertile land and ample irrigation rights he is independent. If his ranch is well located he fears neither excessive moisture nor drought, neither hard times nor panics. There is always a good market in which his products command top prices, and as to crop failure, it is out of the question if he knows his business.

New Mexico is attracting more attention to-day than at any former time on account of its agricultural possibilities. Home seekers are coming to the Territory in great numbers, taking up or purchasing large areas of land in valleys or on the mesas, and building new agricultural communities of considerable importance.

Forty-one per cent of the people in the Territory in gainful occupations are engaged in agricultural pursuits—quite a creditable showing. In the great agricultural State of Illinois, having a population of 2,804,040 engaged in gainful occupations, there are 862,781 persons, or only 31 per cent, as against 41 per cent in New Mexico, who are engaged in agricultural pursuits.

The area and valuation of farm lands and the value of farm property in New Mexico has materially increased since 1890, as is shown in the following table:

	1890.	1900.
Total number of farms	[a] 4,458	[b] 11,834
Acres in farms	782,882	5,130,878
Total value of farm property	$33,543,141	$53,737,824
Lands, fences, and buildings	$8,140,800	$20,888,814
Implements and machinery	$291,140	$1,151,610
Live stock on hand June 1	$25,111,202	$31,727,400

[a] Not less than 3 acres, reporting not less than $500 gross income.
[b] Not less than 3 acres, and reporting the sale of not less than $500 in produce.

To-day at least 50 per cent must be added for present-day valuations.

This shows that from 1890 to 1900 the number of farms increased 165 per cent, the area of farm lands 550 per cent, the total value of farm property 60 per cent, the value of lands with their improvements 156 per cent, the value of improvements and machinery 295 per cent, and the value of live stock 26 per cent. These figures give an idea of the rapid development, and they are also indicative of what may be expected in the future. Another matter that is well worthy of record here is the fact that the producing capabilities per capita of those engaged in agricultural pursuits have increased amazingly. The annual value of farm products increased in the ten years 1890 to 1900 from nearly $2,000,000 to a little over $10,000,000, or an increase of 400 per cent in the ten years, while the agricultural population has not increased 100 per cent.

The following table, taken from the Twelfth United States Census, will give some idea of the importance of several of the leading New Mexico crops during the census year of 1900:

	Value.	Acres.	Bushels.
Total cereals	$1,077,377	96,210	----------
Corn	519,936	41,345	677,305
Wheat	390,616	37,907	603,303
Oats	154,347	15,848	342,777
Barley	12,475	1,110	23,107
Hay and forage	1,427,317	87,458	----------
Beans	73,001	3,349	----------
Peas	20,365	2,220	----------
Sugar beets	16,859	1,298	----------
Irish potatoes	49,552	1,122	72,613
Sweet potatoes	4,588	47	6,180
Orchard products	197,331	----------	----------
Flowers and plants	5,300	11	----------
Nurseries	4,343	22	----------
Vegetables	278,413	6,501	----------
Not classified	33,717	----------	----------

WHERE AGRICULTURE CAN BE PURSUED SUCCESSFULLY.

There are many thousands of acres in New Mexico, aside from those already in use, which can be utilized for agricultural and horticultural purposes. The portions of the Territory which are best suited to cultivation are the river bottoms or valleys and the smaller valleys along the mountain streams. There are also large areas, commonly known as the mesas or uplands, which have the finest soil and

which would produce good crops. The largest agricultural and horticultural districts are the Rio Grande Valley, extending from Embudo to the Texas line, taking in portions of the counties of Rio Arriba, Santa Fe, Sandoval, Bernalillo, Valencia, Socorro, Sierra, and Donna Ana; the Pecos Valley in San Miguel, Guadalupe, Chaves, and Eddy counties, the Animas and the San Juan valleys in San Juan County, and the Mimbres Valley in Grant County. Other notable but smaller sections are found in the counties of Colfax, Otero, Lincoln, Rio Arriba, Taos, Mora, and San Miguel. Their altitude ranges from 3,000 to 7,500 feet.

The soil varies from a sandy loam to a heavy clay, and is ordinarily fertile enough to produce good crops if water is obtainable for irrigation, or under the Campbell method of soil culture. Its fertility is demonstrated by the rank and rapid growth of trees and plants.

Since New Mexico lies in the arid zone the rainfall, being insufficient, can not be depended upon for the growing of fruits and vegetables except by special methods of cultivation, which can be employed profitably only in certain localities. Occasionally in the mountain districts, where the rainfall is more abundant and the humidity greater, some crops of fruits and vegetables are grown without irrigation, but one should not depend altogether on this. However, by irrigation, other things being equal, the largest crops of excellent quality can be grown, and the danger from floods and droughts is in a great measure mitigated. It is true that the irrigation of fruits and vegetables costs money, energy, and some skill, but the rewards are great and sure. With irrigation the crops need not suffer from either too much or too little water, and the land can be made to produce abundantly every year.

In order to bring into play the favorable soil, water, and climatic conditions to the best advantage the adaptability of varieties of trees and plants should be considered. It is not infrequently found that some varieties, although they may be among the leading ones in other States, are partially or entirely worthless in New Mexico, particularly of the stone fruits. On the other hand, some less valuable kinds in other sections succeed admirably in many parts here. In other words, the proper selection of varieties is an important factor in the success of agricultural and horticultural operations, and this is being realized more and more. Considerable success is also attending the introduction and propagation of crops especially adapted to the arid regions.

While agriculture is the leading industry and the majority of the people is more or less engaged in some branch of it, the possibilities in this direction are not fully realized, and only a small part of the land that is adapted to agriculture has been used. The counties of Chaves, Union, Eddy, and Roosevelt, on the extreme eastern side of the Territory, are still devoted mostly to stock raising, except in the Pecos Valley, principally in the counties of Chaves and Eddy, while west of the Pecos River an artesian belt exists, which is constantly extending and in which artesian wells are being drilled. In eastern Roosevelt many homesteads have been taken up during the past three years, and farming has been quite successful.

The counties of Otero, Lincoln, Guadalupe, Quay, and Torrance, in the central and eastern portion of the Territory, are also principally

stock-raising counties, but agriculture is extending steadily and the acreage in crops is increasing rapidly.

Colfax, Mora, San Miguel, Santa Fe, Valencia, Socorro, and Donna Ana counties are partly agricultural and partly stock-raising subdivisions.

Taos, Rio Arriba, San Juan, Sandoval, and Bernalillo may be placed in the same category. In McKinley County agriculture is not practiced to any large extent. In Grant, Sierra, and Luna the stock-raising industry is paramount, and agriculture is practiced mostly in the valleys of the permanent streams and water courses.

The prices of agricultural lands under irrigation systems, public or private, and with permanent water rights, are from $10 to $200 per acre, according to location, nearness to railroads and towns, crops, fruit trees, water rights, ditch systems, and general conditions.

As a general proposition it may be said that the lands in the valleys of the rivers, as the Rio Grande and its affluents in the central part of the Territory, the Canadian and its tributaries in the northeastern portion, the Pecos River and the streams entering into it in the central and southeastern part, the San Juan and its tributaries in the northwestern section, are in private ownership under irrigation and cultivation by means of community or private ditch systems, and are held all the way from $10 per acre up, according to location and nearness to railroads, irrigation facilities, and water supply, crops planted thereon, and other considerations.

In these valleys there is a vast amount of good land on the second and third benches from the river valleys proper, but these have, as yet, no water systems and are not under irrigation except in a few instances.

Within the past year the Federal Government, under the reclamation act, has withdrawn from settlement and entry large areas of public land under the Rio Hondo project in Chaves County, the Elephant Butte dam project in Sierra and Donna Ana counties, the La Plata in San Juan County, and other irrigation projects in the Territory, the first-named being under construction at present. These lands will be restored to settlement and entry if the project to build reservoirs is found to be unfeasible and is abandoned, or will be thrown open to entry under the terms prescribed by the reclamation act upon the completion of the project.

THE SOIL.

The soil of the valleys of New Mexico is superior in productive capabilities to the alluvial soil of the prairie States. The secret of its producing power probably lies in the large amount of sediment contained in the irrigation waters. The Nile Valley, with its irrigation waters loaded with sediment, is considered one of the most fertile in the world, and yet in New Mexico there are a number of Nile valleys in miniature.

The crops are not seriously troubled by fungous diseases, and insect pests, formerly unknown, have made their appearance in late years, but not to such an extent as in the humid regions. Much sunshine and dry air prevent the growth of fungi, and therefore these are not likely to become troublesome. The insect pests that have found their way here can generally be controlled by proper treatment.

It is quite a common custom, especially among the native population, to grow two crops on the same land in one season—that is, a crop of wheat and a crop of corn. This system would be inadvisable in the rain belt, but in sections where irrigation is employed and the water applied is loaded with rich sediment it is a question if any serious criticism of this practice can be made.

New Mexico's climate is a source of wealth to its people. Agricultural operations, especially in the southern half, are carried on throughout the year. Ground may be plowed any time during the winter, and cereals and alfalfa are sown during this season of the year, thus leaving the summer months free in which to harvest the cereal crops and the four or five cuttings of alfalfa.

ALFALFA.

Much has been written about alfalfa. It is known more or less in every State in the Union. Alfalfa is grown in all the irrigated sections of New Mexico up to an altitude of 8,000 feet. It is grown considerably in dry farming sections where there is no irrigation. In New Mexico alfalfa does well in almost every class of soil. The chemical constituents of the soil seem to have little to do with the growth of the crop, provided the surface is level and the proper amount of water is given. It grows well on light, sandy loam as well as on the heaviest adobe. It is said by an able writer that alfalfa will not stand "wet feet." That is true if he means that it would not grow in a water-logged soil. Where the soil is well drained it will extend its roots to the water table and grow luxuriantly where the water table is only a few feet below the surface of the ground. The area of alfalfa in New Mexico increased from 12,139 acres in 1890 to 55,467 in 1900. The average annual yield in the Territory is about 3 tons per acre. The cost of production, including taxes, water rent, growing, harvesting, baling, and placing on board the car, does not exceed $4 per ton. There are some large alfalfa farmers who are able to place alfalfa on the car at a much less figure because they have perfected their system of irrigation and handle the hay with improved machinery.

The net profit in growing alfalfa under irrigation is considerably larger than the average net profits realized on wheat and corn in the older agricultural sections. It is a crop that requires little labor, if the field has been made level and the soil well prepared before seeding, after which the operations are simple, resolving themselves into irrigation and harvesting. On many soils one irrigation will produce one crop, which may vary from one-half to 2 tons per acre. The price of alfalfa varies in different parts of the Territory, depending upon the production, amount consumed by stock being fattened, and the shipping facilities. The demand for alfalfa, aside from that of local consumption, comes from cities and towns, mining and railroad camps, and the thousands of isolated stock ranches scattered over the arid and semiarid sections, as well as a considerable demand from portion of Texas and the Republic of Mexico. At harvest time the price of alfalfa is comparatively low, usually not exceeding $8 per ton, but the forehanded farmer who holds his product until winter usually gets from $10 to $13 per ton. Alfalfa farming has

proven very attractive and profitable, and it is not surprising that the area increased from 12,000 to 55,000 acres in ten years.

As to the feeding value of alfalfa, it is conceded throughout the country that it leads all other forage crops in its total digestible food constituents and nitrogen contents.

OTHER FORAGE CROPS.

While alfalfa is the main forage crop, it is not the only one. There are some 20 or 30 varieties of grasses that grow wild upon the range and which are harvested for hay, the chief, and probably the most nutritious, being gramma grass, which during the wet years yields as high as 2 tons per acre. Large quantities of it are harvested on the public range and sold during the winter or fed to stock. Attempts to cultivate bromo grass, a drought and cold resisting forage crop of great value to stockmen, yielding three to four heavy crops per year, has proven successful, especially on the Sparks ranch on the upper Pecos. White clover does well, as do nearly all the other forage plants of the Temperate zone. Of late, the value of wild peas for the feeding of stock has been recognized, and as the yield per acre in nutritive value is equal to that of an acre of alfalfa, there should be a future for those who will go into the feeding of lambs and beeves in New Mexico, as the wild pea and lupine require very little attention. Oats do very well in the mountain valleys as well as on the plains farms, and the yield per acre is quite profitable. In fact, oats have become a staple crop in the northern part, even where the raising of other crops is not attempted. The cultivation of spineless cactus also opens vast possibilities to the stockmen, for cacti and mesquite are as native here as are the sagebrush and the pinon.

WHEAT.

Wheat is a sure crop in New Mexico if sown early. The yield of wheat per acre is equal to the yield in the leading wheat-growing States. New Mexico wheat received first premium at the World's Fair at Chicago and at other expositions. Before the building of the railroads, the Taos and other valleys were considered the granaries of the Southwest. Rye, barley, millet, and the other cereal crops do equally as well, and there is a good home market for all that can be produced.

CORN.

Corn stands next to alfalfa in acreage and value of total product. Where water for irrigation is plentiful the yield of corn in New Mexico compares favorably with the yield of this crop in the corn belt.

Kaffir corn grows as well if not better than ordinary corn. In some sections of the Territory it is grown almost exclusively for feeding stock. In the Pecos Valley, Kaffir corn is one of the leading crops. It yields from 25 to 50 bushels per acre, besides producing a large quantity of excellent stover. Both the grain and stover are fed to cattle and sheep in the fattening pens. Kaffir corn is an excellent drought register, and in Roosevelt County is raised without irrigation. Sorghum also yields good crops and in many localities is grown for its sugar content.

POTATOES.

By many the potato has been considered an impossible crop, and yet the value of the potato crop in 1903 was nearly $50,000. The difficulties in growing potatoes seem to be those of varieties and management under irrigation. Colorado failed in its first attempts to grow potatoes, but now this crop forms an important source of wealth in the Centennial State. Sweet potatoes are grown without difficulty. The best success with potatoes has been achieved in the higher mountain valleys. On the Viveash ranch, on the upper Pecos, for instance, at an elevation of 10,000 feet, as well as on the Sparks ranch, the yield of potatoes, both in quality and quantity, per acre, surpasses that of the potato fields of Greeley, in Colorado. Potatoes also do well in the Estancia Valley and the San Diego grant.

VEGETABLES.

New Mexico produces vegetables as well as the staple crops, and wherever water for irrigation can be had vegetables do well. While truck gardening is not carried on very extensively, it is nevertheless increasing every year.

Celery can be grown to perfection in those parts of the Territory where the soil and climate conditions are favorable and where some care in growing it is exercised. Among the best-known celery-growing sections are Santa Fe, the Rio Grande Valley, and Roswell. The latter place is probably the most noted for its celery. It produces a large quantity, but not enough to supply the demand. It is claimed that the Roswell celery is superior to the product from California, Michigan, and Louisiana, and will sell equally as well in the markets outside of the Territory.

Fine Rocky Ford cantaloupes are raised here. Cantaloupe growing is getting to be quite a business in the southern portion of the Territory. Early varieties are grown at Las Cruces, which are shipped mostly to the local markets, but the larger areas are found at Carlsbad and Roswell. From these points carloads of cantaloupes are sent to the eastern markets. It seems that there is no material difference between the New Mexico and the Colorado Rocky Ford cantaloupes. New Mexico, however, has the advantage of Rocky Ford, inasmuch as the cantaloupes can be placed on the markets earlier.

The tomato grows well and is quite an important crop. While it is grown more or less in all sections, the largest fields are in the Mesilla Valley. A canning factory is established at Las Cruces, which annually cans a large quantity of excellent tomatoes. The canned tomatoes are sold in New Mexico, Texas, Arizona, Colorado, and other States. The demand for these tomatoes is greater than the supply. The canned product has also added to the reputation of the Territory.

New Mexico is also known for the superior onion which it produces. Probably the Rio Grande and tributary valleys are the largest onion-growing districts, and there it is where the old "El Paso" onion, which has given New Mexico a reputation as an onion-raising section, grows so well. It is not infrequent to see specimens weighing 1½ pounds. The yield per acre is large. The results at the agricultural experiment station show that such varieties as the Red Victoria will produce 32,000 pounds per acre.

Beans are a staple crop, and the annual yield foots up to many hundred tons. Peas do equally as well, and the production of chili, or peppers, is a distinctive feature of native husbandry. Cabbages and beets attain an enormous size, and the average yield per acre would be considered phenomenal in the East. The garden vegetables all flourish, and the openings for energetic truck farmers are especially inviting in the vicinity of towns and villages, despite the fact that one merchant garden at Albuquerque gives an annual yield of $30,000 in value, and that there are extensive truck gardens in the Mesilla Valley. In the vicinity of Deming, Chinamen conduct truck gardens that are very profitable, despite the fact that every bit of water for irrigating must be pumped. Okra, peanuts, spinach, rhubarb, squash, melons, pumpkins, all do well, especially in the southern part of the Territory.

SUGAR BEETS.

New Mexico ranks first among localities best suited to the growth of high-grade sugar beets. In nearly all localities where good beets can be grown there may also be found fuel, limestone, and water of good quality, as well as cheap labor. In the face of these facts it seems that New Mexico should soon have sugar factories. Conditions are very similar to those in Colorado; in fact in some respects superior, for both labor and land are cheaper. No doubt when it becomes known that New Mexico is even better suited than Colorado for both the growing of beets and the manufacture of sugar, capital will develop this industry as it has others. New Mexico laws exempt all sugar factories from taxation for a period of six years.

The United States Department of Agriculture, through a series of experiments for a number of years, has proven conclusively that a mean temperature for the months of June, July, and August of about 70° is the best temperature for the growing of beets of high saccharine contents. The isothermal sugar zone, or that belt of the United States best adapted to the growth of sugar beets, has been carefully mapped by Dr. H. W. Wiley, Chemist of the United States Department of Agriculture. It extends east and west across the United States, and embraces that portion having a mean summer temperature between 69° and 71° F. Entering the northern boundary of Colorado, it passes through the entire State and into New Mexico, where it forms a loop in the extreme southern part of the Territory, somewhere north of and near Lascruces, and passes upward again and out in the extreme northwestern part. The entire agricultural part has the proper climatic conditions for the cultivation of sugar beets, although the Mesilla and lower Pecos valleys in less degree than the more northern valleys. Beets grown when fully matured have shown a high sugar content. Doctor Wiley, who is undoubtedly the principal authority on sugar beets to-day, has the following to say:

> It is evident that there are many localities in New Mexico where conditions of temperature are most favorable to the growth of beets. There are also large areas of comparatively level lands which are capable of irrigation. Wherever the temperature of these regions is sufficiently low to permit the proper development of the beet, and where sufficient water for irrigation can be secured, there is good reason to believe that the industry may be established and prove to be profitable. While the summer days of New Mexico are not so long by an hour or more as in the regions farther north, the amount of sunshine which the growing beets will receive is practically as great as in more northern localities, because of the comparative absence of cloudy and rainy days.

The same scientist tabulates analyses of sugar beets grown in the different States and Territories. It will be seen that New Mexico grown sugar beets have a higher percentage of sugar than those of any State which at that time had sugar factories in operation. It will also be observed that the percentage of purity of juice from New Mexico is very high.

The following table gives the sugar content and purity of juice in New Mexico beets and beets from other States in which beet-sugar factories have been located:

State.	Sugar in beet.	Purity of juice.	State.	Sugar in beet.	Purity of juice.
	Per cent.	*Per cent.*		*Per cent.*	*Per cent.*
Michigan	14.7	81.1	Oregon	(a)	(a)
California	16.8		Washington	13.7	80.7
Colorado	13.6	76.6	Wisconsin	15.8	83.3
Utah	14.3	81.1	Ohio	13.8	79.1
Nebraska	12.9	76.9	Minnesota	11.0	79.2
New York	15.0	82.4	New Mexico	17.2	82.0

[a] Results not given in table.

It is estimated that the people of New Mexico consumed 16,000,000 pounds of sugar last year. Not one pound of this sugar was manufactured in the Territory, notwithstanding the fact that natural conditions are better suited to sugar-beet growth and beet-sugar manufacture than in almost any other place in the United States, and possibly in the world.

TOBACCO.

Tobacco has been cultivated for hundreds of years, and it is more than likely that tobacco originated here and found its way into other countries. Wild tobacco, called "puncha," grows all along the foothills of the mountains. Many farmers continue to grow tobacco of seeds from the original plant, preferring it to Havana or any other variety. The cultivated plant is very similar to the native. The native farmers do not sow the seed in beds and transplant, but drill in rows. The plants are from 5 to $5\frac{1}{2}$ feet high and have about 40 leaves. They are small, and resemble Turkish more than any other variety in growth and shape of leaf.

Sumatra, Turkish, Havana, Connecticut, Virginia, and Kentucky burley seed were sown and covered with glass as an experiment in Bernalillo County in recent years. This was necessary, as it was late in the season and the plants had to be forced. If the beds had been sown late in February or the early part of March a covering of canvas or cheese cloth would have been sufficient. Suitable lands were selected for the experiment. The crop grew nicely and gave a fine yield of superior quality, with point in favor of Kentucky burley and Turkish.

Tobacco of all varieties will grow well and has an unusually fine flavor and aroma. Several acres of Sumatra have been planted between rows of Kaffir corn 6 feet apart. It was shown by this experiment that the corn gave sufficient shade to the plants to make a very fine leaf, and that the great expense of covering the field with canvas is not necessary.

COTTON.

Cotton is raised successfully in Eddy County. A cotton gin has been erected at Carlsbad. Cotton is also grown on a small scale in Chaves, Roosevelt, Donna Ana, and Quay counties. Two thousand acres were under cultivation in Eddy County during the 1904 season, and in 1905 the acreage was increased.

CANAIGRE AND RUBBER PLANT.

Both of these plants grow wild on a large scale. The first named is valuable on account of its high contents of tannic acid, a necessity in tanning leather. An experimental plant at Deming several years ago showed that sooner or later the canaigre root will be the principal source of tannic acid. Recent experiments have shown that the rubber plant will yield a good quality of crude rubber, and that its cultivation for manufacturing purposes can be made profitable. Several companies have been organized to utilize the wild rubber plant for that purpose.

HORTICULTURE.

Fruit growing is assuming large proportions with practically no obstacle in the way of its becoming still greater, provided proper precautions to keep down insect and fungus pests are taken, as is done in other fruit-growing States. New Mexico's orchards are equal, if not superior, to those in the finest horticultural sections in the United States.

Of all the fruits, the apple is the most extensive and the most profitable crop. Notwithstanding the topography of the Territory, this fruit is well adapted to the different horticultural districts. The counties of San Juan, Colfax, Mora, Rio Arriba, and Santa Fe in in the north, Bernalillo and Socorro in the central, Grant, Donna Ana, and Otero to the south, and Lincoln and Chaves in the southeast, are favorably known for their superior apples, not only throughout the United States, but abroad. Their fruit is placed in competition with the world at the great expositions. In 1901, at Buffalo, the apples from New Mexico were conspicuous, and the fruit from Roswell, in Chaves County, received a first prize, while in 1900 the New Mexico apples were carried across the continent and the Atlantic Ocean to the Paris exposition. There New Mexico was counted in with the best apple-growing sections in the Union, as specimen apples from Donna Ana received second premium. Similar were the results of the exhibit of New Mexico apples at the Chicago and St. Louis expositions. This may give an idea as to the kind of fruit that can be grown. Not only is the fruit of superior quality, but the crops produced are enormous. As a rule the trees tend to overbear.

The apple orchards vary from small family places to very large commercial orchards. The larger commercial plantations are located in the Mimbres Valley, the Mesilla Valley, San Juan County, and at Roswell. The Roswell district, which seems destined to become the largest apple-growing section in the Southwest, is particularly noted for its large orchards. The largest bearing orchard is that of J. J. Hagerman, and comprises something over 540 acres. The most profitable varieties grown are the winter apples, such as the Ben

Davis, Gano, Missouri Pippin, Winesap, Mammoth, and Black Twig. In a lesser degree the early varieties are also prolific. Among the leading kinds may be mentioned the Early Harvest, Red June, Yellow Transparent, and the Maiden's Blush.

Other pomaceous fruits, like the pear and quince, thrive as well as the apple, but these are not so important nor are they planted in such large areas. The pear has a marked adaptability. The trees usually bear early, are among the best drought resisters, and are long lived and hardy. The fruit, especially in the large varieties, like the Bartlett, Idaho, Beurre, and Easter, grows very large and is of fine quality. There is a bright future for the extensive planting of this fruit.

While peaches are grown in all the fruit-growing sections, the larger commercial orchards are found in the Mesilla Valley, the upper Rio Grande Valley, and at Carlsbad. These districts are especially adapted for certain varieties of peaches, which find their way into the Colorado and Kansas City markets. The early ripening varieties, such as the Alexander, Sneed, Waterloo, Arkansas Traveler, and Hyne's Surprise, are among the successful and sure bearers. This is due to the fact that as a rule the early varieties are the late bloomers, blooming late enough to escape the late spring frosts. The late ripening peaches ordinarily bloom from eight to ten days earlier than the early kinds. The peach trees usually begin to bear at three years from the time of planting. The tendency of the trees is to overbear, and it becomes necessary to thin them, in order that the fruit may not be too crowded. In size and quality New Mexico peaches are not excelled by peaches from the best peach-growing States. It is the common opinion of those who have tasted both the California and New Mexico peaches that the latter are the better in quality. The fruit, as a rule, is highly colored, due perhaps to the more continuous sunshine during the ripening period. Probably the profitable period of the peach tree here is from ten to twelve years. By replanting an orchard at intervals of five to eight years a profitable orchard can be kept up almost indefinitely.

In New Mexico, as in other places where the apricot grows, it has given evidence of a longevity greater than that of any orchard tree, with the possible exception of the pear. It is not uncommon to see very old seedling apricot trees growing in the native home places in the Mesilla Valley, and at Santa Fe seedling apricot trees are known to be about 200 years old. The fruit from the improved kinds is as large and as good in quality as the California apricots. The Blenheim, Moorpark, Royal, St. Ambroise, and Luizet are desirable for home planting.

Cherries are only raised on a small scale. The trees of both the sour and sweet groups grow well. Varieties of the sour cherry are the best bearers, but the fruit is not as large as that from the sweet varieties. The latter attain a size and flavor that are unknown to the product of eastern orchards. The sour varieties predominate, as they have proven to be more regular and surer bearers. The Early Richmond, English Morello, Ostheim, Napoleon, Tartarian, and the Montgomery are among the leaders.

The plum is making a place for itself. There is a growing demand for it. The tree is perfectly hardy, although there is some variation as to the fruitfulness among the trees of the different types. The

three types are, first, the European plum, which is the plum that gives rise to the old varieties, such as the Green Gage, Yellow Egg, Damson, and the various prunes; second, the Japanese plums, which are entirely different from the former; and third, the native plum, such as the Wild Goose. As already stated, it is a well-established fact that the selection of varieties is an important consideration, and this is particularly true in regard to plums. The European plums do admirably. The trees are thrifty, heavy, and sure bearers. These plums are well adapted in every respect to the New Mexico conditions, and large and excellent quality fruit can be produced. A few of the leading kinds of this group which have been tested are the Clayman, Jefferson, Imperial, and Transparent Gage, Yellow Egg, Pond's Seedling, Washington, and the French and German prunes. The native plums, such as the Wild Goose, Golden Beauty, and Pool's Pride, are sure bearers.

The Territory is celebrated for its grapes. The European or the so-called California grapes succeed well, and these at present are the kind grown for the market. The native or American grapes are equally as satisfactory for commercial purposes, are mostly grown for family use, and at Santa Fe excellent results have been obtained with the Diamond, Concord, Catawba, and other native varieties, while in the Estancia Valley this year several thousand plants have been set out of varieties especially valuable on account of being immune to the phylloxera, and drought-resisting. The European grape has been cultivated for over a century, but its culture, generally speaking, has been confined to the southern and hotter valleys, and particularly to the Rio Grande Valley, from the Texas line to Santa Fe. The varieties that constitute the commercial vineyards are the Missouri, Muscat of Alexandria, and more or less the Gros Colman and Flame Tokay. These grapes are shipped to the Texas, Louisiana, and Colorado markets, where they have given New Mexico a reputation for fine grapes. The Missouri grape, while quite late in ripening, is the most popular, and possesses some excellent qualities as a table and wine grape, and is the grape of New Mexico at present. The Rio Grande Valley, and particularly the Mesilla Valley, is especially suited to the grape, and when its possibilities in this direction are more fully understood by the people New Mexico will become a vast grape-producing section. The grape-shipping season extends from about the 20th of August till the last of September. This short season is due to the commercial grapes being all mid-season varieties. Early and late ripening varieties need to be added to the large vineyards in order to extend the shipping period. There were 1,180 acres in bearing vines in 1900 and 9,000 acres of young vines.

Small fruit does well and yields big profits, especially currants, raspberries, and gooseberries, which obtain a size and flavor that are excelled nowhere. Nearly all varieties flourish and yield good crops year in and year out.

ORCHARD CROPS.

There were 719,057 bearing fruit trees in 1900, which produced 263,870 bushels of fruit. The value of all orchard products in 1899 was estimated at $197,335. It is double that this year, and there is a noticeable increase in the amount of dried and evaporated fruits,

which indicates that culls and unmarketable products are being more generally utilized. In the near future New Mexico will probably be able to supply its own markets with jams, jellies, marmalades, etc., manufactured from such fruits as usually go to waste, thus effecting a great saving. Roswell, Farmington, Lascruces, and other points have in recent years erected evaporating plants and fruit canneries.

RESULTS.

At the Pan-American Exposition, at Buffalo, an agricultural and horticultural exhibit from New Mexico received two gold medals, three bronze medals, and five certificates of honorable mention in competition with the rest of the North American as well as the South American continent. At the Louisiana Purchase Exposition, at St. Louis, peaches from Roswell and Carlsbad received first premium in competition with peaches from California, and apples and other fruits received honorable mention. The following figures are culled at random from reports in local newspapers made to them by farmers and horticulturists or by reports made to the Bureau of Immigration:

The Casey ranch, of 112½ acres, 100 acres of which are in alfalfa, one-half mile north of Lascruces, had an average income per year since 1896 of $6,000. J. L. Wilson, of Roswell, sold $800 worth of tomatoes from a 2-acre lot, on which the net profit was $550. Samuel Johnson, on a 3-acre lot, at Roswell, raised $2,500 worth of truck, one-half of which was profit. George Davis, from 13 acres of fruit, in Chaves County, in one year sold $1,807 worth. J. C. Lea, of Roswell, in an off year for apples sold $90 worth of this fruit from eight trees. A. J. Gilmour, of Floravista, San Juan County, sold $600 worth of onions from 1 acre. W. H. Williams, of San Juan County, harvested 350 tons of alfalfa from 60 acres. W. H. Knight, of Farmington, sold 500,000 pounds of fruit from an 80-acre orchard, receiving on the tree 1 cent a pound for apples, 2 cents a pound for grapes, and 3 cents for prunes. He had one peach tree that yielded 700 pounds at one bearing. Andrew Stevenson, of the San Juan Valley, received $3,200 from the alfalfa crop of 100 acres. W. M. Farmer, of Roswell, made $6,000 from 20 acres of celery. At the United States Industrial Indian School, in Santa Fe, on three-fourths of an acre 11,800 pounds of the best onions were raised, giving the school its entire winter supply of this important food vegetable, and which, if bought in the market, would have cost 4 cents per pound, or $472. The Territorial penitentiary at Santa Fe, on a plat of 5 acres, raised sufficient vegetables of all varieties to supply the officials and inmates, about 300 in number, all the year around, with the exception of potatoes and tomatoes.

The following were among some of the exhibits at recent agricultural fairs in the Territory: Barley 7 feet high; oat heads 30 inches long; apples weighing each 28 ounces and 16 inches in circumference; pears, 19 ounces; peaches, 12 ounces; Muscat grapes weighing 25 ounces per bunch; nectarines weighing 6 ounces; water melons, 40 pounds; heads of cabbages, 42 pounds; a bunch of 9 sweet potatoes weighing 18 pounds. One apple tree in Otero County, in 1900, yielded 6,000 pounds, and a peach orchard of 3,000 trees yielded 200,000 pounds. The following are average yields per acre: Oats, 70 to 100 bushels; corn, 40 to 60 bushels; barley, 60 to 85

bushels; wheat 30 to 45 bushels; alfalfa, 3 to 5 tons; potatoes, 300 to 500 bushels; sweet potatoes, 600 to 1,000 bushels; cotton, 1 bale; tobacco, 1,000 pounds; canaigre root, 2 to 3 tons; onions, 500 bushels; sugar beets, 16 to 22 tons, yielding from 16 to 22 per cent saccharine matter; Mission grapes, 12,744 pounds, making 910 gallons of wine. One acre of asparagus from the third year yields 200 pounds a day for sixty days each year. In Eddy County the average return for each acre of sugar beets was $76 and the average cost to the farmer $22. Bees average 65 pounds of honey each year per hive, although as high as 196 pounds per hive have been realized at Artesia, Eddy County. The average profit per colony per year is $10. In years of ample rainfall an immense amount of gramma grass is harvested on the public range, an acre yielding from 2 to 3 tons of hay.

HOTHOUSES AND FLORICULTURE.

Only a beginning has been made in the Territory in floriculture and in raising early vegetables and flowers in hothouses. Nearly every town offers a good opening to the right kind of man in that line. Roses and a large variety of flowers do well in gardens, and carnations, chrysanthemums, and a host of other flowers cultivated in the Temperate Zone present no difficulties in cultivation. Early vegetables, strawberries, and other fruits are imported from other Commonwealths, and bring prices sufficiently high to make it worth while to raise them in hotbeds or in hothouses.

APIARIES.

With mild winters and abundant bee pasture, in the form of alfalfa, tornillo, etc., the apiarian products have increased over sixfold in ten years, and are of considerable importance all over the cultivated areas. Bee culture and the production of honey is very profitable, and a pursuit especially adapted to those who are able to do only light outdoor work. Santa Fe, Taos, San Juan, Donna Ana, Chaves, and Eddy counties lead in the production of honey.

POULTRY AND POULTRY PRODUCTS.

Annually thousands of dollars are poured into the pockets of Kansas and Nebraska farmers in payment for poultry and eggs consumed here, yet the Territory is well adapted to the raising of poultry. It has most of the advantages of other sections. Insect pests are no worse, while disease is rare. Prices are high, being governed by the price of the foreign product plus the transportation charges, therefore the home product has the best of it. It is evident that the New Mexico farmer is taking advantage of these favorable conditions, for the number of dozens of eggs produced increased from 1890 to 1900 from 280,000 to 840,000; yet there is need of a greatly increased production to supply the demand.

DAIRYING.

Dairying has kept pace with the demand in the vicinity of cities and towns where the products are sold in the form of milk and cream. There is not enough butter and cheese manufactured, how-

ever, to supply the demand, although there has been a considerable increase in their production. In 1889 there were manufactured 105,000 pounds of butter and cheese; this amount swelled to 380,000 pounds in 1899. Roswell and Farmington have creameries, and if there is any branch of husbandry that should pay well in New Mexico it is the dairy and creamery business.

THE STOCK INDUSTRY.

Next to agriculture, the stock industry is the greatest source of wealth; in fact, as far as the area devoted to it is concerned, it leads. This is easily explained, for besides an extensive private range there are 50,000,000 acres of public range, and the climate is all that can be wished for by stock raisers. Many fortunes have been made in stock raising, and with each year the grade of stock is being improved and thus becomes more valuable.

CATTLE.

Over 1,000,000 cattle are on the ranges of the Territory, and in Chaves County are to be found some of the highest-grade cattle in the United States, Herefords predominating. Chaves, Grant, Sierra, Luna, Otero, Donna Ana, Union, Guadalupe, Roosevelt, Colfax, Eddy, Lincoln, and Quay are the principal cattle-raising counties, and have many large cattle companies and individual owners in addition to smaller outfits. But it must be understood that the control of water means the control of the range, and it is not an easy matter for the stranger to come in and secure at this day sufficient public range for a large herd of cattle, although there is always room for a small bunch. On the extensive forest reserves, especially, grazing permits are readily secured at slight expense and a nominal charge per head, and since the range on these is protected, it is the best in the Territory. It is also found advisable to make more or less provision for winter feeding to guard against unexpected losses. But with feeding during winter storms, with a good home ranch, and water, the cattle business proves very profitable. The business of feeding beeves for market, while practically untried, should prove very remunerative on account of the mild climate and the abundance of forage plants.

SHEEP.

There are between 5,000,000 and 6,000,000 sheep upon the ranges. The mild winters, the grassy mesas and watered valleys, and the sheltered canyons help to make sheep raising very profitable. The wool produced annually is between 20,000,000 and 25,000,000 pounds, and, as railroad facilities are ample, there is no difficulty in getting the wool crop to market. A moderate capital invested in sheep, a home ranch, and ample range, will bring success to the sheep raiser if he possesses good business tact and experience. In 1905, for instance, most sheep owners doubled their herds by natural increase, or received as much for their lambs as their ewes were worth last fall, receiving for the unscoured wool as high as 25 cents and for the scoured wool 65 cents per pound.

GOATS.

Equally as profitable and as free from difficulties is the raising of goats. Especially on the foothills and on the mountain mesas goats do better than sheep. There are many thousand square miles of such pasture in the Territory. In Sierra, Lincoln, Otero, and Santa Fe, and other mountain counties there are many large goat farms, much attention being given to high-grade Angoras. Incidental to the profit from the hair of the Angoras, their skins, and their meat, they will clear land from brush, and thus make it available for irrigation. The goat is very hardy, can subsist upon a range that would starve any other animal, and is free from diseases which often play havoc with other stock. There are, it is estimated, 225,000 goats.

HORSES, MULES, ASSES, AND BURROS.

Of late years there has been an increased demand for range horses, which New Mexico stockmen are in good position to supply. Some effort has been made to improve the blood of the horses, and the success attained should encourage more stockmen to enter this profitable business. The demand for mules for draft purposes is steadily growing. The burro has been at home in New Mexico for centuries and has been the burden bearer in many districts where horses can not be used to profit. The burro is very hardy and thrives upon pasture which would starve other stock.

HOGS.

Upon the Chisum ranch, in Chaves County, hog raising upon a large scale has been very successful and profitable. The hogs are shipped to Kansas City, although almost every pound of pork sold in the Territory is imported. On a small scale, too, the raising of hogs has shown that the animals are freer from disease in the climate of New Mexico than anywhere else, and that they fatten rapidly on alfalfa and corn.

MINING.

Mining antedates all other industries of the Territory, and in importance as a wealth producer and employer of labor it stands second only to agriculture and stock raising. Prof. Fayette A. Jones, in New Mexico Mines and Minerals, enumerates more than 200 minerals found in the Territory. As early as 1540 Coronado invaded the Southwest in the search for gold, and since then the stream of argonauts and prospectors has been large and steady, although even at this day this historic mining region has been but partially prospected and much less developed. Yet, New Mexico produced gold many years before any other portion of the United States, and the placers of Santa Fe County were worked systematically by white men two hundred years before gold was discovered in California. There are traditions of vast treasures buried at Gran Quivira and under the ruins of other Pueblo villages, but history records that the conquistadores were disappointed in their efforts to locate a Golconda. There are several mines and prospects, now abandoned, which antedate the Pueblo revolution in 1680, but it was not until after 1800 that the systematic exploitation

of mineral wealth began. In that year Governor Chacon said: "Copper is abundant and apparently rich, but no mines are worked, and coal is plentiful." Three years later Lieutenant Pike reported that there was only one mine in New Mexico, that at Santa Rita. To date New Mexico has produced $30,000,000 worth of gold and perhaps a little more of silver. The annual mineral production foots up $5,000,000, coal leading with almost $1,700,000; zinc being second with almost $900,000; copper third, with $700,000; gold, $400,000; iron, $500,000; silver, $125,000; lead, $135,000; precious stones, $75,000; all other minerals, $465,000. Under the head of each county will be enumerated the principal mining camps and producing mines.

COAL.

The first coal mine worked in the Territory was near Carthage, Socorro County, in 1863, and was known as the "Government mine," although the widespread existence of coal beds was known as early as 1800; in fact, the outcroppings could not have escaped the attention of the earliest settlers. The second coal mine was opened at Madrid, Santa Fe County, in 1896. By 1870 coal was known to exist near Taos, on Galisteo Creek, near Hagan, on the Vermejo, in the Raton Mountains, near Maxwell City, near Las Vegas, on the Rio Puerco, in the San Mateo Mountains, and near Fort Wingate, but owing to the absence of railroad facilities and manufacturing industries only 400 tons were mined in that year. The area of the prospected coal lands is 1,500,000 acres, or about one-fiftieth of the total area of the Territory. It is thus seen that New Mexico is well endowed with fuel, the first requisite for successful manufacturing, smelting, and railroading. The United States coal-mine inspector reports officially that the coal in sight in these prospected fields amounted to almost 9,000,000,000 tons, and at the present rate of production it will take six thousand years to exhaust the fields now known. Considerable of the coal is of a good coking quality, and the production of coke during the past five years was 200,000 tons. The coal produced during the same period was 7,000,000 tons, valued at $10,000,000 at the mines. Colfax and McKinley counties lead in production. Lincoln this year must yield third place to Santa Fe County, owing to the closing down of the principal producers at Capitan, while Santa Fe County will, in the near future, yield that place to San Juan County, which has coal seams 40 feet thick, and which was given railroad facilities this year. Rio Arriba and Socorro counties are steady producers of coal to the annual value of about $50,000 each, and can increase that amount to meet any demand. Valencia County has extensive coal beds, and Sandoval County has mines that are developed to such an extent that they can produce 100,000 tons per year. A railroad is now being built to these mines.

Many acres of coal land are still to be located under the Federal laws, but as it takes capital to develop coal mines and the placing of their product is to a certain extent dependent upon railroad facilities, the exploitation is best handled by corporations or individuals with ample capital. The number of coal mines worked at present is 40, with new ones being opened every year and older mines being closed down because it is more profitable to open a new coal seam than to work the old mines after they have reached a great depth. At

Madrid both bituminous and anthracite coal have been mined, and the Cerillos and Carthage coals are deemed the best, although that produced in the other mines is a very good bituminous. Dawson coal meriting special mention for its quality. In some of the coal fields the coal is lignite, and near Roswell a bed of peat has been recently discovered.

COPPER.

Next to coal and zinc, among the minerals, copper adds most to the wealth of New Mexico. Grant County produced 90 per cent of the copper mined in the Territory, Santa Fe, Donna Ana, Rio Arriba, San Miguel, Otero, Luna, Valencia, Socorro, Sandoval, Colfax, Union, Taos, Mora, and other counties have deposits of copper and many copper locations, but few developed mines, the most important of these being located near San Pedro, in southern Santa Fe County; but this mine, together with its smelter, has been idle a number of years, although valued at $500,000. The total production of copper has advanced from 700,000 pounds in 1897 to about 15,000,000 pounds in 1905, the total production during the past ten years having amounted to 45,000,000 pounds, valued at $5,000,000.

GOLD.

Gold ranks fourth as a mineral producer of wealth in New Mexico, and is the easiest mined. There are but few counties along the eastern border and central portions, as well as San Juan County in the northwest, which do not lay claim to a steady gold production, and even in these gold finds are reported from time to time and color is plentiful. Almost one-half of the gold produced, which amounts to somewhat less than half a million dollars a year at present, comes from the placers, although the Territory has a dozen lode mines which were bonanzas in their time. The richest and largest producer of placer gold is the Moreno Valley, in western Colfax County. The old and new placers of Santa Fe County, with their historic cement and gravel beds; the Sierra County placers near Hillsboro and in the Caballo foothills; the placers at Jicarilla, Lincoln County; at Jarilla, Otero County; near Silver City, Grant County, and the placers on the upper Rio Grande and the Chama, are of varying degree of richness and extent and only partly exploited. The lack of water and of appropriate machinery for the recovery of the gold from the gravel, sand, and cement are the chief hindrances in the way of redeeming the millions of dollars worth of gold that it is estimated are contained in these placers. The production of gold has fluctuated violently, having reached $1,000,000 a year in 1900 and down to $245,000 in 1903, the lowest point in the past two decades. Since then there has been a small annual increase. In the last ten years the production amounted to $5,000,000.

SILVER.

New Mexico as late as 1902 produced over $500,000 worth of silver, and in 1896 the production was almost $1,000,000, but to-day the white metal is produced mostly as a by-product of gold, copper, lead, and zinc, although at this date several of the old famous silver mines are

about to reopen and to be worked with modern machinery, which will make the mining of silver profitable once more. Sierra and Grant counties were the principal silver producers, several of the mines of that section having yielded fortunes. The production of the past ten years has been valued at $5,500,000.

ZINC.

It is only within very recent years that much attention has been paid to zinc mining, for a long time the Mineral Point Zinc Company having been the only shipper of zinc ore out of the Territory. But more attention is being paid to that mineral to-day, and the Graphic and other mines in Socorro County, formerly lead and silver producers, are now shippers of zinc, while several other mines which formerly deemed zinc as an undesirable by-product hard to get rid of are preparing to ship ore for its zinc content mainly. The annual production is valued at $900,000, and is certain to increase right along.

LEAD.

Lead has been a staple product ever since smelting operations have been begun within New Mexico's boundaries. The average annual production is about 12,000 tons, but can be greatly increased, as the mineral exists in large bodies in Santa Fe, Socorro, Donna Ana, Grant, San Miguel, Luna, and other counties, and is at present mined only as a by-product. The production was as high as 18,240,000 pounds in 1897, but had fallen to 1,226,000 pounds in 1903. The total production during the past ten years was 60,000,000 pounds.

IRON.

While the iron deposits of New Mexico are extensive, only one of these is being worked, that at Fierro, Grant County, which produces over 100,000 tons annually. Eastern Socorro and western Lincoln counties, southern Santa Fe County, San Miguel, Sierra, Otero, Sandoval, and Colfax counties, and other localities have prospected iron fields. The ore contains a high percentage of phosphorus, and when free from silica and copper is excellent for steel making. The proximity of big fields of fuel should make the iron industry one of the future wealth producers.

MICA.

Although only four or five States of the Union produce mica, the large deposits of that mineral in New Mexico have been practically neglected. Outside of shipments from the deposits at Petaca, Rio Arriba County, no large shipments of mica have been made. As much mica is imported, it seems that sooner or later the many mica deposits will be found of great value. It is used both in sheets and ground, and a good quality will bring $100 to $500 a ton. Lieutenant Pike, in 1804, mentioned the large deposits of mica in Santa Fe County, which furnished the material for the windows in those days, and it was not until after 1850 that window glass became generally used. The settlement of Talco, Mora County, derives its name from

the deposits, called "talco" by the natives. In addition to the mica deposits named there are prospects north of Ojo Caliente, in Taos County, in the San Andreas Mountains; at Nambe, in Santa Fe County, and in the Florida Mountains; also in San Miguel County.

SULPHUR.

In recent years New Mexico has produced some commercial sulphur, a mill having been erected in the Jemez Mountains, Sandoval County. It was one of the first minerals mined in the Territory, mainly to be used in the manufacture of gunpowder, Coronado having made that use of sulphur mined at Jemez in the first half of the sixteenth century. Near Whiteoaks and along the western border of the Territory the gypsum beds contain considerable sulphur.

ALUM.

New Mexico has the largest alum deposits in the world. They are found on the upper Gila River, in Grant County, and include 2,000 acres of pure alum. Another large deposit has been located 25 miles east of Wagon Mound, Mora County; west of the Red River, in Taos County; southeast of Springer; and in northwestern Sandoval County the mineral also occurs, and near Las Vegas, in San Miguel County.

PRECIOUS STONES.

Among the precious stones enumerated by Prof. Fayette A. Jones, in New Mexico Mines and Minerals, are the diamond, found in Santa Fe County; emeralds, in Santa Fe County; peridots, in the western part of the Territory, those found on the Zuni Reservation being pronounced the finest in the world; garnets, in McKinley, Santa Fe, and Taos counties; opals, in the Cochiti Mountains and at Santa Rita; sapphires, in Santa Fe County; euclase, near Taos; while agate, amethysts, tourmaline, quartz crystals, carnelian, moonstone, and chalcedony are distributed widely. In the production of turquoise New Mexico leads the world, rivaling Persia in the beauty of its gems and the extent of its deposits. In 1901 the Territory produced turquoise to the value of $100,000, the following year $125,000, but during the past year the production declined to less than $50,000, owing to the desire of dealers to restrict production. The turquoise mines in Santa Fe and Grant counties were worked by the Indians before the coming of the Spaniards. The principal producers of turquoise are the mines of southern Santa Fe County, the mines in the Burro Mountains, and near Hachita, in Grant County, and the Jarilla Mountains, in Otero County.

PETROLEUM.

New Mexico thus far has not produced petroleum on a commercial scale, but indications point to extensive fields, and considerable experimental drilling has been done. New Mexico petroleum has an asphaltum base. Indications for oil are especially promising in Eddy, Guadalupe, McKinley, Santa Fe, Sandoval, Colfax, Union,

Lincoln, Otero, San Juan, Socorro, and Luna counties, but at present the only development work is being done in Eddy County. In McKinley County wells have been sunk for oil to depths of 900 and 1,400 feet, respectively, while in Colfax County one well was bored to a depth of 2,650 feet and another to 1,535 feet without developing more than strong traces of oil and gas. Near Santa Rosa a well was sunk to a depth of 1,000 feet, and at 700 feet yielded a small quantity of oil.

GRAPHITE.

Near Raton, in Tijeras Canyon in Bernalillo County, and in Taos County exist deposits of graphite, that at Raton being the most extensive. Not being of the purest quality, these deposits have not been worked extensively.

SALT.

The saline deposits of New Mexico are large and have produced salt from time immemorial, the Indians having sought them long before the advent of the Spaniards. The oldest and best known salt deposit is that of the big salt lake on the Estancia plains, in Torrance County. This lake also has heavy deposits of bloedite, the only place in the United States where this rare mineral has been found. It is a hydrous double sulphate of soda and magnesia. The salt lakes of the white sands in Otero County, the Zuni Crater Salt Lake in Valencia County, which produces the best salt in the Territory and is in a constant process of formation, having at present a deposit of several million tons, the salt lakes in western Socorro County, and the salt lakes east of the Pecos in Eddy County are the principal salt producers, although saline flats and salt springs occur in other parts. Thus far none of this crude salt is refined for commercial purposes, and is used only to salt stock or by the poorer people as a substitute for the commercial table salt.

CEMENT.

The extensive marl beds furnish excellent material for Portland cement. Such beds are located on the Estancia plains, in Torrance County; near Springer, Colfax County, where a plant was in operation several years ago; in eastern Lincoln County, and at other points.

GYPSUM.

One of the most widely distributed minerals in the Southwest is gypsum; but it is only lately that plants have been erected at Ancho, Lincoln County, at Alamogordo, and at Roswell to utilize the gypsum for the manufacture of artificial stone, cement, plaster, and imitation marble. Some of these gypsum deposits attain a depth of 400 feet and cover many square miles, especially in Otero and Lincoln counties, but are found in every county in the Territory.

LIME.

Lime rock is as widely distributed as gypsum in New Mexico, although until recently the Territory shipped all its lime from Texas, Colorado, and Kansas. The largest lime ovens at present are

in Tijeras Canyon, Bernalillo County. Large lime ovens were formerly operated at San Antonio, Socorro County. At or near most of the larger towns lime is being burned to a greater or lesser extent. The lime deposits about Santa Fe are of an especially fine quality.

CLAY.

Many varieties of clay are found, from the finest kaolin for the manufacture of porcelain to the splendid brick clays found near Santa Fe and Socorro. The aborigines used the clay for pottery making, and its wide diffusion is shown by the pottery made at all of the Indian pueblos and found in the cliff dwellings and abandoned pueblos. At Santa Fe alone machine-made brick is manufactured, while hand-made brick is made at Las Vegas, Farmington, Socorro, and other points. At Albuquerque cement bricks are manufactured.

BUILDING STONE.

Granite, sandstone, marble, rhyolite, and other building stone are found and quarried in every county of the Territory. In the Sandia Mountains are splendid quarries of granite, sandstone, and limestone. West of Lascruces a mottled marble is quarried. Southeast of Lordsburg are deposits of rhyolite. At Silver City limestone and a dark marble are used for building material. Near Red Rock, Grant County, beautiful ricolite is quarried. Las Vegas has a fine sandstone of various shades, which is taken out of four quarries. Raton has a gray sandstone; Socorro a light gray trachite; Lamy an excellent sandstone; marble, granite, and sandstone of good quality are found at Santa Fe; Roswell has good sand and limestone; north of Ancho flint is found, taking a high polish; Gallup has cretaceous sandstones, while the marble quarries of Alamogordo are beginning to supply El Paso with superb building material. Whiteoaks has a beautifully mottled and a fine sandstone.

LITHOGRAPHIC STONE.

A quarry of lithographic stone is worked at Highrolls, in Otero County. Similar deposits are being developed at Toltec, in Valencia County, and a lithographic stone of good quality has been found in the Organ Mountains, Donna Ana County.

PUMICE STONE.

Deposits of pumice stone are worked near Grants, Valencia County. West of Socorro there exists a large bed, in fact, owing to the wide extent of the volcanic formations of the Territory, pumice, tufa, and other volcanic stone are widely distributed.

OCHER.

At San Pedro, Santa Fe County, are deposits of ocher, or mineral paint. One of the purest beds is found in the Sandia Mountains, Sandoval County. From almost every county have come reports of the existence of deposits of mineral paint, but thus far these deposits have not been exploited to any considerable extent.

GUANO.

Something like 3,000 tons of guano have been shipped from bat caves near Lava Station, Socorro County, to California for fertilizing purposes, while a few shipments went as far as Honolulu, Hawaii. In Eddy and other counties similar deposits are found.

MANUFACTURES.

New Mexico has made but a beginning in manufacturing, although it presents every possible advantage for large industrial enterprises. There are large lumber mills and box factories at Albuquerque and at Alamogordo and numerous smaller sawmills in the mountain counties; a door and sash factory at Albuquerque; a woolen mill at Albuquerque; wool-scouring plants at Albuquerque, Las Vegas, Roswell, and Tucumcari; breweries at Albuquerque and Socorro; railroad shops and roundhouses at Albuquerque, Alamogordo, Estancia, Las Vegas, Raton, Gallup, and San Marcial; a foundry at Albuquerque; a tie-preserving plant at Alamogordo and Las Vegas; planing mills at Santa Fe, Las Vegas, and other towns; sawmills at various points in the timber districts; coke ovens at Dawson, Waldo, and Van Houten; a distillery at Farmington; canneries at Lascruces, Roswell, and Farmington; a creamery at Roswell; lime ovens at Tijeras, San Antonio, Santa Fe, and elsewhere; cement plants at Ancho, Roswell, and Alamogordo; brick yards at Santa Fe, Las Vegas, Albuquerque, Socorro, Farmington, and elsewhere; artificial stone plants at Roswell and Portales; smelters at Silver City and Deming, while ore-treatment plants and concentrators are found in most of the producing mining camps; ice factories, steam laundries, and electric-light plants in most of the towns. There are large printing establishments in the larger towns, and other small manufacturing plants are being established or have been planned.

But there is room for vast expansion, New Mexico producing wool, hides, canaigre, cement, lime, sugar beets, gypsum, rubber plant, gold, silver, copper, lead, zinc, iron, and other minerals and other raw materials that many factories and mills must ship from a distance. It offers in addition abundant and cheap fuel, low-priced land, water power, a superior climate, good home markets, and proximity to Mexican and Pacific coast markets, railroad facilities, moderate-priced labor, all of which are factors in conducting successfully industrial establishments. By legislation various branches of manufacture are exempted from taxation for the first few years after establishment, and the larger towns are always ready to tender every inducement to manufacturers who desire to locate, while there is a total absence of that animosity to capital and enterprise that have caused such costly labor troubles in many manufacturing centers during late years. The opening is especially promising for woolen mills, tanneries, shoe, glove, furniture, paper, and beet-sugar factories, cement mills, glass works, canneries, distilleries, furnaces, iron and steel works, and brick yards.

LUMBER.

One of the big industries of the Territory, is the manufacture of lumber, and the number of sawmills in different parts is quite

large, although many of them are only small power plants. About 5,000,000 acres are covered with merchantable lumber. Extensive lumbering operations are at present being carried on in the Sacramento Mountains, in Otero County, there being sawmills, tie preserving, and planing mills at Alamogordo; in Rio Arriba County, where a railroad has been built into the timber district; in Valencia and McKinley counties, where the American Lumber Company is carrying on operations upon a large scale, the lumber being sent to a large mill at Albuquerque; and upon a lesser scale in Taos, Santa Fe, Lincoln, Colfax, Sandoval, Torrance, San Miguel, Mora, Grant, and other counties. New Mexico timber, which is mostly pine, is used in building operations and for bridges and railroad purposes. Hundreds of thousands of pine and spruce railroad ties are also made annually. The establishment of large forest reserves has assured the future of the timber supply, even though the cutting of timber on the reserves is much restricted.

RAILROADS.

Railroad construction began in New Mexico in 1879, and since then 2,500 miles have been built, while nearly 400 miles are under construction at the present time, not to speak of companies incorporated to construct about 1,000 miles more in the very near future. To-day there is not a county without a railroad, while several counties enjoy the competition of several roads. The railroad centers of the Territory are Santa Fe, Deming, and Lordsburg, each having three railroads; all the lines at Santa Fe being terminals. Other towns have two lines, while a number of others are situated at junctions of main and branch lines. The principal system is the Atchison, Topeka and Santa Fe, which, with its main and branch lines, reaches and penetrates Colfax, Mora, San Miguel, Santa Fe, Sandoval, Bernalillo, Valencia, McKinley, Socorro, Donna Ana, Sierra, Grant, Luna, Chaves, Eddy, and Roosevelt counties, and with the Eastern Railroad of New Mexico now building, will, in addition, traverse Lincoln, Guadalupe, Torrance, and Valencia counties. It has a mileage of 1,100 miles in the Territory without the Eastern Railroad of New Mexico, part of which has been completed. Several of its depots are the finest structures of the kind in the Southwest. The larger towns that are upon its lines are: Albuquerque, Las Vegas, Santa Fe, Raton, Deming, Lascruces, Silver City, Roswell, Carlsbad, Gallup, Portales, Socorro, Magdalena, Belen, Springer, Wagon Mound, Cerrillos, Bernalillo, Los Lunas, Artesia, Hagerman, and Texico. The coal camps of Van Houten, Blossburg, Gardiner, Johnsons Mesa, Madrid, Carthage, and Gallup are tributary to it. Next in mileage, although one of the newest roads in the Territory, is the El Paso and Southwestern, which has 636 miles of track. It traverses the counties of Donna Ana, Luna, Grant, Otero, Lincoln, Guadalupe, Quay, San Miguel, Mora, and Colfax, and contemplates a railroad through San Juan and McKinley counties. The larger towns on its lines are: Deming, Alamogordo, Santa Rosa, Tucumcari, Tularosa, Lordsburg, Hachita, and Roy, while the coal camps of Capitan and Dawson are tributary to it.

The Denver and Rio Grande Railroad has 300 miles of track, including a lumbering line in Rio Arriba County, known as the Rio

Grande and Southwestern, and a line that has been just built from Durango, Colo., to Farmington, San Juan County, 50 miles of which are in New Mexico. With the exception of the latter branch, this mileage is narrow gauge. This company enters Santa Fe, Taos, Rio Arriba, and San Juan counties. The principal towns on its lines are Santa Fe, Espanola, Chama, Aztec, and Farmington. The coal mines of Monero, Rio Arriba County, and in the La Plata section, San Juan County, are tributary to the road.

Next in mileage is the Santa Fe Central, which has 120 miles constructed and in operation, and has 60 miles under construction. It traverses Santa Fe, Sandoval, Torrance, and Lincoln counties, and its extensions now under construction will enter Bernalillo County, while contemplated extension of 200 miles to Durango, Colo., from near Albuquerque, and of 102 miles from Torrance to Roswell, will traverse Chaves, Rio Arriba, and San Juan counties in addition to the counties named. The principal towns on its line are Santa Fe and Estancia. The Hagan coal fields are tributary to it.

The Southern Pacific has 167 miles of track in the Territory, and traverses Dona Ana, Luna, and Grant counties. The principal towns on its lines are Deming and Lordsburg.

The Rock Island system has 112 miles of track, entering Union, Quay, and Guadalupe counties. Santa Rosa and Tucumcari are the principal points on its line.

The Colorado and Southern has 88 miles in the Territory, all in Union County, the principal towns on its line being Folsom and Clayton.

The Colorado and Arizona Railroad has surveyed a line from Durango, Colo., to Cochise, Ariz., the greater part of which will pass through New Mexico, cutting through San Juan, McKinley, Valencia, and Socorro counties.

Various other companies have been incorporated or have surveyed lines that will be constructed at some future day, but upon which no actual work has yet been done.

HOW TO OBTAIN LANDS.

Land is at the basis of all wealth, and New Mexico is one of the few parts of the world that has yet millions of acres for home seekers. Its public domain comprises 52,000,000 acres, all subject to one or the other forms of homestead, desert, or mineral entries. The Territory also has extensive areas of land to lease or sell, while the Santa Fe Pacific Railway owns an extensive grant of land in Valencia, McKinley, and San Juan counties. Land can be bought cheaply from companies or individuals owning land grants or from private owners. Land withdrawn under the reclamation act will be thrown open to settlers as soon as the contemplated reservoir projects have been constructed.

A GENERAL INVITATION.

New Mexico wants more people; it needs them; it has room and resources for them. It offers to immigrants a fine climate, free homesteads under the land laws of the United States, great natural resources; to the health seeker, health; to the tourist, scenic and historic attractions; to the sportsman, good fishing and hunting; to the

summer and winter guests, the best summer and winter climate in the world, hot and cold mineral springs, mountain retreats, ranch resorts, good hotel accommodations, and the comforts and luxuries of modern communities; to the farmer, good crops, not threatened by climatic vicissitudes; to the coal miner, permanent work and good pay; to the prospector, extensive mineral deposits; to the mechanic and professional man, the same and better chances than any other country that is settling up—room on the top if he deserves it; to the stockman, a free range and the very climate for stock raising; to the manufacturer, openings to establish factories and mills that should yield good profits; to the real-estate man, cheap land and a chance to make money by putting up modern residences, and to the capitalist, opportunities to make more money and to buy anything that his heart may desire, from a gold or copper mine worth a million dollars to a land grant as big as a European kingdom.

Health seekers should come here by all means. They should come before disease has made inroads upon the system if they want to be sure of recovery; they should come if the disease has advanced noticeably for a possible cure or a certain prolongation of life; but they should not come without means or provision to pay their way the first year at least. The jobs for health seekers are few and far between, and a health seeker should not work for a living for a time after coming if he desires to regain his health speedily. Living is about as reasonable in cost here as anywhere else in the United States. The health seeker can live in a tent on a vacant lot or out on the mesa, and if he cooks his own meals living need not cost him $4 a week. At a tent city, a hotel, or a sanitarium he can have lodging and board from $7 to $25 a week and at private houses from $6 to $15 a week.

The laws of competition and trade are the same here as elsewhere. Fortunes are very seldom made in one day. The poor man who comes here must expect to work and to work hard for a living; the capitalist must invest and invest judiciously to make money. After this is said, however, it can be truthfully asserted that New Mexico offers great opportunities to the honest and intelligent worker to become independent and to gain affluence and civil and political prominence, and to the shrewd and careful capitalist greater and surer returns on his investment than any other section on the face of the globe.

It is to the home seeker, to the farmer, to the stock raiser, to the miner, to the merchant, to the manufacturer, to the capitalist, that New Mexico is an undeveloped empire of magnificent resources, which throws a peerless climate into the bargain with the rich returns that are offered to the man with capital to invest or with brain and brawn to apply.

REPORTS OF FEDERAL OFFICERS.

The reports of the surveyor-general, the local land offices, the U. S. coal-mine inspector, and the U. S. Geological Survey, Indian agents, and superintendents of Indian schools will all be found embodied in the reports of the Commissioner of the General Land Office and the Commissioner of Indian Affairs, respectively.

The reports of the national sanitariums at Fort Bayard and Fort Stanton will be found in the reports of the Secretary of War and the Surgeon-General of the Marine-Hospital Service, respectively.

The reports of the United States attorney and United States marshal will be found in the report of the Attorney-General.

The crop reports, crop review, and stock reports, with climatological data, will be found in the publications of the Agricultural Department.

PART V.—COUNTIES, CITIES, AND TOWNS.

New Mexico has an area of 122,469 square miles, exceeding that of the Kingdom of Italy, with its 35,000,000 of people. Its population, according to the best and latest estimates, is 300,000, an increase of 100,000 since the census of 1900. The Territory is divided into 25 counties. Along the northern or Colorado boundary are the counties of Union, Colfax, Taos, Rio Arriba, and San Juan. Along the eastern boundary, bordering on Oklahoma, is the county of Union; bordering on Texas, the counties of Quay, Roosevelt, Chaves, and Eddy; bordering on Texas in the south, the counties of Eddy, Otero, and Donna Ana; bordering on Mexico, the counties of Donna Ana, Luna, and Grant. On the western boundary, bordering on Arizona, are Grant, Socorro, Valencia, McKinley, and Sandoval counties. The north central counties are Mora, San Miguel, Santa Fe, Guadalupe, Torrance, Sandoval, and Bernalillo. The south central counties are Lincoln and Sierra.

BERNALILLO COUNTY.

This is the smallest and most populous of the counties. It covers 1,240 square miles, an area exceeding that of the State of Rhode Island. The population is 26,000, of which 15,000 live in Albuquerque, the county seat, and its immediate vicinity. The assessed valuation in 1905 was $3,572,454. The county is a little north of the center of the Territory and is bounded on the north by Sandoval, on the east by Santa Fe and Torrance, on the south by Valencia, and on the west by Valencia County. Post-offices are Alameda, Albuquerque, Carpenter, Chilili, Griegos, Isleta, Martinez, Milagros, Old Albuquerque, Padillas, and Pajarito.

The Sandia Mountains, in the eastern part, rise to an elevation of 10,000 feet. The south Sandia Mountain has an altitude of 9,500 feet. The San Ysidro Mountains, in the eastern part, attain an elevation of 8,000 feet. The northern end of the Manzano Mountains is also in the eastern portion of the county and attains an altitude of 10,000 feet. From these mountain ranges the land slopes abruptly to the Rio Grande, west of which it rises to the mesas, flanking the Rio Puerco on each side. These two rivers are the principal and only perennial streams of consequence, although the Arroyo Salado, tributary to the Rio Puerco, often carries large volumes of water. Mineral springs are located in the Sandia Mountains, those best known being the Coyote Springs and Whitcomb Springs, the latter being a pleasant summer and winter resort. One-third of the area of the county is included in land grants, the largest of which are the Atrisco, the Chilili, the Alameda, the Isleta Pueblo, the San

Pedro, the Antonio Sedillo, the Pajarito, the Albuquerque, the Bernabe Montano, the Elena Gallegos, the Sandia Pueblo, and the Canyon de Carnue grants. On July 1, 1905, there remained subject to public-land entry 225,195 acres, 143,133 of these unsurveyed, but none of this land contains living streams. The county is in the Santa Fe land district. Much of it is mountainous, and but a small part is fit for agriculture unless water is developed by the sinking of wells. A considerable portion is good range and some of it valuable coal and mineral land. In the eastern part, on the eastern slope of the Sandias, there is placer ground, and extensive coal croppings are there found as well as along the Rio Puerco, west of the Rio Grande.

The Tijeras Canyon district has been prospected more or less during the past fifty years, and in certain localities along the lime and porphyry contact gold and silver are found in the sulphides of iron and copper, although the district has never been a producer to any extent. The principal properties are the Silver Dollar, the Carnuel, the Long View, and the Magnolia. In the Hell Canyon district, south of Tijeras Canyon and in the northern foothills of the Manzanos, the Milagros and Golden groups are situated, carrying gold and copper. Placer gold is reported to exist in the gulches and arroyos of that section. Near by is the Coyote district, better known for its mineral springs than its mines, although at a very early period the Spaniards prospected near Chaves Spring, and several old prospect holes are scattered over the district. The principal industries are manufacturing, farming, fruit growing, stock raising, and railroading. Its central location, great diversity of topography and fine climate, railroad facilities, and the fact that the Rio Grande, flanked by a fertile valley on each side, cuts through the county from north to south, places its prosperity on a permanent basis. There are 250,000 acres which eventually can be placed under irrigation, and 300,000 acres are considered good pasture. In seasons of average rainfall the grass grows abundantly, and, owing to its peculiar character, cures on the ground during the fall, and instead of washing out and becoming valueless, like the ordinary grass, it is like hay and makes as good feed in the winter as in the summer. The total area under ditch at present is 15,000 acres, of which about 5,000 are cultivated. There are several available reservoir sites and room for modern irrigation systems.

The soil of the valley is composed almost entirely of detritus from the mountains and foothills, and lacks only the addition of a very little animal or vegetable matter now and then to keep it rich indefinitely. The true farming policy is to have small farms, closely cultivated, and yielding as land can only be made to yield under irrigation. In addition to the ordinary grain and vegetable crops, tobacco does especially well, although not extensively cultivated. Some of the soil being alkaline, asparagus proves profitable. Besides the Rio Grande, the Rio Puerco flows through the county from northwest to southeast, but as it has cut its bed deep into the soil there is not much irrigation along the upper portion of the stream. The Santa Fe Railway traverses the county. The Santa Fe Central cuts through the eastern part and the Santa Fe Pacific forms a junction with the Santa Fe at Isleta, in the northern part of Valencia County. The Albuquerque Eastern, as a branch of the Santa Fe Central, is under

construction from Moriarity to Albuquerque, through the Tijeras Pass in the Sandias, a distance of 43 miles. The county has 40 miles of railroad, to which the Albuquerque Eastern, when completed, will add 25 miles. Isleta, one of the largest Pueblo Indian villages, is situated in the southern part, and as it is at the junction of the Santa Fe Railway and the Santa Fe Pacific Railroad it is much visited by tourists.

ALBUQUERQUE.

The county seat and the largest city of New Mexico is Albuquerque. In every sense modern and progressive, it is the acknowledged commercial center of New Mexico. Its merchants cover a trade territory larger than the six New England States, which gives it a wholesale trade greater than that of any eastern city of three times its size. Its population, according to the census of 1900, was 6,326. Old Albuquerque, which is practically a portion of the city proper, had 1,191 people, and more distant surburban precincts have 4,613 inhabitants, giving the city and suburbs a population of 12,042. A very conservative estimate places the increase since 1900 at 3,000, making the present total more than 15,000. It has a fine system of public schools, with a large and modern schoolhouse in each ward, and a handsome high school building centrally located. There are, in addition, a number of good private schools, while denominational institutions are maintained by the Methodists, Catholics, and Presbyterians. It is also the seat of the University of New Mexico, established and maintained by the Territory and endowed by the United States with a liberal donation of public land. The university buildings are located upon an eminence about 200 feet above the general level of the town, with an unobstructed view for many miles in every direction. With the Sandia Mountains 12 miles east for a background, the view takes in the Jemez Mountains, 60 miles north; the San Mateos, 70 miles west, and the Socorro and Magdalenas, 75 miles south, while with the glass may be seen the Mogollons, more than 225 miles to the southwest. The institution has a first-class faculty and ranks among the best western colleges. Hadley Hall, a handsome $20,000 structure, gives the university a department devoted exclusively to the study of climatology, with a special reference to the effect of climate on the cure and prevention of tuberculosis and kindred diseases, the only institution of the kind in the United States.

Albuquerque is also the location of a large United States Indian training school with more than 300 pupils. The city is the headquarters of the second judicial district and of the United States marshal's office for New Mexico. The judicial district comprises Bernalillo, McKinley, Valencia, and Sandoval counties. The Territorial district attorney for the above counties, as well as Torrance County, also makes his headquarters at Albuquerque. In the matter of religious advantages the town is very thoroughly equipped. All the leading Christian denominations have congregations, with good commodious houses of worship. There are places for public entertainment and amusement, including the Elks' Opera House. One of the institutions of Albuquerque worthy of special notice is the Commercial Club. This represents a successful combination of

business and social interests, and possesses within the one organization all the principal features of a chamber of commerce and a social club. There is a system of waterworks, deriving its supply from deep wells. There are also electric light, power, and gas plants. The streets are lighted by electricity. The city has an electric street railway and free delivery of mail. Hotel facilities are good. Water for irrigation purposes can be secured from driven wells from 10 to 30 feet deep anywhere in the valley. The streets are graded, and most of them paved with natural cement from the neighboring hills, and laid upon a foundation of cobblestones and gravel, making a thoroughfare very firm, smooth, and durable. Good sidewalks line the principal streets, the popular material for this purpose being artificial stone made of sand and Portland cement upon a foundation of gravel. St. Joseph's, one of the largest sanitariums in the West, is located here and is conducted by the Sisters of Charity. The Santa Fe Railway Company has built at this point the finest and most commodious station building and hotel on the line of its road between Chicago and San Francisco. Shops of the Santa Fe Pacific Railroad, furnishing employment to over 700 men, and the Santa Fe Pacific hospital are located here.

The manufacturing interests, in addition to the railroad shops, are represented by the large lumbering mills, box, door, and sash factories of the American Lumber Company; woolen mill, tie-preserving plant, foundry, and machine shops; a brewery and ice factories; flouring mills, mineral-water establishments, planing mill, brickyards, cigar factories, broom factory, wool-scouring plant, steam laundries, wagon factory, and smaller establishments. Of the 22,000,000 pounds of wool produced annually in New Mexico, Albuquerque merchants handle fully one-fifth, a portion of which is now manufactured at home by a woolen mill of fair capacity. This enterprise is very comprehensive in its scope, and includes all the processes of pulling, scouring, dyeing, tanning, and manufacturing wool and leather. The American Lumber Company has erected a large sawmill just northwest of the city, with a capacity of 200,000 feet of lumber per day, as well as a box factory and door and sash mill. There are openings here for a canning factory and a beet-sugar factory, not to speak of a tannery, shoe and furniture factories, and other establishments. The census of 1900 credited the county with $864,604 capital invested in manufactures, $793,644 of that being invested in Albuquerque. This gave employment to 1,140 men, and the value of their products was $2,007,772 a year. These figures have been doubled by this time. Nearly all lines of business—commercial, mechanical, and professional—are represented. The town has several prosperous banking institutions. There are two daily papers: The Albuquerque Journal, issued every morning, and the Albuquerque Daily Citizen, every evening except Sunday; a number of weekly papers in English and Spanish, and several monthly publications. The town also possesses the largest and best free public library in the Territory, which is maintained by a special tax by the city and which occupies a fine building donated by a public-spirited citizen.

Albuquerque has good railway facilities. The Atchison, Topeka and Santa Fe gives it access to all points north and south, while the Santa Fe Pacific gives it a direct communication with all the country

between the Rio Grande and the Pacific coast. That portion of New Mexico directly east of Albuquerque has never been in close touch with the city by rail, but the want of first-class facilities in that direction will be supplied by the Santa Fe Central and the Albuquerque Eastern. The former road is in operation, while the latter is in course of construction. The climate of Albuquerque, while it possesses the characteristics of that of New Mexico in general, is milder in winter than that of the more northern towns, and owing to its lower altitude the city is a sanitarium for those health seekers who can not bear the more severe winters and the greater altitude of the northern counties. During the summer months the near-by city of Santa Fe and the many convenient mountain resorts offer a refuge from the heat, which is at no time as oppressive as it is in the more humid East. It is only during the afternoon hours in July and August that the maximum temperature at times reaches 100°, which seems 10° to 20° lower than it would be in a more humid climate.

CHAVES COUNTY.

Area, 9,599 square miles, and a population of 16,000. Bounded on the north by Roosevelt and Guadalupe counties, on the east by Cochran and Yoakum counties, Tex., on the south by Eddy and Otero, on the west by Otero and Lincoln counties. It is a plains county, the eastern part being the Staked Plains. The foothills of the White and Sacramento mountains lie on its western border and of the Guadalupe Mountains on its southwestern boundary. Sand hills border the Staked Plains. The Pecos River flows through steep bluffs in the northern part. The Pecos is the principal river, and receives as tributaries from the west the Arroyo Yeso, Arroyo Conejos, Deep Creek, Salt Creek, the Hondo, the Berrendo, and the Rio Feliz. The headwaters of the Penasco and several independent water courses are the streams of the southwestern part, known as the "Lower Penasco country." The county has many perennial and several mineral springs. The area still subject to entry under the Federal land laws on July 1, 1905, was 4,993,088 acres, of which 2,016,673 acres were unsurveyed. Chaves is one of the most rapidly growing of the counties, and while formerly the open range live-stock interests were the mainstay it is to-day a great producer of alfalfa, cereals, celery, cantaloupes, and fruit.

Its system of artesian wells and abundance of irrigation water from the Pecos and tributaries have brought to it a new glory.

The splendidly stocked Hereford and Shorthorn breeding ranches and the sheep and wool growing industries, however, are expanding, for the greater part of this little empire always will be grazing land pure and simple.

The irrigation systems at present obtain their supply of water from four sources: The immense springs in the vicinity of Roswell, fed by subterranean streams of artesian nature, and from which flow five limpid streams—the North Berrendo, Middle Berrendo, South Berrendo, North Spring, and the South Spring rivers (all are stocked with black bass, offering sport to the disciples of Izaak Walton); from artesian wells, which are making this region famous; from flood water of the great watershed of the White Mountain region; from the canal system of the Pecos Valley, beginning near Roswell, and in

which millions of dollars have been invested, and which, taken as a whole, is the finest in the United States.

To this will be added the Rio Hondo reservoir, under construction by the reclamation service, and which will be completed in the fall of 1906. It will furnish water for 15,000 acres of land near and including part of Roswell. The Pecos River carries a large volume of water and divides the county into halves, crossing it from north to south.

In the artesian-well district are 475,000 acres of cultivable fertile soil, and there are over 300 flowing wells in the district and more coming in daily. The first flow is reached at a depth of from 150 to 200 feet, and it costs from $200 to $250 to drill a well to reach it. The second flow is tapped at from 600 to 800 feet, and a well to it costs $2,000 to $2,500. A fair average of the flow is 600 gallons a minute, although a maximum of 2,500 gallons is reached by one well and there are others flowing from 1,000 to 1,500 gallons a minute. With a storage reservoir one well furnishes enough water to irrigate 160 acres of land.

The city of Roswell alone now has 100 of these wells. Many have sufficient power to drive small hydraulic rams. The county has 12,000 acres in apple orchards, producing good fruits. Plums, pears, and peaches, the last on high ground, do well. Cantaloupes and melons attain their greatest development in flavor and general character right here, and celery has become a staple crop. Oats, rye, barley, alfalfa, sorghum, millet, Kaffir corn, milo maize, wheat, potatoes, onions, and garden vegetables flourish. A specialty is being made of high-grade cattle, one ranch having 1,200 head of superb Herefords, including the famous Ancient Briton, that cost $4,000. The raising of hogs on a large scale on alfalfa is successful on the Chisum ranch. The raising of mules on a similar scale has been undertaken on a large alfalfa ranch. The assessment in 1905 was almost $3,222,335. There are 300,000 head of sheep and 100,000 cattle in the county. The county has almost 5,000,000 acres of public lands subject to entry, an area equal to that of the State of Maryland. The post-offices are: Alellen, Dexter, Elk, Felix, Glen, Hagerman, Kenna, Lower Penasco, and Roswell.

ROSWELL.

The county seat is Roswell, a city of 7,500 inhabitants, the fourth largest town in New Mexico and growing at a rapid rate. It is a pretty and progressive community, situated in the commercial, lineal, and geographical center of the Pecos Valley Railroad system. It is located near the confluence of the abundant waters of the Pecos and Hondo rivers, and is the supply and shipping point of a large area for both cattle and sheep, surrounded by fertile lands and exhaustless irrigation resources, including the canal and the artesian wells. The town is daily adding to its importance and is one of the most active and prosperous business centers of New Mexico. Roswell has scores of brick business blocks and residences; is the site of the New Mexico Military Institute; has two large modern public school buildings; two newspaper plants—one daily, The Record, and a weekly, The Roswell Register; national banks; an elegant and commodious club; an ice factory; a wool-scouring plant; a creamery; an artificial stone and

cement plant; an electric-light plant; many churches; numerous wholesale and retail houses; and tributary and extensive stock yards. The town is incorporated. It is the principal point on the projected Torrance-Roswell and Gulf Railway, an extension of the Santa Fe Central. An automobile line to Torrance at present furnishes passenger and transportation facilities with the central portions of New Mexico, the Pecos Valley and Northeastern Railway, a part of the Santa Fe system, giving similar facilities with the south, north, and east. The city has a public library and a commercial club. It is the headquarters of the fifth judicial district and has the land office for Chaves, Eddy, Lincoln, and parts of Roosevelt and Otero counties. The office of the Territorial district attorney for Chaves, Eddy, and Roosevelt counties is located at Roswell. The climate is noted for its healing effect in pulmonary affections, and every year sees an added influx of health seekers.

HAGERMAN.

The second largest settlement is Hagerman, and was laid out in 1893 by the Pecos Valley Town Company, in Chaves County, and was fittingly named in honor of J. J. Hagerman, of Colorado Springs, whose enterprise, sagacity, and capital were the origin of the present great development. It was incorporated in 1905, is situated 24 miles southeast of Roswell, and is surrounded by thousands of acres of the choicest agricultural, fruit, and grazing land in the country. It has a population, with its immediate surroundings, of about 800, and the intelligence, thrift, and morals of its people are plentifully attested by fine brick business houses, attractive and commodious homes, schools, and churches, a weekly newspaper, a national bank, careful observance of approved sanitary principles, and a general air of neatness and good order. The town and country adjacent have been settled by progressive and energetic people, chiefly from Illinois, Iowa, Nebraska, and Kansas, and their wisely directed efforts have already transformed the barren waste of ten years ago into a veritable garden spot that blooms like a rose. With the magic touch of water the careful cultivation has achieved wonders here.

The magnificent irrigation system constructed by the Pecos Irrigation Company extends from a point 4½ miles due east of Roswell 30 miles south, and irrigates the fine body of land tributary to the town of Hagerman, and is now controlled by the Felix Irrigation Company. The water supply thus afforded has been increased by the development of artesian water in many places. Many small farms are plentifully watered from these never-failing wells, and much of the supply in the canals is conserved for use on large tracts farther down the valley. The value of these wells will be understood by readers unfamiliar with the facts when it is explained that a well flowing 100 gallons a minute, if none were lost by seepage or evaporation, would cover 78½ acres to a depth of 24 inches in a year. Allowing one-half for loss by evaporation in reservoirs and ditches, a 400-gallon well will then furnish 24 inches for a quarter section during the year. Considering that less than 20 inches of rainfall are enough to raise a crop, when much of it comes out of the season and often in injurious excess, and 8 inches properly distributed are sufficient, then it will be readily understood that 24 inches stored in reservoirs and

available whenever needed is more than ample. This is not theory. It has been demonstrated both at Roswell and at Hagerman year after year.

LAKE ARTHUR.

This is a new but prosperous agricultural settlement in the southern part of the county with business houses, churches, schools, and a weekly newspaper.

DEXTER.

This town was recently laid out and is 18 miles south of Roswell. It has a weekly newspaper, several general stores, and is a prosperous agricultural community similar to Hagerman.

COLFAX COUNTY.

Nature has blessed Colfax County abundantly, and man is doing his best to make it one of the richest sections of the "Sunshine Territory." The area is 3,897 square miles, it being one of the smaller counties of the Territory. It is bounded on the north by Las Animas County, Colo.; on the east by Union; on the south by Mora, and on the west by Taos. Its western part is very mountainous, while its eastern portion consists of lofty mesas, cut deeply by streams and arroyos. The Taos and Cimarron ranges rise to elevations exceeding 13,000 feet, their loftiest points being Taos Peak, 13,145 feet; Costilla Peak, 12,634; Elizabethtown Baldy, 12,491; Agua Fria Peak, 10,965. The Raton Mountains are scarcely less lofty, while some isolated mountains, like Laughlins Peak, rise to 8,950 feet; the Tinaja Peak, Clifton Peaks, and Green Mountains are higher. A characteristic of its topography is its high mesas, upon some of which good crops are raised without irrigation. These are Johnsons, Black Lake, Barela, Eagle Tail, Gonzales, Rayado, and Green Mountain mesas, and Vermejo and Rocky parks. In the eastern portion are many dead volcanoes, extinct craters, and extensive lava fields.

Colfax is in the drainage basin of the Canadian River and is well watered, the principal tributaries of the Canadian being the Vermejo and Cimarron. Other tributaries of the Canadian in the county are the Jaritas, the Ocate, the Llano, the Tinaja, Crow Creek, the Little Crow, and the Chicorica, which has as tributaries the Una de Gato, Raton Creek, and Eagle Creek. The Cimarron has as tributaries the Van Brimmer, the Cerroso, the Ponil, the Moreno, the Rayado, and Uras Creek, while the Ocate has as tributaries the Sweetwater, the Vermejo, and the Arroyo Caliente. The headwaters of Ute Creek, a tributary of the Canadian, are in the eastern part. The Coyote, a tributary of the Mora, rises in the southeastern part of the county. In this part are also several beautiful lakes, the principal being Black Lake, near the Mora County line. There are many fine reservoir sites, and the Maxwell Land Grant Company has constructed several irrigation systems excelled only by those of the lower Pecos Valley. The principal of these are the Cimarron, or Springer, system, which takes up the drainage of 30 miles of the majestic Taos Range, and the Vermejo system, along which there are 20 reservoirs.

The county has a population of 15,000 and its assessed valuation in 1905 was $2,960,815. Its post-offices are Aurora, Baldy, Bell, Black

Lake, Blossburg, Catskill, Chico, Cimarron, Colmor, Dawson, Dorsey, Elizabethtown, Gardiner, Hebron, Lynn, Maxwell City, Ponil, Raton, Rayado, Springer, Van Houten, and Vermejo. The county is rich in agricultural and stock resources, the chief industry of its southern part being cattle raising and agriculture. Its main industry, however, is mining, principally coal mining. The Maxwell Land Grant Company, which at one time owned more than one-half of the area comprised in the county and has done much for its development, still has on the market thousands of acres, which it sells to homeseekers or leases upon very liberal terms. The area still subject to Federal land entry on July 1, 1905, was 515,256 acres, of which 23,040 acres were unsurveyed. The western and central portions belong to the Santa Fe land district, and the eastern portion, 630,000 acres, to the Clayton district.

The gold-mining districts are located in the western part of the county, the principal being the Moreno, Willow Creek, Ute Creek, and Ponil, all upon the slopes of Mount Baldy, which has an altitude of 12,491 feet, and whose base is many miles in circumference. The entire area flanking the peak is a placer bed, the principal operations being conducted in the Moreno, the Ute Creek, and Willow Creek valleys, the El Oro dredge on the first named producing one-third of the gold credited to the Territory during the past year. Gold in this valley was discovered in 1866 and resulted in a stampede which increased the population of Elizabethtown to 10,000 and made it the first incorporated city in the Territory and for a time the county seat of the newly organized county of Colfax. About $2,500,000 in gold have come from the placer fields around Mount Baldy.

In the Moreno district, in addition to the El Oro dredge, Joseph Lowry has been successfully working a hydraulic plant the past thirty years. The Lynch Brothers and other producers are also located in this valley. In Willow Creek Valley the principal placers are the Last Chance and Grub Flat placers and the Brown and Kaiser diggings. In the Ute Creek Valley the Dennison placers and the Pierson and Mead diggings are the principal locations. On the South Ponil are the Wallace placers. Among New Mexico's bonanzas has been the Aztec lode on Ute Creek, which has produced almost $1,500,000. Other lodes in the Ute Creek district are the Montezuma, Thelma, Black Horse group, Rebel Chief group, Maid of Erin, Rosita, Puzzler, Monarch, Homestake, Bull of the Woods, Paragon, Little Jessie, Sweepstake, and Real. In the Ponil district are the French Henry, the Smuggler, Guerilla, Mountain Witch, Paymaster group, Black Jose, Henry Bluff, Harry Lyons, and Mount Vernon. In the Willow Creek district are the Golden Ajax, Legal Tender, Hidden Treasure, Golden Dollar, Ophir, Only Chance, North and East Pacific, Grand View, Mystic, Victor, Indiana, Alabama, Little Wonder, Mark Twain, Grand Duchess, and Aristocrat. In the Moreno district are the Red Bandana group, Abraham Lincoln, Heart of the World, Iron Mask, North Star, Baldy Mountain Tunnel, Bobtail Senate, Pinochle, Imperial No. 2, Sheridan, Golden Era, Gold Leaf, and Admiral Dewey. Five miles northwest of Elizabethtown is the Hematite district, in which are the Black Wizard, Iron Bird, Challenge, Kentucky, Last Chance, and Gold Belle. Ten miles southwest of Cimarron is the Urraca district, with both placer and lode prospects. The Mocking Bird group and the Big Missouri are in

this district, which is also known as the Cimarroncito or Bonito district. All the districts enumerated are on the Maxwell land grant.

It is as a coal producer that the county excels. Most of its coal is of coking quality, and its fields are among the most extensive in the Territory, covering 345,000 acres, as far as prospected, with 2,500,000,000 tons in sight. The net output has passed a million tons a year, the Dawson mines alone producing half a million tons last year, with the Willow mine at Van Houten a close second. The capacity of either of these mines can be increased to 5,000,000 tons a year. At Dawson 500 coke ovens are in operation, which number will be increased shortly to 750. A branch railroad is being built at present to Tin Pan Canyon and Johnston's mesa, which is underlaid with heavy coal seams. The production of these mines, the principal of which is the Brilliant mine, will next year rival that of the mines at Dawson and Van Houten. The Climax coal mine as a little over a mile northwest of Raton and produces about 5,000 tons of coal a year. The Sugarite mine is located on the east slope of Bartlett mesa, 3½ miles northeast of Raton, and produces 5,000 tons a year. The Dutchman mine is 6 miles northwest of Raton, and produces about 200,000 tons a year. Other mines with a small output are the Llewellyn, the Turner, the Sperry, and the Honeyfield. The climate is fine, and the altitude, which ranges from 5,000 to 12,000 feet, offers invariably cool nights and cool summers, a dry, rarefied atmosphere, and protection from the north and west winds.

The principal agricultural sections are the valleys of the Sweetwater, the Rayado, the Cimarroncito, the Cimarron, the Ponil, the Vermejo, the Red River, the Una de Gato, the Chico, the Moreno and the Piedra, the Vermejo Park, the Black Lake section, and Johnson and Barela mesas, on which last two named crops are raised without irrigation. Wheat, barley, potatoes, beets, cabbages, carrots, parsnips, turnips, artichokes, celery, and other staple crops are produced. The region around Springer is especially adapted to the cultivation of the sugar beet. The Springer, Mills, Dawson, Chase, and other large ranches are famous for their fruit and alfalfa crops and their beautiful mansions. Apples, peaches, pears, and plums are the leading orchard products. The county is very favorably located for stock raising. The mild winters, the public range, and the cheapness of the grazing privileges on the Maxwell grant, as well as a good deal of water and of shelter, make it a fine stock section. Timber is also a source of wealth, but only in the western part. On the slopes of the Raton and the Taos ranges there are 500,000 acres of merchantable timber, principally yellow pine and cedar. The Santa Fe Railway cuts through the county from north to south, and has branches to the temporarily abandoned coal camps of Gardiner and Blossburg and to the camps at Van Houten and Johnson's mesa. The Dawson Railway enters its southeastern corner and runs northwest to its present terminus at Dawson. The St. Louis, Rocky Mountain and Pacific Railway has a line surveyed from Des Moines near the eastern boundary of the Territory and a station on the Colorado and Southern to Elizabethtown, on the western boundary of the county, and has commenced grading, and the Colorado and Southern has a lumber line from Trinidad, Colo., to Catskill, in the northwestern part. The county has good wagon roads. It is a leader in education and every settlement has its schoolhouse and church.

RATON.

The county seat and fifth largest city in New Mexico is Raton. It is one of the most prosperous and progressive cities in the Territory. The last census gave it a population of 3,450, but with its suburbs it now has 8,000 people, and is adding to its population at the rate of 10 per cent each year. It is called the Gate City of New Mexico. In ten years, from 1890 to 1900, it increased its population 200 per cent. It is situated in the shadow of the Raton Mountains and is in the center of the finest coal belt in the Southwest, surrounded by prosperous stock ranges, and has tributary a wide agricultural section. It is also in a promising oil field and an important division point on the Atchison, Topeka and Santa Fe Railway, the company maintaining shops there. This railway is at present double tracking its line from Raton over Raton Pass to Trinidad, Colo. Over $50,000 a month are distributed by the railroad company at this point. The trade of the surrounding coal camps is transacted at the Gate City, which means a monthly pay roll of $400,000 in and about the city. The commercial lines are well represented and a considerable wholesale business is done. The town has an excellent gravity water system, the water being taken from the Chicorico, a pure purling mountain stream. Thousands of tons of ice are cut every winter and shipped to near-by as well as distant points. The water is piped from a reservoir of 52,500,000 gallons capacity, 500 feet above and 6 miles from the city, and the water company is at present enlarging its facilities.

Raton has a good fire department and two of the finest school buildings in New Mexico and a fine court-house. The streets are well graded and lighted by electricity. The Atchison, Topeka and Santa Fe Railway has recently completed a $50,000 depot. The city has two national banks, long-distance telephone with Colorado points, cheap coal, lumber and building material, and a building and loan association. It has a number of beautiful church buildings, representing several Protestant denominations and the Roman Catholic faith, and a hospital for miners, built and maintained by the Territory. One semiweekly paper, The Range, and one weekly paper are published—The Reporter. The elevation is 6,668 feet. The city attracts many health seekers, who find here a superior climate and comfortable accommodations. The office of the Territorial district attorney for the counties of Colfax and Union is located at Raton.

SPRINGER.

This town was the county seat of Colfax before the honor was bestowed upon Raton, and is second in importance, although only fifth in population in the county, the census crediting it with 558 people. It is the center of a fine stock and agricultural section, and there are oil and coal indications in its vicinity. Cement rock and gypsum beds are located a few miles from that town, and it formerly had a cement plant. Its elevation is 5,769 feet. It is an important shipping point on the Santa Fe Railway and controls the trade of a large extent of the country. Near Springer is an artesian well pouring out mineral water. The town is the trade center for the Elizabethtown, Ute Creek, and Cimarron mining districts and maintains a

daily stage line to these points. It is near the irrigation systems of the Maxwell Land Grant Company. The weekly Colfax County Stockman is published here. The town has a good school system and several churches. The Colorado Telephone Company has extended its long-distance telephone line from Raton to Las Vegas via Springer and other towns along the Santa Fe Railway, thus bettering communications.

DAWSON.

This town site, owned by the El Paso and Southwestern Railway, is beautifully situated and is the terminus of the Dawson Railway. Tributary to it are the coal camps with their neatly built company houses. With surroundings, the town has 4,000 people. Coke ovens to the number of 750 are located there, and in the surrounding country are several fine cattle and fruit ranches.

DONNA ANA COUNTY.

The garden of New Mexico, whose climate in winter approaches that of Egypt in its mildness, has an area of 3,818 square miles, or twice that of the State of Delaware. It is bounded on the north by Socorro and Sierra, on the west by Sierra and Luna counties, on the south by Mexico and El Paso County, Tex., and on the east by Otero County and El Paso County, Tex. It originally embraced a considerable area of what is now Arizona and southern New Mexico. Assessed valuation in 1905, $2,309,412.50; population, 12,000. Of its area, 1,750,000 acres are still subject to entry under the Federal land laws, and lies almost wholly within the basin of the Rio Grande, which flows through it in a southeasterly direction for 100 miles, carrying enough water, if properly stored and distributed, to make it a renowned granary and vineyard. In the eastern part are the almost continuous ramparts of the San Andreas Range, the Organ and Black mountains, attaining their highest elevation in Organ Peak, which is 9,118 feet high, directly east of Lascruces, Black Mountains, and the Franklin Range. San Augustine Peak is 6,002 feet high, while San Augustine Pass, which separates the San Andreas Range from the Organs, has an elevation of 5,654 feet. Pyramid Peak, at the southern extremity of the Organ Mountains, is almost 5,000 feet in altitude. The Caballos Mountains are in the northwestern part of the county, but east of the Rio Grande and between them and the San Andreas Range lies the Jornado del Muerto, or Journey of Death. In the northeastern part is an extensive salt marsh bordering on the white sands, a plain of gypsum. The foothills of the Goodsight Mountains are in the western part, and just southwest of Fort Selden is Roblero Mountain, 5,575 feet high. In the southwestern part are extinct volcanoes and craters and lava fields. Mount Riley, the Guzman and Lookout group, and the Potrillo Mountains are in the extreme southwestern corner. The Rio Grande is the only river entering at the northwestern corner and flowing in a southeasterly direction, leaving the county near the southeastern corner.

There are a number of land grants, the principal being the Donna Ana Bend colony, the Mesilla civil colony, the Santo T. de Yturbide, the J. M. S. Baca, the Brazito, Refugio colony, and Santa Teresa. They are located in the valley of the Rio Grande. In the Organ

Mountains important mining operations are carried on. The Organ district has been a producer for many years. Its principal mines are the Stephenson-Bennett group, carrying lead and silver ores, discovered in 1849. These mines have produced at least $500,000, and are now being worked on a large scale. Other important properties are the Torpedo, the Memphis, the Copper Bar, the Excelsior, the Merrimac, the Little Buck, from which last named $50,000 in gold and silver have been taken from near the surface. Gold Camp lies on the east side of the Organ Range, and its principal properties are the Mountain Chief, the Mormon, the Dona Ana, the Oriental, the Mascot, and the Pharmacy. Some prospecting has been done in the Donna Ana Mountains, where surface indications are good. The Hembrillo district lies at the southern end of the San Andreas Mountains, and its principal properties are the Base, the Little Monte, and the Planet Mars. The best-known region is the Mesilla Valley, lying at an altitude of 3,500 to 4,000 feet. The widest scope of cultivation surrounds the towns of Lascruces, Mesilla Park, Dona Ana, Chamberino, and La Mesa. This part of the valley is miles in width and its soil is very fertile. Orchards come into bearing the second year after planting and saplings develop into trees with rapidity. Its peaches and grapes have carried its fame far and wide. Pears, plums, apples, apricots, nectarines, almonds, pecans, English walnuts, and semitropical fruits and vegetables are grown. There is a cannery at Lascruces, and wine and brandies are manufactured. There are six flour mills and an ice factory in the county.

About 60,000 acres are under ditch, although only two-thirds of this area is under cultivation. In the valley there is a tremendous underflow from the Rio Grande, which makes water available by pumping. The National Government has completed the preliminary work for the construction of an irrigation system by damming the Rio Grande at Elephant Buttes, in Sierra County, north of the northern boundary of Donna Ana County, which would furnish abundant water to reclaim the entire Mesilla Valley, and will build a diverting dam in the Rio Grande at Penasco Rock, 18 miles north of Lascruces. Fully 110,000 acres will be reclaimed in the county by these two projects, which will entail an expenditure by the reclamation service of exceeding $7,200,000. Cultivated land in the vicinity of Lascruces may be purchased at from $20 to $50 per acre. There are satisfactory railroad facilities, the mileage being 160. The Santa Fe Railway crosses it from the northwest to the southeast, the Southern Pacific in the southern part from east to northwest, and the El Paso and Southwestern along the southern boundary from east to west. The county has 3,000,000 acres of range, which furnish pasture the year around for cattle, sheep, goats, and horses. In the Organ and San Andreas mountains there are successful goat ranches. The postoffices are Aden, Anthony, Berino, Chamberino, Donna Ana, Earlham, Garfield, Hatch, Lascruces, Kent, Mesilla, Mesilla Park, Organ, Rincon, Rodey, and Victoria. Other settlements are Bosque Seco, Santo Tomas, San Miguel, La Mesa, Dios, Cambray, Afton, Brunswick, Mesquite, Leasburg, Fort Sheldon, Fort Thorn, and Lanark.

LASCRUCES.

The county seat and largest town is Lascruces, "the City of the Crosses," beautifully situated on the eastern edge of the far-famed

Mesilla Valley and in the midst of the largest body of cultivated land within the Territory. This valley has an average width of about 5 miles and is 70 miles in length, embracing 120,000 acres of the rich alluvial soil of the Rio Grande. However, only a comparatively small portion of the valley is under cultivation, perhaps 40,000 acres in all. Of course, all cultivation is by irrigation. For this purpose the Rio Grande furnishes an abundance of water usually, but in late years there have been occasional droughts for brief periods, but the farmers and orchardists learned that there is an inexhaustible flow of water under the surface of the ground at a depth of about 25 feet, and that it is perfectly feasible and profitable to utilize this underground flow to supplement the river in times of scarcity. Consequently a number of pumping plants have been erected in different parts of the valley and are now in use whenever required. When it is considered what has been accomplished in California by the use of water raised by means of pumps for irrigation, the advantages of this valley in this respect may be partially realized. Of course, the completion of the projected Elephant Butte dam by the reclamation service will serve to solve the water question for all time.

The town of Lascruces was laid out in the year 1848, at the close of the Mexican war, by American officers at the post then existing at Fort Selden, 18 miles north of the town. Before that time the valley had been the habitat of the Apache Indians, who were so numerous and fierce that no one dared to settle at points in the valley outside of a little hamlet 6 miles above the town, and the lands of the valley were totally unutilized. But with the protection after the American occupation, settlers rapidly came, and the valley now has a population of approximately 10,000 people. Lascruces is the largest town in the valley. The census of 1900 gave the two precincts in which the town is located a population of 2,906. The town proper has at present a population of 3,500. Other settlements in the valley cluster close around the county seat. The town is regularly and symmetrically laid out and in parts well shaded. Its altitude of about 3,800 feet, combined with the latitude, renders the winter months the most delightful in the world, while the heat of the summers is tempered and cooled with the rains which come about the first of June and extend into the fall. The town has a solid and substantial basis for its prosperity. It is essentially an agricultural town, dependent in the main upon the prosperity of the neighboring farms and orchards for its welfare, and with the completion of the Elephant Butte reservoir project its population will quickly increase to 10,000 and over. There are about twenty general merchandise stores and the usual assortment of drug stores, hotels, restaurants, saloons, and offices of professional men. It has a national and a State bank, an ice factory, electric-light works, and a canning factory with a capacity of 24,000 cans daily.

A few miles to the east are the beautiful Organ Mountains, where gold, silver, copper, and lead ores have been and are being mined profitably, contributing to the prosperity of all classes in the town. A company has been incorporated to build an electric railway from this camp to Lascruces and then along the Rio Grande River to El Paso, Tex. There are on the neighboring ranges many cattle, sheep, and goat ranches, which are in a healthy condition. Within 2 miles of the town, at Mesilla Park, is the college of agriculture and

mechanic arts and the agricultural experiment station. These are institutions endowed liberally by the National Government and the Territory, and under their supervision. They are largely patronized by students from all parts of the Territory, from the neighboring sections of Texas and Mexico, and recently some students from almost every State in the Union, who come for the sake of the opportunity afforded to acquire a knowledge of the Spanish language and Spanish stenography. The town has in late years become the mecca of an ever-increasing class of persons afflicted with lung and throat troubles. These unfortunates have found in the mild winters and dry atmosphere the exact conditions necessary to restore them to health. Some of them make it a practice to come every fall and winter, while others purchase ranches, farms, and orchards and settle down into permanent residents. Lascruces is the headquarters of the third judicial district, and has a United States land office for the counties of Donna Ana, Grant, Luna, Sierra, and parts of Socorro and Otero counties. Besides the college, the town has graded and well-managed public schools and private schools. The Sisters of Loretto, a Catholic order, maintain an educational institute. The Roman Catholics and several of the leading Protestant denominations have church organizations. Two English weekly papers, The Citizen and The Rio Grande Republican, are published at Lascruces, and two Spanish weeklies, El Labrador and El Tiempo. At the college a monthly is published. The fraternal orders are well represented, the Masons, Woodmen, Odd Fellows, and others having lodges. The town also has a chamber of commerce, which is doing much in making the advantages of the town and valley known to the outside world.

EDDY COUNTY.

Area, 6,506 square miles; population, 6,500; assessed valuation in 1905, $2,036,360. It is bounded on the north by Chaves, on the west by Chaves and Otero counties, on the south by El Paso, Loving, and Winkler counties, Tex., on the east by Winkler, Andrews, Gaines, and Yoakum counties, Tex. The county is the Riviera of New Mexico. It is the garden spot of the lower Pecos Valley, which extends north and south 120 miles and east and west between the foothills from 5 to 30 miles. It is the most southeastern and the lowest in altitude of New Mexico counties and is almost as large as the State of New Jersey. On July 1, 1905, 3,767,647 acres of its area were subject to entry under the land laws of the United States, 2,229,701 acres being unsurveyed. The Pecos River flows through the eastern half from north to south, and from the west receives a number of tributaries, several of which carry a considerable volume of water, as they drain the entire eastern slope of the Guadalupe Mountains. With the exception of Westwater, on the western boundary, and Monument, near the eastern boundary, all the settlements are located in the Pecos Valley, the post-offices being Artesia, Carlsbad, Dayton, Florence, Hope, Knowles, Lakewood, Malaga, and Monument.

The average summer temperature is 80° above zero, and the average winter temperature is 55° above zero. The county has the finest irrigation system in the United States, formed by the damming of the Pecos River. During the past year one of the dams of the system, Lake Avalon, was destroyed by floods and was not repaired, thus

cutting off from the lands under ditch the customary water supply. It is probable that this system will be acquired by the United States and its capacity increased. The principal river is the Pecos, traversing the county from north to south. Its principal tributaries in the county are the Cottonwood, the Penasco, the Seven Rivers, Rocky Canyon, Dark Canyon—which furnishes Carlsbad with drinking water—the Black River, with an important tributary called the Grape Vine, and the Delaware. The principal mountain system is the Guadalupe group, in the southwestern portion, and the Mescalero ridge of sandhills along the northern boundary. The Pecos River has worn its bed deep into sand bluffs, which form its banks. Much of the water in the county is alkaline. Sufficient water is available to irrigate 200,000 acres of land, but only a comparatively small portion of this, something like 10,000 acres, is thus far under cultivation. On this are raised large crops of alfalfa and peaches, although corn, sorghum, cotton, fruits, and vegetables are also staple crops.

In the northern part, especially at Artesia and Dayton, artesian water has been developed. Outside of the Pecos Valley stock raising is the principal, in fact, is the leading industry. For every acre under cultivation there are more than 300 acres of grazing land. An abundance of water is being developed on the range and is lifted from wells by windmills. The Pecos Valley and its vicinity present to-day greater inducements for the breeding of fine cattle than any other district in the Southwest. Owing to the abundance of water for irrigation purposes, it is able to furnish feed for thousands of thoroughbred cattle for the building up of the surrounding stock ranches. Not only cattle, but sheep and goats do exceptionally well. In the Guadalupe Mountains the Angora goat finds superior range and home, while 200,000 head of sheep of well-graded Merino and Shropshire strains occupy the range. Bee culture can be made a profitable industry here. Railroad facilities are furnished by the Pecos Valley and Northeastern Railway, which follows the Pecos Valley and is a part of the Santa Fe system. There are excellent oil indications south and north of Carlsbad, and copper prospects have been developed in the Guadalupe Mountains, the principal mines being the Neumeyer copper mine, recently purchased by the Standard Oil Company, of Carlsbad.

CARLSBAD.

The county seat is Carlsbad, often declared to be one of the most beautiful towns in New Mexico, and it is certainly entrancingly situated amid orchards and broad cultivated fields. Ever-running waters in its irrigation ditches, its 35 miles of cottonwood and other shade trees, its wide streets and beautiful homes, all help to make it an attractive residence city. The suburbs of La Huerta and Hagerman Heights are far-famed. The Bermuda and the blue grass furnish pretty emerald lawn settings. The ornamental shade trees include the Catalpa, the Chinese Umbrella, North Carolina, and Lombardy poplar, weeping willows, Russian mulberry, while encircling hedges of gray cedar bush and the green bamboo cane are ever and anon broken by the shining spike of the giant cactus palm or Spanish dagger. Here and there can be seen roses of all hues and sizes, blooming almost every month in the year; geraniums of fifteen or twenty varieties blooming in all the soft gradations of color from pure white to

the deepest crimson and royal purple; and many other flowers in profusion. The agriculture of Eddy County includes the walnut, the almond, and the pecan, a flourishing grove of the latter in La Huerta growing more valuable every year.

The altitude is 3,000 feet. It is 1,326 miles from Chicago, 868 miles from Kansas City, and 1,083 miles from Denver. With immediate surroundings it has a population of over 2,000. Its public schools are up to date and housed in modern buildings. There are 500 children of school age in the city, and nearly all are enrolled in the public schools. There are churches of many denominations, a fine opera house, commodious business blocks, a $35,000 court-house, electric light, telephone, water and sewerage systems, two national banks, and a race track, graded and well-kept streets, and three weekly newspapers—The Carlsbad Argus, The Current, and The Sun. The town is a modern and model American community, with healthy business conditions and a promise of a great prosperity in the future. Last year $60,000 was expended for new buildings. A steel bridge spans the Pecos River at this point, and a power dam furnishes the power for the electric-light plant. Just above the city a cement flume, an engineering marvel, crosses the Pecos River.

Carlsbad is considered one of the leading towns in New Mexico. It is the headquarters of the Pecos Irrigation Company. Near the town are mineral springs, whose waters resemble those of Carlsbad, Europe. The town is on the Pecos Valley and Northeastern Railway, which has built a pretty brick depot at Carlsbad.

ARTESIA.

The discovery of artesian water in northern Eddy County has resulted in the founding of the flourishing town of Artesia, on the Pecos Valley and Northeastern Railway, which already boasts of two banks, a weekly newspaper, The Artesia Advocate, and a number of business houses. Its population is above the 1,000 mark, and the town is growing rapidly, having been incorporated. Every quarter section for miles around has been taken up by settlers. Last year $100,000 was expended in the town for building. Artesia is connected by telephone with Roswell and Carlsbad.

DAYTON.

This is a new settlement in the northern part of the county, within the southern part of the artesian district, and surrounded by many acres of fertile soil. It has a weekly newspaper, The Echo; it is a station on the Pecos Valley and Northeastern Railway, and near the northern end of Lake McMillan, and last year expended $25,000 for new buildings. The inhabitants number 500.

LAKEWOOD.

This is a new town formerly known as McMillan, and is entrancingly situated on Lake McMillan, the largest artificial lake in the Southwest. Broad streets have been laid out and graded; thousands of trees, mostly elm, maple, box elder, and mulberry, have been set out. Last year $25,000 were expended for improvements. The place has 400 people.

GRANT COUNTY.

This county is not only by far the heaviest mineral producer, but it is also one of the leading stock counties of New Mexico. Its area is 7,403 square miles; its population, 14,000; its assessed valuation in 1905 was $2,810,950, its annual mineral production exceeds $1,000,000; assessed valuation of its cattle, $1,000,000, the actual value being fully three times as much. It is bounded on the north by Socorro and Sierra, on the east by Sierra and Luna counties, on the south by Mexico, and on the west by Cochise and Graham counties, Ariz. The post-offices are Bayard, Central, Cliff, Dwyer, Faywood, Fierro, Fort Bayard, Gila, Goldhill, Hachita, Hanover, Leopold, Lordsburg, Mimbres, Pinos Altos, Redrock, Rodeo, Santa Rita, Separ, Sherman, Silver City, Steeplerock, Steins Pass, Swarts, Teel, and Whitewater.

The county has good railroad facilities. It is crossed in the southern part by the Southern Pacific Railroad and the El Paso and Southwestern Railway. In addition, the Santa Fe enters it and has two branches, one from Whitewater to Santa Rita and the other from Hanover Junction to Fierro, and a narrow-gauge railroad has just been completed from Silver City to Pinos Altos. The Lordsburg-Hachita Railway is entirely within the county, and the Arizona and New Mexico Railroad has its terminus at Lordsburg.

The county's area is equal to that of the State of New Jersey, and almost 4,000,000 acres are still subject to entry under the land laws. The diversity of its industries has made this county one of the best and most prosperous. In the northwestern part the Gila, and in its eastern portion the Mimbres, furnish water for irrigation, and there are about 150,000 acres adapted to agriculture that can be reclaimed, but less than 6,000 acres are under cultivation. All the orchard products, grains and vegetables do well in the county. The Mimbres Valley produces especially fine apples. In addition to cattle, sheep, goats, and hogs are raised and yield good profits. The county is very mountainous, although none of the peaks attain a great altitude. The principal mountains are the Diablo Range, altitude 9,000 feet, on the Gila Reserve; the Black Range, altitude 9,000 feet, on the Gila Reserve; McMullens Peak, altitude about 7,000 feet, on the Gila Reserve; the Burro Mountains, altitude 7,175 feet; Mimbres Range, altitude 10,061 feet; Hendricks Peak, 7,574 feet; Steins Peak; Pyramid Mountains, 6,628 feet; Quartzite Mountains; Peloncillo Mountains; Hachita Mountains, 8,353 feet; Guadalupe Mountains; Animas Mountains, 6,106 feet; Big Hatchet Mountains. The principal rivers are the Gila, with its tributaries, the Block, Diamond Creek, Apache Creek, East Fork, West Fork, Little River, Sapello, Mogollon, Sacaton, Duck, and Buckhorn, while the Dry, the Little Dry, Mule, and Bear creeks flow into the San Francisco; the Mimbres, with its tributaries, McKnight, Chicken, and Gavilon creeks; Hanover, Cherry, Mangos, Faywood, Walnut, Animas, Cloverdale, San Simon, and Guadalupe creeks.

Some of the oldest and most steady producers among the mines of the Territory are located in Grant County. The Central district embraces Hanover, Fierro, Santa Rita, and near-by camps. The copper mines at Santa Rita were worked soon after 1800, and originally the camp of Central was known as Santa Clara. As early as 1807 the annual production of the Santa Rita mine was 20,000 mule

loads of copper. Over 80,000,000 pounds of copper have been thus far produced by the property. Another old mine, almost as old as the Santa Rita, is the Hanover mine, near Fierro. It has produced 1,000,000 pounds of copper. Another old producer in this vicinity is the San Jose. Prominent properties at Fierro are the Anson S., the Iron Head, the Copper Queen, the Modoc, the Emma, the Hanover No. 2, the Nora, Dude, and Holy Moses. In the Santa Rita basin are the Log Cabin and Belmont, and on Whitewater Creek the Wild Cat. Half a mile east of Hanover is the Thunderbolt, from which large quantities of zinc ore have been shipped to Mineral Point, Wis. Near by are the Copper Queen, Minnie B., Philadelphia, Copper Kettle, Copper George, Peacock, and the Hanover Iron mine, which last produces over 125,000 tons of iron ore annually. In Gold Gulch are the Pactolus, the Owl, the Lucky Bill, and the Dutch Uncle. Near Central is the Texas, the Missouri, the Jasper, and the Helen. The Lone Mountain district is 4 or 5 miles southeast of Central and has four patented silver prospects. It has a ten-stamp mill, now idle. The Mimbres district lies several miles northeast of Santa Rita, and includes the camp of Georgetown, famous as a former producer of silver, and having $3,500,000 worth of ore to its credit, although at present almost deserted. The principal mines are the Jackson group, McNulty, Quien Sabe, Silver Bell, and Naiad Queen. At the south end and upon the western slope of the Mimbres Mountains is the Carpenter district, the Grand Central, the Potosi, and the Beanie lodes being the principal properties. This district will some day be a large producer of zinc and lead.

Pinos Altos is the principal gold district of the county and was a producer as early as 1860. The principal properties are the Pacific Extension, the Pacific, Mountain Key, Silver Cell, Cleveland group, Atlantic, Deep Down, Aztec, Manhattan, Mammoth, Gopher, Arizona, Nogal, Blue Horse, Gold Bell, Alaska, Tom Boy, Dover, Ribbon, Nugget, St. Louis, Comstock, Maud S., Giant, Esperanza, and Pride of the West. The leading placer claims are the Log Cabin and Adobe. The district has thus far produced $5,000,000 worth of ore. From the Chloride Flat district, adjoining Silver City, $3,250,000 worth of silver has been taken. Six miles to the northwest is camp Fleming and Bear Mountain, the principal property being the Granite Hill group. The Burro Mountain district is 15 miles southwest of Silver City. This is a producer of both copper and turquoise. The principal properties are the St. Louis, upon which is a 100-ton concentrator, and around which the new camp of Leopold has been established, the Klondike, Virginia, King and Queen, Comanche group, Jo E. Sheridan, Carter, Morrill, Favorite, Samson, Silver City, Hazel, Fannie, Tarantula, Santa Ana, Connecticut, and Amazon. The White Signal district lies a few miles southeast of the Burro Mountain district, and promises to become a producer of turquoise, gold, silver, lead, and copper. The principal properties are the Coplen group and the J. W. Carter. The Black Hawk district is at the north end of the Burro Mountains. The Black Hawk has produced $600,000 worth of silver. Other properties are the Alhambra, the Rose, and the Hobson group. The Clarks Peak district is 30 miles west of Silver City. It has four patented claims, with a showing of gold, silver, copper, iron, and lead. The Virginia and Pyramid districts lie south of Lordsburg. These districts produce gold, silver, lead, and copper.

In the Pyramid district are the Viola, Leitendorf, and Silver Tree groups. In the Virginia district the Aberdeen, Superior, Miser's Chest, Lena, Wabash, Cobra Negra, Dundee, Ontario, McGinty, Galena Prince, Shoo-Fly, Three Heroes, Carrie, Dacotah Pearl, Eighty-five, Navy, and Ninety-nine. The Gold Hill district lies 12 miles northeast of Lordsburg. Gold and silver, with some copper, are the chief values. The principal properties are the Gold Chief, Standard group, Little Chief, Lottie, Golden Culley, Summit, Allie, Carrie Lee, Beta, Gamma, Never Fail, Western Belle, Alma, and Rattlesnake. Northwest of Gold Hill is the Malone district, having both lode claims and placer mines. Southwest of Hachita, about 6 miles, is the Hachita district, where turquoise and silver-lead carbonates are produced. The principal properties are the King, Klondyke, American, Copper Dick, Silver Bell, Prize, Lady Franklin, and Michigan. Southeast of the Hachita district is the Fremont district. It produces copper, zinc, and silver-lead carbonates. The properties are the Bee-Hive, Jack Doyle, American, and Sulphide. Adjoining the Fremont district on the southeast is the Apache No. 2 district, in which the Apache group is the principal property. It produces silver-copper carbonates. The Steins Pass district lies on the Arizona border southwest of Lordsburg. The minerals produced are gold, silver, copper, and lead. The Black group is the principal producer at present. The Volcano, which has produced over $110,000 of ore; the Wyman, Fraction, Pashlyky, Boss, Bachelor, Queen Daley, Merrimac, Buckhorn, Carbonate Hill, Dewey, Coon, Volunteer, Mayflower, Horse Shoe, Iron Clad, Wild Eagle, Buckeye, Colorado, Arizona King, Ohio, and Gold Quartz are the principal properties.

South of Steins Pass is the San Simon district. Its principal properties are the Granite Gap, Johnny Bull, Little Lucile, Mineral, and Mineral Hill groups. The California district is near Rodeo, and its minerals are copper, gold, silver, and lead. The Steeple Rock district is on the western boundary of the county. It has produced gold, silver, copper, and lead. The principal groups are the Big Four, Carlisle, Jim Crow, Laura, Big Horseshoe, National Bank, Billali, New Year's Gift, Summit, Alabama, Henrietta, Hortense, and Little Mack. The Anderson district is on the east bank of the Gila. It has a number of copper prospects. The Telegraph district is on the west bank of the Gila. Silver is the principal value and the Tecumseh the principal property. Many of the mines have been extensively developed and a few have been worked for over a century. Last year over $1,000,000 worth of copper was produced and about 150,000 tons of iron were shipped from its mining districts. Several reduction works and mills are in operation. The principal mining camps are the Hanover, Santa Rita, Fierro, Central, Gold Gulch, Pinos Altos, Leopold, Red Rock, Steeple Rock, Steins Pass, Lordsburg, and Shakespeare. There are located in this county several hot and mineral springs, the best known being at Faywood, where there is a commodious hotel, and on the Gila River just south of the Socorro boundary. The southern part of the Gila Forest Reserve covers the northwestern part, and from Silver City starts the principal road into the reserve and to the Mogollon and Cooney mining districts. The county has a fine public school system.

SILVER CITY.

The county seat and largest town in Grant County is Silver City. Its location, protected on all sides by high hills, its dry atmosphere, and its almost constant sunshine render this town a pretty and healthy residence place. Nine miles east of Silver City is Fort Bayard, where the United States Government has located the army general hospital for the treatment of tuberculosis. The Government having put its stamp of approval, after careful investigation, upon this climate for the cure of its soldiers and sailors, many other health seekers of late have been attracted to Silver City and surroundings. The census of 1900 gave Silver City a population of 2,735 and Silver City precinct a population of 2,971 persons. The present population is 3,500. It is a well-built town of brick business blocks and many nice brick residences. It has a good supply of water, both for domestic use and for fire protection. Its merchants are modern and progressive, and heavy stocks of goods are carried, because the city supplies a large area of prosperous country. Two weekly newspapers are published, the Enterprise and the Independent. The public school system is very good, and there is also located here one of the Territorial normal schools, with a competent corps of teachers. Another educational institution that does very good work is the Academy of our Lady of Lourdes, for girls. The city has an electric-light plant and a telephone system that reaches out to all the important towns and mining camps surrounding it. There are several substantial church buildings of various denominations. There is one national bank and one savings bank here. There are also good hotels. The city has two smelters and reduction works, the Comanche smelter having a capacity of 1,000 tons a day and employing 150 men.

The industries of the surrounding country are stock raising and mining. Twelve miles to the south is the Burro Mountain mining district, containing principally copper ores and having a smelter, and also producing turquoise. Nine miles north is located Pinos Altos, one of the oldest gold-mining camps in the Territory. Nine miles east are Fort Bayard and the town of Central, while 16 miles east are located the mining camps of Santa Rita, Hanover, and Fierro, in the center of the big copper and iron ore deposits. The climate in this section makes it practicable to carry on mining every day in the year, both on top and underground. St. Joseph's sanitarium, under the care and direction of the Sisters of Mercy, is situated on a high elevation in the western part of the town, and consists of two large brick buildings, containing about 30 rooms. There is also located here a county hospital. The town is the terminus of the Deming-Silver City branch of the Santa Fe system and has railway connection with Pinos Altos.

LORDSBURG.

This town is situated at the junction of the Southern Pacific, the Arizona and New Mexico, and the Lordsburg and Hachita railroads. With surroundings, it now has a population of about 1,200. The town was founded when the Southern Pacific Railroad was built through southern New Mexico and was made a division point by

the railroad. It has a large roundhouse and shop, an extensive yard of side tracks, coal bunkers, and two large oil tanks with a capacity of more than 3,000,000 gallons, as the Southern Pacific is using oil in most of its engines. There are several business houses, two of which do a jobbing trade. The town has an electric-light and ice plant. There are three churches and a good public school building, and one weekly newspaper—The Western Liberal.

GUADALUPE COUNTY.

Area, 3,952 square miles; population, 10,000; assessed valuation in 1905, $823,319. It is bounded on the north by San Miguel, on the east by Quay and Roosevelt, on the south by Chaves and Lincoln, and on the west by Torrance, Bernalillo, and San Miguel counties. Post-offices are: Anton Chico, Casaus, Colonias, Conant, Cuervo, Fort Sumner, Guadalupe, Pastura, Pintada, Puerto de Luna, Ruth, Salado, and Santa Rosa.

The county is rapidly developing. A few years ago it did not contain a mile of railroad, telegraph, or telephone line. It was practically isolated from the world and even from its neighboring counties. But since, the Rock Island and El Paso and the El Paso and Northeastern railways, the latter now owned by the El Paso and Southwestern, have built into the county, forming a junction at Santa Rosa. With the railroads have come the telegraph, new towns, new settlers, and new life. It is, first of all, a stock country. This year it produced 3,000,000 pounds of wool, and the sheep on its ranges are estimated at 600,000. Some of the highest grade wools produced in New Mexico come from this county, the bulk being of Delaine-Merino mixture. Cattle raising is an important business. About 10,000 Shetland ponies and about 10,000 goats are included in the county's wealth. In the eastern part are many springs. On July 1, 1905, there were 1,562,578 acres subject to entry under the laws; 44,566 acres of these were unsurveyed, and the range, therefore, extensive. The Pecos River cuts through from northwest to southeast, and in its valley are fertile agricultural lands. Its principal tributaries are the Gallinas, Enteros, Agua Negra Chiquita, San Juan de Dios, Alamogordo, Petrillo, Pintada, Salado, and Los Lunas. The northwestern portion is in the drainage of the Canadian; the Pajarito and Cuervo are the principal tributaries. There are no modern or extensive irrigation systems. The county has no high mountain peaks or ranges, but is nevertheless very rugged. Cuervo Hill attains an altitude of 5,309 feet and the Mesita de Guadalupe of 5,550 feet. The following land grants are in the county: Preston Beck, Anton Chico, Perea, and Agua Negra. One of its features are high tablelands, with alkaline lakes and cut deep by arroyos. Most of the water in the county is alkaline.

The crops raised are alfalfa, fruit, vegetables, and cereals. There are no developed mines, but indications of gold and copper ores exist, and oil rock is quite prevalent, covering a large area around Santa Rosa. Large deposits of good building stone and some pine and cedar timber are found. The county will always be a fine stock country, for it possesses vast stretches of grazing lands that are not likely to be invaded by the farmer, miner, or factory hand. But it also has some good farming possibilities. The soil is very fertile,

and the building of storage reservoirs or the development of water by means of windmills, gasoline engines, or other power will ultimately place large tracts under cultivation. Fort Sumner is an old army post, and near it is to be laid out a new town to be known as Sunnyside, and which is to be the principal settlement under the Lake Urton reservoir project, under contemplation by the reclamation service. It has a weekly newspaper and several stores. Puerto de Luna was the former county seat and is the center of a good agricultural district. Pastura is the post-office and shipping point for the sheep ranches of the Salado Live Stock Company. Anton Chico and Colonias are agricultural settlements.

SANTA ROSA.

The county seat is Santa Rosa, which consists of an old and a new town, the latter having been laid out by the Alamogordo Improvement Company since the advent of the Rock Island. Five hundred acres are embraced in the town site, which is picturesquely situated on the Pecos River, and platted around a plaza, one side of the plaza being reserved for a modern hotel. The handsome Rock Island passenger depot faces the plaza, while the commodious freight depot is close at hand. It is to be the terminus of a railroad from Dawson now being surveyed by the El Paso and Southwestern Railway Company. It is a prosperous and growing railroad, trade, and stock center, with a population of 1,200. It has two weekly newspapers—the Santa Rosa Star and La Voz Publica—a bank, several churches, a good public school, railroad repair shops and roundhouses. The new town is situated at an elevation of 4,600 feet. The surrounding country, with the exception of the valleys along the river, is prairie and devoted to cattle and sheep raising. Along the valley splendid fruit, grain, and vegetables can be grown with the aid of irrigation. The water in the Pecos River from the Santa Rosa crossing south is alkali, while 100 yards above the crossing it is fairly good. The alkaline character of the water below is caused by gypsum and alkali springs flowing into the river. A remarkable example of the well-and-windmill method of irrigation now exists in the county at the Sumner ranch, 8 miles north of Santa Rosa, which is the division headquarters of the Rock Island and El Paso Railroad. It is here also that the Rock Island and El Paso division of the El Paso and Southwestern Railway starts. The town is sheltered by hills on two sides. It is subject to but few of the windstorms so likely to spring up at any time in the less protected uplands which make up the greater part of the county. The country surrounding is not without its scenic attractions and the climate is good. Santa Rosa sandstone quarries are already well known. In addition to its local use the superb sandstone, including solid red, white, and gray colors and variegated hues, should develop a shipping industry of wide radius and profitable returns.

LINCOLN COUNTY.

Area, 4,659 square miles; population, 7,500; assessed valuation in 1905, $1,044,535. It is bounded on the north by Valencia, Torrance, and Guadalupe, on the east by Chaves, on the south by Chaves and

Otero, and on the west by Otero and Socorro counties. It is one of the oldest counties, and out of its original area have been cut all the other southeastern counties. Its post-offices are Alto, Analla, Ancho, Arabela, Angus, Bonito, Capitan, Carrizozo, Corona, Fort Stanton, Glencoe, Hondo, Jicarilla, Lincoln, Meek, Nogal, Oscuro, Parsons, Picacho, Richardson, Ruidoso, San Patricio, and Whiteoaks. Comprising an area larger than that of the State of Connecticut, Lincoln County on July 1, 1905, still had 1,955,260 acres subject to entry under the United States land laws, 88,687 acres being unsurveyed. It lies within the drainage area of the Pecos River, although only the headwaters of several of its tributaries are within its lines. The Rio Hondo, one of its tributaries, is the largest stream and has as its tributaries streams of clear, cool water known as the Bonito, Eagle, the Little Eagle, and Ruidoso creeks. The headwaters of the Rio Felix and the Rio Salado are also in the county. Nogal Creek and a number of independent water courses on the west side of the White Mountains, often dry during several months in the year, flow toward the Rio Grande, but their waters are lost in the sands before reaching that river. Storage reserviors, to supplement the present primitive irrigation systems, would increase the cultivated area to 100,000 acres, but until new sources of water supply are discovered the greater part of the county will be given up to stock ranges and mining operations.

The principal mountain ranges are the Sierra Blanca, rising to an elevation of 11,900 feet; the Capitan, which in Capitan Peak rises to 10,023 feet; the Gallinas, culminating in Gallinas Peak, 9,798 feet; Carizo, 9,390 feet; the Jicarillas, the Tecolotes, and the Tres Cerros mountains. Climate and soil are very suitable for the raising of fruit and grain. The orchards on the Bonito, the Ruidoso, and other streams produce as fine fruit as can be raised in the United States. Good crops of oats, wheat, and barley are raised without irrigation on some of the mesas south of Nogal. Even alfalfa is thus grown. Wheat yields 30 bushels to the acre; cabbage, 30,000 pounds; beans, 4,000 pounds; apples and pears, 25,000 pounds, and grapes, 9,000 pounds to the acre. There are in the county 200,000 sheep, 85,000 cattle, 1,000 goats, and 3,000 horses. Naturally, it is a fine stock country. It is rich in coal as well as in the precious and base metals. The coal production of the Capitan mines, lately closed down, has been as high as 100,000 tons a year. Producing coal mines are also located at Whiteoaks. There are extensive undeveloped coal fields and iron-ore deposits, which presage future industrial prominence. Fine timber covers the mountain sides, and the Lincoln Forest Reserve, covering 500,000 acres, is situated in Lincoln County. There are two sawmills, one flour mill, and a number of reduction and cement works. At Fort Stanton the United States Marine-Hospital Service maintains a sanitarium for consumptives, thus giving convincing official testimony to the superiority of the climate of that part of New Mexico. The Fort Stanton Reservation has an area of 28,221 acres. Part of the Mescalero Indian Reservation, having an area of 449,280 acres, is in the county.

In the White Mountain mining district the Sierra Blanca lode was located as early as 1868, its principal values being gold. Placer prospecting is carried on in this district. The Nogal district has been a producer and lies on the slopes of the Nogal Peak, 9,983 feet high.

The American mine has produced $85,000 in gold; the Rockford, $8,000; the Helen Rae, more than $15,000. Another good property is the Ibex. In the Bonito district is included the mining district of Parsons. The Parsons mine has been a big producer of gold. Other properties are the Etta, Bismark No. 1 and No. 2, Lady Francis, Jennie Lind, George Washington, and the Crow and Raven groups. A few miles southeast of the Bonito district are the Eagle Creek and Rio Ruidoso districts. Copper and silver predominate, but gold and lead ores are also found. The principal prospects are the Modoc, Chance, Return, Comanche, and Virginia. The White Oaks district is known for beyond the bounds of New Mexico. The North Homestake is the oldest mine and has produced $400,000 in gold. The Old Abe is the deepest mine in New Mexico, over 1,300 feet, and has produced $900,000 in gold. Other important properties are the Little Mack, which has produced $50,000; the South Homestake, which has produced $600,000; the Lady Godiva, the Boston Boy, the Compromise, the Rita, Henry Clay, Little Homestake, Comstock, Rip Van Winkle, Bristol, Thunderer, and Little Nell. The district has five mills and has produced almost $3,000,000 in gold. On Patos Peak, near Whiteoaks, is a coal mine that has been supplying the local demand. Other coal and extensive iron deposits have been located in the district. Fine building stone is found near the camp. The Jicarilla district has both lode and placer properties. Its elevation is 7,475 feet.

On Jack Mountain in this district is an extensive iron deposit. Placer mining was conducted as early as 1850 in this district, and the American Placer Company has installed a dredge, which is idle at present. W. A. McIvers is erecting a mill in the district for the treatment of ores. The principal claims are the Iron King, Geneva, Mountain Boy, Comery, Ready Relief, Admiral Dewey, Belmont, Good Luck, Belle of Memphis, Belle of New Mexico, Summit, Old Comrade, Little Giant, Eureka, Zulu, Richmond, Central, Revenue, Exit, Annex, Prince Albert, Dark Cloud, Queen Victoria, Jicarilla, Placer, Knickerbocker, Democrat, Cleveland, Hawkeye, Juana Gulch, January, and Jane Anderson. The Red Cloud district is located in the Gallinas Mountains. The principal locations are the Red Cloud, Tenderfoot, Deadwood, Old Hickory, Hoosier, Sunbeam, Buckhorse, and Last Call. Copper and lead are the principal ores, while large iron deposits are found, especially on the Harris group. At Ancho are prosperous cement works.

LINCOLN.

The county seat is Lincoln, a quaint old town with court-house, school building, and a number of stores. The population of the precinct is 1,200. Rich farming land surrounds the settlement, which is on the Rio Hondo, and is 12 miles from Capitan, the nearest railroad point.

CAPITAN.

Fort Stanton, with its marine hospital for consumptives, is midway between Lincoln and Capitan. This town nestles in a spot surrounded on every side by rugged hills, which rise on one side into the majestic Capitans and terminate on the other in the snow-capped

Sierra Blanca, the Pikes Peak of New Mexico. These rugged hills, rising in broken line to meet the blue arch of heaven, furnish ever-changing scenery for the eye, as every glance reveals some new beauty to them. The ethereal blueness of the sky and the verdant hills in summer or the brown and somber of winter form a contrast of colors more beautiful than ever portrayed on canvas. The census of 1900 gave the precinct in which Capitan is located a population of 670. To-day Capitan and North Capitan, or Coalora, which has been founded since the census year, the latter being the coal-mining town, have a population of almost 1,000. It is the location of the New Mexico Fuel Company's coal mines, where several hundred men were employed and which had a pay roll of nearly $10,000 a month, but which closed down in the summer of 1904. The fertile surrounding valleys produce crops of fruit, grain, and vegetables; the range keeps thousands of head of cattle sleek and fat the year round, while the mountains contain riches of gold, silver, lead, copper, and iron. Capitan is situated practically in the geographical center of Lincoln County, and can be reached by a direct route from all parts of the county. Being thus favorably located, it is the supply point for the surrounding country, the headquarters for mining companies operating in that section, and the trading point for farmers and stockmen. It is also a railroad point, being the terminus of the Capitan branch of the El Paso and Southwestern Railway, and freighting point for a large territory. Wagon after wagon loaded with hay, grain, wool, hides, etc., may be seen coming into the town daily, which return loaded with supplies for For Stanton, Lincoln, Bonito, Ruidoso, Picacho, Hondo, and other points. Capitan has a $12,000 brick public school building. It has several churches and a weekly newspaper, The Capitan News.

WHITEOAKS.

This is the best-known town of Lincoln County, with a population, according to the census, of 804. It was located in 1880, and its fame rests upon its gold mines, principally the Old Abe and North and South Homestake. It is 6 miles from the El Paso and Southwestern Railway and 12 miles from Carrizozo, on the same railroad, from whence a stagecoach runs to the town once a day. It has three churches and a $3,000 schoolhouse, with good public schools. The elevation is 6,400 feet above the sea level. There are two hotels and a planing mill. Good water is secured from near-by springs. It is located in a beautiful valley, or natural amphitheater, in the White Oaks Range of mountains, surrounded on all sides by high peaks covered with evergreen pine, cedar, and juniper. While several large cattle, sheep, and goat ranches are located in its immediate vicinity, from which it derives an extensive and profitable trade, the principal sources of the town's business, those which induced its establishment at this point, are mining operations. Something more than twenty-two years ago quartz veins carrying visible gold in large quantities were discovered in what are now known as the North and South Homestake mines, and out of these discoveries and the " boom " created thereby grew the necessity for a trade center, and Whiteoaks was the result. It is inhabited by an enterprising

class of citizens, who believe in good schools, churches, and respectable society. One weekly newspaper, The Outlook, is published here. The business houses would be creditable anywhere to a town of 1,000 or 2,000 people. No place can boast of a better climate.

LUNA COUNTY.

This county was organized in 1901. Its area is 2,946 square miles; population, 4,500; assessed valuation in 1905 was $1,509,548. It is bounded on the north by Sierra and Grant, on the east by Donna Ana County, on the south by Mexico, and on the west by Grant County. The post-offices are Cambray, Columbus, Cooks, Deming, Gage, Hermanas, Jose, and Nutt.

Four-fifths of the area is still public land. The Mimbres River traverses it partly from north to south. There is running water along its upper course, but at and south of Deming it is an underground river. A number of small streams, dry part of the year, Florida and other lakes, in addition to wells, furnish the water supply. The principal mountains are the Goodsight Range; the Cooks Range, rising to an elevation of 8,300 feet; Red Mountain, 5,416 feet; Block Mountain, 5,000 feet; Florida, culminating in Florida Peak, 7,295 feet; the Little Florida Mountains, 6,000 feet, and the Tres Hermanas, reaching in Tres Hermanas Peak an elevation of 7,151 feet. The county is primarily a cattle and mining section, although it has a fine rich soil, which can be made to produce abundant crops of all sorts as well as fruits of the finest quality through the medium of irrigation. The land under cultivation is mostly along the upper Mimbres River, although around Deming there are small truck gardens irrigated from wells. It has good railroad facilities, the Santa Fe, the Southern Pacific, and the El Paso and Southwestern passing through, the last named having a branch line from Hermanas to Deming, where it forms a junction with the Southern Pacific and the Santa Fe. The total railroad mileage is 257 miles. The mean altitude is 5,000 feet, and, excepting Donna Ana and Eddy, no county in New Mexico has a milder climate. The winters are warm and snow is rare. The summers are pleasant and the nights are always cool. There is no malaria lurking in the dry air, and Deming and surroundings are favorites with health seekers. There are three hundred or more days in the year in which are classed as clear, while about forty-five days are recorded as partly cloudy and only twenty as cloudy.

As a cattle country Luna County offers superior facilities. It is dotted with windmills, as good water is obtained from 40 to 50 feet beneath the surface. Owing to the mild and equable climate and the abundance of water and grass stockmen find it well adapted for breeding purposes. There are 100,000 head of cattle, and all stock will average up well. Poultry and bees should prove very profitable, as good markets exist. The oldest and most important mining district is Cooks Peak district. The total production of the district has been $3,000,000, mostly lead carbonates. The Desdemona, Othello, and Monte Cristo have produced $2,000,000, the Graphic group $450,000, the Summit group $350,000. Other important properties are the Teel and Poe, which have produced $200,000, the Lead King, the Conception, Wisconsin and Minnesota, Mocking Bird, Cleveland,

Excelsior and Roosevelt, Faywood, White Oaks, Big Galena, Monitor, and Bonanza. There are two camps, at Cooks and at San Jose. In this district is located old Fort Cummings. In the Florida the Silver Cave has produced $60,000 worth of silver-lead ore. Copper also makes a showing in the district. The principal prospects are the Bear, Tiger, Iron Mask, Lead Carbonate, and Roosevelt. In the Tres Hermanas district, 25 miles south of Deming, the Cincinnati has produced $100,000 worth of silver-lead ore. The Yellow Jacket, the Hancock, and the Hetty groups are the principal properties. Important discoveries of rich zinc ore were made in this district in 1905. The Victorio district is in the western part of the county, and from the St. Louis and the Chance mines $1,150,000 worth of silver-lead ore and gold have been taken. A new district in the county is the Stonewall district, at Hermanas, in the southern part of the county. It has a number of promising copper prospects. It was formerly known as Carizilillo.

DEMING.

The county seat and largest town is Deming, which was founded in November, 1881. The Southern Pacific Railway, which was then building toward the Pacific coast, had just reached this point, and was making preparations for the erection of shops, furnishing an incentive for the building of a city of tents and shanties on the plains. Six months later the Atchison, Topeka and Santa Fe completed its line to that point and formed a junction with the Southern Pacific and assured to Deming a position of prominence in that part of New Mexico. During the year 1882 settlers flocked in, and several substantial buildings were erected. The surrounding plains also began to settle up, especially in spots where water was found. These new settlers were engaged in the cattle industry, and that industry has since then furnished a substantial support to the town. Prospectors located claims in the mountains round about, and as a consequence the mining industry, too, is contributing to the prosperity of Deming and has helped to make it an important business center. About a year after the completion of the railroads above mentioned a branch was built into the mining district surrounding Silver City, which was then enjoying a boom. In 1901 work was started on the construction of the El Paso and Southwestern Railway, the road being completed the year following, giving Deming direct railway communication with the great mining regions of southern Arizona and of Sonora, Mexico, and the distinction of being one of the two towns in New Mexico, namely, Santa Fe and Deming, having three independent railroads.

The town's location is well chosen, standing as it does on a broad, level plain at an altitude of about 4,300 feet and surrounded with picturesque mountains. It always enjoys a cool, refreshing breeze in summer, tempering the heat of July and August and rendering the nights pleasant, while its southern latitude prevents severe cold in winter and assures mild, even temperature all the year round. From a commercial standpoint it is the natural supply point of an extensive region, furnishing supplies for the cattle ranches for miles to the east, west, and south, and for the farmers of the Mimbres Valley to the north, while the people of the mining camps in the

various parts of Luna and Grant counties to the west and to the north come to Deming for their supplies and to ship their ores. There is a 60-ton smelter at Deming. The water of Deming is noted for its purity and the abundance of the supply, the Mimbres River sinking into the gravel about 20 miles north of Deming and running beneath the surface in an inexhaustible stream directly under the town. The water is as pure and soft as rain water, thus making the town, with its excellent railway facilities, a peculiarly favored spot for manufacturing enterprises. It has a population of about 3,000 and is incorporated under the village incorporation act. Merchandising is an important industry, there being a number of large, well-equipped general stores in the town. Next in importance is the shipping of stock, about 100,000 head of cattle being shipped annually during the early summer months. Another industry bringing large returns in traffic is hay. The plain surrounding the town furnishes thousands of tons of hay, mostly gramma grass and wild peas, and teams may be seen every day during the winter months hauling and loading it on the cars for shipment to the mining camps and to the towns east and west. A brickyard does a good business, as a greater part of the business houses built during the past few years are substantial brick structures, which add materially to its appearance. There is an ice plant and electric-light works. The town has two banks and a town hall, and is incorporated. The Adelphi Club is an organization of about 100 business men, which has fitted up elegant club rooms and which is doing good work for the growth of the town. The Deming Hospital is aided by the Territory, and was established in 1897. There are two weekly newspapers, The Graphic and The Headlight. The public school system is very satisfactory. The present public school building is a handsome modern brick structure which cost $20,000. Deming has a number of thriving church and lodge organizations.

McKINLEY COUNTY.

McKinley County was created in 1899. Its area is 5,377 square miles; population, 6,500; assessed valuation in 1905, $992,473. It is bounded on the north by San Juan and Sandoval, on the east by Sandoval, on the south by Valencia County, and on the west by Apache County, Ariz. Of its area, 885,847 acres (38,924 acres unsurveyed) were still subject to entry on July 1, 1905. Its main wealth is in coal mines, although a small area is under cultivation along the headwaters of the Zuni River and Pescado Creek. Besides these the principal streams are the Big Puerco, Whitewater, Los Nutritas, San Miguel, and Torreon. The county has no mountain ranges, but is rugged. Hosta Butte attains an elevation of 8,837 feet; Choiskai Peak exceeds 8,000 feet in elevation; Powell Mountain is 8,851 feet high, and the Zuni Buttes are over 7,000 feet high. Many springs of good water are found in the county. There are about 100,000 sheep and 5,000 head of cattle. Over half a million tons of coal are produced annually, the mines being grouped around the county seat of Gallup. The Santa Fe Pacific Railroad cuts from east to west for about 75 miles, and a branch road has been built from Thoreau into the Zuni Mountains timber districts, which

are being exploited, and add considerably to its business. A north and south railroad has been surveyed, to be known as the Colorado and Arizona Railroad, and is to be built from Durango, Colo., to Cochise, Arizona.

The principal coal mines are the Gallup, Weaver (which produces almost 300,000 tons annually), Catalpa, Clark (which produces 150,000 tons a year), Otero, Thatcher, Rocky, Cliff, Union, Black Diamond, Casna, Heaton, Canavan, and Gibson. The coal field is the most extensive in New Mexico, covering 800,000 acres and having 5,000,000,000 tons in sight. Around the different mines camps have grown up, the largest being Clarkville, Weaver, and Gibson.

In the eastern part are good copper indications, while around Manuelito considerable prospecting for oil has been done, as the indications are very promising. South of Gallup are salt lakes, which will ultimately be of commercial value.

East of Gallup are mineral springs. A portion of the northern part of the county is covered with lava. In the southeastern part are cliff dwellings and other prehistoric ruins. Excavations which have been made north of Thoreau have brought forth many relics, which are finding their way to eastern museums. The Chaco Canyon and the Pueblo Bonito, which are on the San Juan County boundary line, are visited by many tourists, and contain some of the best-preserved cliff dwellings in New Mexico. Part of the large Navaho Indian Reservation, which covers 2,345,492 acres in New Mexico, is in northwestern McKinley County. The Navaho are wealthy in sheep and horses and are good workmen, who are given employment on the railroads and in the sugar-beet fields of Colorado. They are the finest blanket weavers among Indian tribes, and their fame as silversmiths has spread far and wide. Part of the reservation is excellent range country, especially for sheep. Rich mineral indications, especially copper, also exist. In the southern part is the Zuni Indian Reservation, the principal pueblo, Zuni, being one of the seven cities of Cibola, and one of the most ancient and interesting pueblos in the Southwest, whose annual dances attract more and more tourists every year.

The Government is building a $250,000 reservoir and irrigation system for the Zuni, who are husbandmen, their principal crops being Indian corn, beans, onions, melons, and squashes. This system when completed will irrigate 6,000 acres of land. Many of the Zuni have small orchards of peach, apricot, apple, cherry, and plum trees, and grapevines. The majority of them have from 10 to 20 acres under cultivation, while some as high as 30 to 40 acres. The area of the reserve is 427 square miles and its population is 1,525. Just east of the Zuni Indian Reserve is the Mormon agricultural settlement of Ramah, on Pescado Creek. Fort Wingate and its military reservation are 15 miles southeast of Gallup, and cover an area of 83,200 acres. Three land grants are partly in the county, the Bartolome, Fernandez, Ignacio Chaves, and the Cebolleta grants. Fort Wingate is the only military post in New Mexico occupied at present. The following are the post-offices: Blackrock, Clarkville, Fort Wingate, Gallup, Gibson, Guam, Manuelito, Ramah, Thoreau, Tohatchi, and Zuni. There are also settlements at Nutria, Savoia, Navajo, Defiance, Coolidge, and Chaves.

GALLUP.

The county seat is Gallup, on the Santa Fe Pacific Railroad, having at present a population of 3,000 people, including the families in the coal camps of the various companies at short distances from the city limits. Like many other western towns, Gallup possesses a notable contingent of thrifty, brainy Scotch, English, and Irish folk, who have added very materially to the rapid growth and solid development of the community. The climate is dry, fairly equable, and with few disagreeable features. The high altitude prevents excessive heat. The town has ample religious and educational facilities. The public school system is very creditable. The Indian trading stores on the Navajo and Zuni reservations get their supplies from Gallup merchants or by the way of Gallup. The McKinley County Republican is the only newspaper, being published weekly.

Gallup is above all a coal-mining town, and its coal industry is practically thus far only partly developed. Underneath the large region of which Gallup is the center immense deposits of coal have been treasured by nature, awaiting the thrifty hand of capital to bring them up to the surface and make of Gallup one of the richest coal-mining towns in the Southwest. One mine alone, property of the Colorado Fuel and Iron Company, produced in one day (June 22, 1903) 1,550 tons of coal. The coal can be dug easily, and there is practically no danger for the miner in the mines unless he should be exceedingly careless. No gas is to be feared. The coal is soft and of the best quality. The coal trade would naturally give the town a steady growth, but it is only one of its resources. Lying north is a field rich in oil-bearing sand and shale, samples of which experts in Pennsylvania oil fields have pronounced to be very rich in crude oil (kerosene). A vein of fire clay, very free from iron and nodules and of excellent quality, underlies the whole region, small and steady orders therefor being supplied to Arizona smelters. Pottery clay, brick clay, valuable sands, copper ore, and other natural resources are found in the neighborhood. The greatest of all resources, however, lie above ground. The town is situated on the Puerco River. The whole valley is filled for miles with rich soil, needing only water to make it one great, rich farm. Nature has kindly made a reservoir site 4 miles above the town, which drains an immense watershed that would supply sufficient water for the irrigation of the whole valley. Only a moderate amount of capital is needed to dam safely this site, and to set going agricultural life that would make Gallup a much larger city and also give handsome returns for the money invested. The city is lighted by electricity; has waterworks, a telephone system, a large roundhouse, and is a division point on the Santa Fe Pacific Railroad, and commands a good trade. It has broad, clean streets and many of its buildings are of brick and stone. It has telephone connection with Fort Wingate.

MORA COUNTY.

Area, 2,542 square miles; population, 13,000; assessed valuation in 1905, $1,311,225.83. It is bounded on the north by Colfax, on the east by Union, on the south by San Miguel, and on the west by Taos, Rio Arriba, and Santa Fe counties. Post-offices are Chacon, Cleveland,

Gascon, Guadalupita, Halls Peak, Holman, Lacueva, Ledoux, Lucero, Mora, Ocate, Roy, Sauz, Shoemaker, Wagonmound, and Watrous. Other settlements are Rociada, San Jose, Don Tomas, San Antonio, Cebolla, Carmes, Golondrinas, Los Mascarenos, La Jara, Fort Union, Talco, and Loma Parda.

Mora County's agricultural products are its mainstay, and are not exceeded in value by those of any other New Mexico county. It can rightfully claim the honor of being one of the leading agricultural counties of the Territory. However, its stock interests exceed in value even its agricultural wealth. It is one of the four small counties, yet its area is greater than that of the State of Delaware; and 715,932 acres, or an area greater than that of the State of Rhode Island, were on July 1, 1905, subject to entry. The county is mountainous, some of the peaks rising to an altitude of 12,000 feet. In the western portion is the Sangre de Cristo Range, which attains its highest elevation in the northwestern part, several peaks reaching an altitude of 12,000 feet. Independent mountain groups are the Turkey Mountains, attaining an elevation of 8,383 feet; the Cornudo Hills, 7,325 feet high; Cerro Mongia, 6,564 feet; Maxsons Crater, 7,360 feet; Canadian Hills, Bald Mountain, Spruce Mountain, and Null Peak. Volcanic formations, such as Ocate Crater, are characteristic. The hills are generally timbered, and a portion of the Pecos River Forest Reserve is within its limits.

From the main Sangre de Cristo Range, broken by foothills and picturesque canyons, the mesa extends gently sloping toward the southeast. It is almost entirely in the drainage area of the Canadian River, although the Pecos and the Santa Cruz rivers also rise within its boundaries. The Mora, a tributary of the Canadian, furnishes the principal supply for irrigation, although the Ocate and the headwaters of the Vermejo have a good flow. Besides these streams, are the Wolf, O. K., Las Cosas, Coyote, Cebolla, Perro, and Piedra Lumbre. A number of small lakes, such as Cherry Valley, Gallegos, Lacueva, and others, are found in the different parts of the county. The entire western part of the county is covered by the Mora land grant and the Pecos Forest Reserve, the entire area of the latter being 431,040 acres, and is unparalleled in the Southwest for its mountain and forest scenery. The irrigation systems are primitive, excepting three reservoirs and canals built at Lacueva. There are many fine reservoir sites, however, and instead of 20,000 acres, the present area under cultivation, there could easily be three times that extent of the county under ditch. The county has 35,000 head of cattle, 150,000 head of sheep, and 5,000 goats. The raising and fattening of beeves is a growing industry around Wagonmound, Watrous, and other settlements. The principal crops are wheat, oats, alfalfa, corn, barley, rye, tomatoes, and vegetables. Horticulture is a very successful pursuit. From the Mora Valley 2,000,000 pounds of corn and 300,000 pounds of oats are shipped annually. On the Lacueva ranch alone 2,000 acres are under cultivation, all in cereals, alfalfa, or fruit trees.

The following are the principal agricultural valleys: The Mora and its extension, the Agua Negra Valley, is 22 miles long. In the narrowest place it is 400 yards wide for the length of about 12 miles; the other 10 miles are from 2 to 3 miles wide. The Guadalupita Valley is 5 miles long and 3 miles wide along the Guadalupita, and

then runs 10 miles to Lucero, averaging about a quarter of a mile in width. The Llano del Coyote Valley is about 3 miles long and 1 mile broad. The La Cueva Valley, not including the 10,000 acres of the La Cueva Ranch Company, has an area of about 5,000 acres. The Cherry and Watrous valleys produce alfalfa principally, although a large quantity of grain is raised annually, being used mostly in fattening cattle, there being about 20,000 head of cattle in these two valleys. Besides these valleys, all of which have irrigation systems, there are the Lower Cebolla, Buena Vista, Carmen, Gascon, and other small valleys that are productive. Mora has a great resource in the timber on the near-by mountains, and 7,000,000 feet are annually shipped. Mineral indications of great promise exist in the mountains and the foothills. Development work is being done in the Rociada, on the San Miguel County line, and Coyote districts. At Rociada copper, gold, silver, and zinc are the values, the principal mines being the Rising Sun, Azure, Joe and Jennie, and Lone Star. The principal group at Coyote is the Overton, a copper prospect. Mora will also some day figure as a coal producer. Clay for brick-making, red and white sandstone, and limestone exist in large quantities and of commercial quality. The county is crossed from north to south by the Santa Fe Railway for about 40 miles. A railway has been surveyed from Las Vegas to Mora. The Dawson Railway cuts across the eastern part.

MORA.

The county seat is Mora. It was first settled in 1832 and is situated in a very pretty valley. It is surrounded by mountains on all sides, except where the valley runs southward to Rociada and to San Miguel County. The Mora River supplies it with an abundance of water and furnishes power to several grist mills. The town has good roads connecting it with outside points, and is connected by telephone with Las Vegas. There are four general stores, carrying large stocks.

Mora also has a nice court-house, a Roman Catholic church, a Presbyterian church, a Catholic convent conducted by the Sisters of Loretto, who also maintain a school for girls, and quite a number of pretty homes. The population of the settlement is about 700. It is a pleasant summer resort, and many fishing parties from Las Vegas and other points go there to fish for trout. The Rio de la Casa, which comes tumbling from the mountains, contains the speckled beauties. Promising mineral prospects are in the foothills near by, and health seekers often go to Mora for rest and health. All that Mora needs to become a large and prosperous town is railroad connection with the outside world.

WAGONMOUND.

This is the largest settlement, the census of 1900 giving Wagonmound precinct a population of 895, while the population of the town itself is 500. Its elevation is 6,250 feet above the sea level, and it has a good climate. Mountain peaks make its surroundings especially picturesque. The principal occupation of its inhabitants is stock raising and merchandising. Wagonmound is a prosperous community, with a good public school which is housed in a modern

$5,000 building. The enrollment of pupils is 250, many children from outside attending the schools. There are two large mercantile houses doing an extensive business. A weekly newspaper, El Combate (Spanish), is printed in the town, which also has two churches. Wagonmound is situated on the main line of the Atchison, Topeka and Santa Fe Railway and, owing to its climatic advantages and beauty of surroundings, is attractive to health seekers. It is a great wool and stock shipping point and the trading center for the Ocate and Mora valleys. The railroad company has a large sheep-dipping plant here. Several fine farms are in the vicinity and offer accommodations to health seekers.

ROY.

This is a new town, a station on the Dawson Railroad, which runs from Tucumcari, in Quay County, to the great coal fields at Dawson, in Colfax County. The town has at this time about 300 inhabitants and is growing. There is a large wholesale mercantile establishment there and several smaller stores. A weekly paper, El Hispano Americano, is published. The town is surrounded by prosperous stock ranches.

OTERO COUNTY.

Area, 6,870 square miles; population, 7,500; assessed valuation in 1905, about $2,027,927. The post-offices are Alamogordo, Avis, Brice, Cloudcroft, Hereford, Jarilla Junction, Laluz, Mayhill, Mescalero, Mountain Park, Oran, Orange, Russia, Three Rivers, Tularosa, Weed, and Wright. The county is bounded on the north by Lincoln and Socorro; on the east by Lincoln, Chaves, and Eddy; on the south by El Paso County, Tex., and on the west by Donna Ana and Socorro counties.

Excepting agricultural settlements at Tularosa, Laluz, Weed, and a few other points, several scattered ranches, and a few prospectors in the Jarillas, and the Indians on the Mescalero Reservation, Otero County in 1898 was practically uninhabited. It was in that year that it was created a separate county, but since then it has grown rapidly in population and wealth. About 4,000,000 acres of its area, however, are still subject to entry. Over 2,500,000 acres are open range, and 138,000 acres are included in the "white sands," a deposit of gypsum. The White, the Sacramento, the Hueco, the Jarilla, and the Guadalupe ranges are the principal mountain groups, reaching an elevation of 10,000 feet. The rivers are but small streams, periodical in their flow, and many, having no outlet, lose themselves in the sands. Tularosa, Laluz, Sacramento creeks, and the headwaters of the Penasco, of Eagle Creek, and other brooks flow from the foothills down the picturesque canyons into the open valleys and table-lands. A considerable acreage is under cultivation, it being practicable to raise crops in parts of the Sacramento and White mountains without irrigation. A dam across Rinconada Canyon, near Tularosa, which will impound sufficient water to irrigate 20,000 acres, is projected. The leading industries are stock raising—cattle, sheep, and goats doing equally well; mining, especially in the Jarillas, where gold, silver, copper, lead, and turquoise deposits exist; lumbering, there being thousands of acres of virgin timber

lands in the Sacramento Mountains, and manufacturing, there being lumber mills, tie-preserving plants, and railroad shops at Alamogordo. The Mescalero Apache Indian Reservation and part of the Lincoln Forest Reserve are in the county.

The Jarilla mining district is a producer of gold, copper, and turquoise, and a large smelter is to be built in the camp. The principal properties are the Three Bears, the Nannie Baird, the Little Annie, Garnet, Alabama, Last Chance, Monte Carlo, Alice, St. Louis, By Chance, Altamont, Penarilla, Lucky, Lincoln, Maggie, North End, Red Hill, and Seven Come Eleven. Extensive placers are being worked in this camp, and from the Iron Queen 1,500 tons of iron ore have been shipped to the smelter at El Paso. Some prospecting is carried on in the Sacramentos, east of Alamogordo, and gold and copper ore have been found. At High Rolls a quarry of lithographing stone is being worked, and near Alamogordo fine marble quarries have been developed. In the vicinity of Tularosa mining operations are carried on.

ALAMOGORDO.

The county seat and largest town is Alamogordo, 4,500 feet above the sea level, and probably the prettiest town in the Territory; it has experienced the most remarkable growth of any town in New Mexico. The town was established only in recent years, and it has to-day over 4,000 inhabitants, broad streets, brick business blocks well stocked with merchandise, five churches, the Southwestern Baptist College, the Territorial asylum for the blind, two large sawmills costing over $200,000, an electric-light plant and ice factory, steam laundry, planing mill, an artificial stone plant which utilizes the gypsum from the white sands, a waterworks system (which cost $100,000), a railway hospital, a woman's club, a park a mile long, three weekly newspapers—The Alamogordo News, The Otero County Advertiser, and The Alamogordo Journal—a fine railroad depot, a modern and commodious hotel, a fine public school building, and a public library. It is the headquarters of the Sixth judicial district. The streets are lined with shade trees and here and there about the city are beautiful parks. The city water supply is brought 12 miles from springs in Alamo Canyon, the last 8 miles of the distance being piped. The system has a gravity pressure of 100 pounds to the square inch. The water for the irrigation system is brought down from La Luz Canyon, 7 miles away. A $25,000 court-house has been constructed, a $75,000 tie preserving plant, two big lumber mills, and railroad shops.

The town is the geographical and commercial center of a fine fruit-growing section, has thousands of tributary fertile acres open to Government entry, is on the main line of the shortest route between Kansas City, Denver, and El Paso to California and Mexico, and is within several hours' jaunt of the famous Cloud City, a summer and scenic southwestern resort, with which it is connected by the Sacramento Mountain Railway, one of the engineering wonders of the United States.

TULAROSA.

The town of Tularosa is situated on the El Paso and Northeastern Railway. Its latitude is about 33° north, and is at the base of the White Mountains, whose highest peak, about 25 miles distant, rises to

an altitude exceeding 10,000 feet. It is supplied with water by Tularosa Creek, which is a mountain stream whose sources consist of several mountain springs, containing iron, magnesia, and sulphur, on the reservation of the Mescalero Indians, flowing for about 20 miles through the canyon dividing the White Mountains and the Sacramento Range. These mountains are covered with pine, fir, juniper, pinon, and balsam fir, all of which endow the atmosphere with healing balm beneficial to the lungs. To the westward are the San Andreas Mountains, some 40 miles away, showing several high peaks and an elevation of about 9,000 feet. Northeast are the Oscura Mountains, about 75 miles distant. No finer scenery for the painter's brush can be found than is afforded from this dreamy town in the Tularosa Valley, part of a level plain running northerly some 60 miles and southerly to the Texas plain, and beyond for 100 miles, and some 50 miles in width, a veritable paradise, if properly supplied with water, and this can be provided through storage reservoirs and pumping plants.

The temperature of Tularosa and vicinity ranges from the freezing point to 90° F. This is the record for eighteen years. The thermometer reaches its highest point about the middle of August, when for about two weeks it indicates 94° at noon, and remains there until 3 p. m., when it begins to decline, and at night the breeze sets in from the mountains, which renders a blanket necessary before morning. The large number of cottonwood trees which line the streets of Tularosa furnish a dense shade, which makes the warmest days pleasant and agreeable. The real winter usually lasts from about the 20th of December until the 10th of January, and then ice can be seen on the irrigation ditches from one-eighth to one-fourth inch thick. Tularosa, being completely landlocked against the winds on the north and east by mountain ranges and spurs from the main ranges, never experiences the sudden changes of temperature which are so severe upon those suffering from throat and lung trouble. Fruits of the Temperate Zone grow to perfection in Tularosa. There is no record of the failure of the fruit crop since the settlement of the town, in 1862. Grapes do well. Alfalfa grows to perfection, producing 1 to 2 tons per acre at each cutting, and from 3 to 5 tons each year. Garden products are unexcelled. Tomatoes grown here are large and of good flavor. Watermelons and cantaloupes flourish, the flavor of the cantaloupes being fine and the vines very prolific. Apiaries yield honey of good quality. The population in and near the town is about 1,000, the census of 1900 giving Tularosa precinct a population of 752. The town has a public school building and a weekly newspaper—The Tularosa Reporter. The Catholic is the oldest church in the town. The tourist and hunter will find many attractions in the vicinity of Tularosa. Six hours' ride will take the hunter among the wild turkey, black-tail deer and the cinnamon bear, and a day's drive in a buggy will carry the disciple of Walton to where the speckled trout are waiting, greedy for the angler's bait. The mountain ranges show indications of gold, silver, copper, iron, and coal.

QUAY COUNTY.

Area, 2,805 square miles; population, 4,000; assessed valuation in 1905, about $589,723. It is bounded on the north by Union and San

Miguel counties; on the east by Oldham, Deaf Smith, and Parmer counties, Tex.; on the west by Guadalupe, and on the south by Roosevelt County. On July 1, 1905, there were subject to public entry in this county 1,467,532 acres, 10,620 acres being unsurveyed. The county seat is Tucumcari. Post-offices are Dodson, Endee, Montoya, Moore, Quay, Puerto, Revuelto, and Tucumcari. The county was created by the thirty-fifth legislative assembly in 1903, and was named in honor of the late United States Senator Matthew Stanley Quay, of Pennsylvania. Guadalupe and Union counties gave up the area to create the county, the greater part coming from Guadalupe County. The county seat was fixed at Tucumcari, a busy railroad center at the junction of the Chicago, Rock Island and Pacific Railway and the Dawson Railway. These two railroads traverse the county and give ample railway facilities and have resulted in the coming of scores of new settlers.

Quay is classed as a plains county, but it is by no means entirely level, the surface being broken by hills and peaks, which in spots rise to the dignity of mountains, all being foothills of the great Rocky Mountain system. The southeastern portion is part of the Staked Plains. The county is in the drainage area of the Canadian River in its northern part. Besides the Canadian the Pajarito is the principal water course. The Plaza Largo and the Trujillo are other streams, but are dry part of the year. Basins or water holes dot the plains, which are filled with water at times, forming lakes in the rainy season.

Being a grazing country, the stock industry flourishes. On its ranges are 150,000 sheep and 60,000 cattle. Tucumcari has become a great wool-shipping center, the grade of wool produced being above the average. The mild winters and a good supply of water make the county especially favorable to the stock industry.

Agriculture is also carried on upon a small scale, water for irrigation being supplied chiefly from shallow wells. The water can be raised by windmills or with gasoline engines. On the Pajarito and around Tucumcari there are good farms. A beginning has been made in raising fruit, the climate being especially adapted to horticulture, apiary, chicken farming, and other branches of husbandry. Dry farming gives encouraging results. Excellent building stone is found, as well as clay for the making of brick. The climate, like that of the rest of the Territory, is a specific for lung and throat trouble. The winters are mild and the summers are cool, especially the summer nights. The altitude varies between 4,000 and 6,000 feet. On July 1, 1905, there were 1,467,532 acres—40,620 unsurveyed—still subject to entry under the Federal land laws, although around Tucumcari the land has been pretty well taken up by homesteaders.

TUCUMCARI.

The principal town is Tucumcari. There are small settlements at Dodson, Endee, Montoya, Puerco, and Revuelto, where post-offices and stores are maintained. Tucumcari is a prosperous town situated at the foot of the Tucumcari Mountain at the junction of the Chicago, Rock Island and Pacific Railway, the Dawson Railway, and the survey of the Choctaw-Amarillo extension. The surrounding country is a rolling prairie, broken and intercepted by

small streams and the Canadian River, which flows through the eastern portion. Tucumcari has a population of 1,000. The town has a $15,000 court-house and jail, a $10,000 school building, a fine bank building, large mercantile establishments, and many pretty houses. Tucumcari has two newspapers, the Times and the Actual Settler. The town commands an extensive trade territory, and is the center of a large sheep and wool industry, a wool-scouring plant having been recently built.

RIO ARRIBA COUNTY.

Area, 5,932 square miles; population, 1900 census, 13,177 (since then Espanola precinct of Santa Fe County has been added to it); present population of the county, 16,500; assessed valuation in 1905, $1,045,563. The county seat is Tierra Amarilla. Post-offices are Abiquiu, Alcalde, Canjilon, Chama, Chamita, Cordova, Coyote, Dixon, Edith, El Rito, El Vado, Embudo, Espanola, Gallina, Hopewell, Lumberton, Lyden, Mariana, Monero, Parkview, Petaca, Rinconada, Rosa, Tierra Amarilla, Truchas, Tusas, Vallecitos, and Velarde. It is the seventh largest county in the Territory, having more than five times the area of the State of Rhode Island, thrice that of Delaware, a greater area than Connecticut, and is almost as large as Hawaii. The county is bounded on the north by Conejos, Archuleta, and La Plata counties, Colo., on the east by Taos, on the south by Sandoval, Santa Fe, and Mora counties, and on the west by San Juan County. On July 1, 1905, the area still subject to public land entry was 2,339,021 acres, of which 728,166 acres were unsurveyed. There are a number of large grants either partly or wholly in the county, these being the Tierra Amarilla, Lobato, Piedra Lumbre, Polvadera, Black Mesa, Chamita, Bartolome Sanchez, Abiquiu, Antonio Abeyta, Sebastian Martin, Senora del Rosario, Las Trampas, Las Truchas, and Santa Cruz grants. The county is well watered, the principal rivers being the Rio Grande River, which always has ample water for irrigation within the county, and the Chama. There are many lesser streams, including the Vallecitos, the Encino, San Antonio, Jaralosa, Pine, Canyon Largo, Coyote, Ojo Sarco, Santa Clara, Caliente, Las Trampas, Petaca, Nutritas, Cebolleta, Canjilon, Gallinas, and the headwaters of the Rio Jemez.

A small portion of the Pecos River Forest Reserve is within the county, and the greater part of the Jemez Forest Reserve of 1,250,000 acres, as is also the pueblo of San Juan, with a grant of 17,545 acres, and the Jicarilla Apache Indian Reservation, upon which the Government has built a fine day school and irrigation works for the 830 Apaches who live upon the reservation, which covers 404,788 acres. The county is very mountainous and hilly, rising in the Las Truchas peaks in the southeastern corner to an elevation exceeding 13,000 feet, and over 12,000 feet in the peaks of the Cumbres Range along the northern boundary. In addition to the Sangre de Cristo and Cumbres ranges, the principal mountains are the Jemez, Gallinas, Cejita Blanca, Brazos, Capulin, White, San Antonio, Ortiz, and Tusas peaks.

Rio Arriba County has produced considerable mineral, principally gold, coal, and mica, although its copper mines are also important, although not yet producers. The principal mining districts are

the Bromide, the Headstone, the Copper Canyon, the Ojo Caliente, and the Monero districts. The Bromide district is 40 miles west of Tres Piedras, on the Denver and Rio Grande Railroad. Tusas Peak, 9,500 feet high, is the highest mountain in the district, and the principal mines lie on the slopes or foothills of this peak. The first mine located was the Bromide, in 1881, and $18,000 worth of ore has been produced by the property. The ore is purely silver. The Dillon development tunnel will cut through the extensive schist formations of this district and is to be 6,300 feet long. The main properties in the district are the Payroll, Admiral, Wedge, Blue Bell, Tampa, Whale, Mayflower, Sixteen to One, Sardine, War Eagle, Mexican King, Merrimac, Midnight, Wayne-Arriba, Last Dollar, Keystone, Pontiac, Walker, Iron Clad, Gold Pan, Butterfly, Red Fissure, Farragut, Agnes, Royal Purple, Independence, Strawberry, Joe D., and Big Sandy, the leading ores being copper carbonates and sulphides carrying gold and silver.

The Hopewell district became first known for its gold placers, from which during the first three years one prospector took $175,000. A hydraulic plant has been erected on the Lower Flat placers. The ores of the camp are principally sulphides carrying gold. On the Mineral Point mine 1,500 feet of development work has been done. Other mines are the Jawbone, Good Hope, Crescent, Duck, Golden Age, Atlantic, Silent Friend, Hornet, Iron Mountain, Columbia, Ten Better, Buckhorn, Hidden Treasure, and Emerald. The Copper Canyon district lies near Abiquiu. The best known location is the Lily Belle, on which a 60-foot tunnel has been driven. The ore is copper glance in white sandstone. The Ojo Caliente district is in the eastern part of the county. One group is the Antonio Joseph, which was worked in the early days by the Spaniards. It carries gold and silver. The Chicago and Big Missouri are other groups. The Mica Age is a fine mica prospect. The Petaca district is principally noted for its mica mines, which are known as the "Cribbensville deposit." Considerable mica has been shipped from these properties. The Monero district is a producer of bituminous coal, the annual production being about 50,000 tons, mostly consumed by the Denver and Rio Grande Railroad. The mines are named the Monero, the McBroom, and the Kutz. About sixty men are given employment on these properties. In the Chama River are extensive placer deposits, mostly in black sand, and many efforts have been made to reclaim the gold, but thus far unsuccessfully. Prospecting is carried on in other parts of the county, but thus far Rio Arriba has not been a great mineral producer. Building stone, gypsum, clay, and tufa are of common occurrence. Rio Arriba is one of the richest of New Mexico's subdivisions, the census of 1902 showing that its agricultural wealth amounted to $2,566,000.

As there are many good reservoir sites, a considerable portion of the water supply will at some future day be available for irrigation purposes, but at present most of it flows to waste, only about 50,000 acres being under ditch and 30,000 acres under cultivation. On the Lobato grant the preliminary work has been done for the construction of a reservoir system to reclaim several thousand acres around El Rito. The county is in the drainage area of the Rio Grande, except that small portion west of the Continental Divide. Rio Arriba County has the dry, sunny mountain climate so much sought for by

health seekers. About 140 miles of the Denver and Rio Grande Railroad traverse the county, in addition to about 35 miles of timber railroad, with its present terminus at El Bado, and connecting with the Denver and Rio Grande at Lumberton. Stock raising, especially sheep, is the main industry. Next in importance is agriculture and lumbering. Some of the finest orchards in the Southwest are to be found in the Espanola and Chama valleys, the shipments of fine fruit amounting to a quarter million pounds annually. Then comes mining. There are many attractions for tourists, among them being the cliff dwellings of the Pajarito Park. Some of the settlements are among the oldest in the United States.

TIERRA AMARILLA.

The county seat is Tierra Amarilla, and is situated in the beautiful Chama Valley upon the site of old Fort Lewis, with pretty agricultural settlements around it. The population of Tierra Amarilla and contiguous settlements, including the charming settlement of Park View, is about 2,200. A weekly newspaper, El Republicano, is published here. Tierra Amarilla and Park View boast of several fine business houses and are also the center of a wealthy stock country.

CHAMA.

Chama is a modern railroad town on the Denver and Rio Grande Railroad, on which it is a division point, and it is a shipping point for the wool, lumber, and other products of the northern part. It has public schools and churches. Near the town are stone quarries from which the stone for the Colorado capitol at Denver was taken. Ranches and stock ranges surround the town, and near by are several fine trout streams and good hunting grounds. The Denver and Rio Grande Railroad maintains here big dipping vats for sheep. The population is 500.

ABIQUIU.

One of the oldest settlements in the Territory is Abiquiu, which is centrally located in the valley of the Rio Chama. For many years it was an outpost against hostile Indians, and many expeditions against the Apaches and Utes were organized there. It has an interesting history, and was, up to within thirty years ago, quite important to the county. It is to-day a good trading center, and has a number of fine orchards. Near by are placer gold deposits.

EL RITO.

El Rito is a pretty settlement on the Lobato grant. It has a substantial church, a number of modern residences, and the New Mexico Reform School. It is to be the center of an extensive irrigation system.

ESPANOLA.

Espanola is a prosperous commercial and agricultural community with several large wholesale houses. It is the metropolis of the beautiful and fertile Espanola Valley, and an important shipping

point on the Denver and Rio Grande Railroad. La Luz, a Spanish weekly, is published at the near-by settlement of Angostura, at which is situated the fine Sunshine orchard, the largest in the county.

CHAMITA.

An agricultural center around which cluster many settlements and opposite the Rio Grande River from the ancient and quaint Indian pueblo of San Juan. Chamita is probably the oldest white settlement in the United States, the Spanish conquistadores having made their first settlement in the United States at San Gabriel, practically a part of Chamita.

As is indicated by the post-offices, Rio Arriba County has many settlements, most of them entrancingly situated, and having mercantile establishments, public schools, and churches. At Velarde is a Baptist mission school and church.

ROOSEVELT COUNTY.

Area 3,110 square miles; population, 4,500. The census of 1900 gave this area a population of 383. Assessed valuation in 1905 about $1,014,826. The county seat is Portales. Post-offices are Arch, Bethel, Blacktower, Delphos, Elida, Floyd, Langton, Portales, Texico, and Tolar. Roosevelt County, named after the President, was created by the thirty-fifth legislative assembly in the year 1903; of its area on July 1, 1905, there were still subject to entry 1,532,908 acres, of which 89,680 were unsurveyed. The county is bounded on the east by Palmer, Bailey, and Cochran counties, Tex.; on the south by Chaves; on the west by Chaves and Guadalupe, and on the north by Quay County. The Pecos Valley and Northeastern Railway crosses the county from northeast to southwest for 54 miles, and the New Mexico Eastern, now under construction, will cross the northern part of the county from west to east, forming a junction with the Pecos Valley and Northeastern at Texico. Along this line, in the western part of the county, a town—Tolar—has been platted. It is distinctively a plains county, and, excepting a fraction of the northeast corner, is rectangular in form. It measures 64 miles from east to west and 54 miles from north to south. It is the eighteenth in size in New Mexico, and yet it covers an area three times that of the State of Rhode Island. Its western boundary is approximately along the divide or watershed between the Pecos River on the west and the Brazos River on the east.

The principal valley crosses the county from a point on the west boundary line north of the center to a point a little south of the center of the eastern boundary line, so that the entire county is traversed in northwesterly-southeasterly direction by a broad valley, which has come to be known as the "Inland Valley." It is for the greater part of its length skirted on either side by low hills, and bears all the indications of having been at one time the course of a broad flowing stream of water. There are at intervals along the course of this valley springs, from which flows a constant stream of pure non-alkaline water. Particularly is this true near the head of the valley, where there is a considerable number of such springs. The course of the drainage for the flow of waters divides at a point a little north

and west of the center. The one part forms the head of what is known as the Black Water branch of the Brazos River, and the other forms the headwaters of the Yellow Horse branch of that stream. Numerous draws grade into the inland valley at various points along the entire length, coming from different directions and distances, covering the entire county with a network of drainage. These draws and valleys are for the most part broad, and the grade from the higher land is so slight that in passing over the surface the descent or the ascent is scarcely noticeable. To either side of the principal valley and beyond the narrow range of sand bluffs the surface broadens out into the wide plains, upon which the native grasses grow in abundance, providing pasture for cattle, sheep, and horses, upon which they feed the year around. From those pastures great numbers of these animals are shipped and driven annually both to the market and to the Northern States for feeding.

Because of the mildness of the climate and the abundant growth of grasses, the region embraced within the limits of Roosevelt County is rightly considered a part of nature's breeding ground. It is crossed from the northeast to the southwest by the Pecos Valley and North-Eastern Railway, a part of the Santa Fe system, operating 70 miles in the county. As late as the year 1900, with the exception of a few cattle, horse, or sheep ranches, long distances apart, the whole region was unoccupied and unappropriated Government land. Since the year 1900 there has been a steady inflow of settlers, so that by this time 2,000 quarter sections are occupied by actual settlers, who are mostly engaged in farming without irrigation as a means of earning a livelihood. There is throughout the inland valley an inexhaustible supply of water, from surface springs to an underground flow, at a depth of 100 feet. This makes a convenient supply of good water that has been pronounced by experts to be more cheaply available for irrigation on small farms than could be otherwise obtained. The water can be raised to the surface by means of pumping engines at a comparatively low cost. This also makes possible the intense cultivation of the land. The people who have settled in the county are for the most part from the plains of Texas and Oklahoma.

The western range of townships lies in such proximity to the Pecos River Valley that a considerable body of land in that vicinity has been temporarily reserved under the provisions of the national irrigation law, pending a survey, to determine the feasibility of building an irrigation system. From a view of the situation it seems evident that nature especially intended that section for a natural reservoir, into which the flood waters of the Pecos can be led at a minimum cost, and from this storage reservoir, by a system of canals and ditches, a large tract of level, fertile land can be brought under irrigation and cultivation. In a range of sand hills extending from the northwest to the southwest the Forestry Service of the Federal Government is making experiments in reforestation with apparent success. This land has been withdrawn from entry on that account.

There is every indication that horticulture will become a profitable industry. Such fruit-bearing trees as have reached a bearing age at the older ranches have produced fruit of an unsurpassed quality. The elevation retards too early blooming in the spring, while the sunshine and soil conduce to the highest development of flavor, form,

and color. Almost every homesteader has planted an orchard, while many thousands of forest, ornamental, and shade trees have been planted. These all make a satisfactory growth, and when the soil is properly prepared before setting and afterwards kept in good state of cultivation the growth of these is surprisingly rapid. All kinds of small fruit do well, also all varieties of plum and cherry trees make a gratifying growth. The climatic conditions which exists in Roosevelt County are favorable to those afflicted with pulmonary, catarrhal, and asthmatic troubles, and the elevation is sufficiently great to make epidemics of enteric diseases and malaria out of the question.

PORTALES.

The building of the Pecos Valley and Northeastern Railway extension, connecting Roswell with Amarillo, during the fall of 1898, marked the beginning of the building of the town of Portales. While the railroad was being constructed there was a tent city on the town site, which, for the most part, vanished after the tracks were laid and the depot built. Little was done in the line of settlement and the permanent building of the town until the fall of the year 1900. The altitude of Portales is 4,004 feet above sea level. It is 90 miles from Roswell, 116 miles from Amarillo, and 18 miles from the New Mexico-Texas boundary. It lies in a valley in which rise the headwaters of the Yellow Horse branch of the Brazos River. The general contour of the surrounding country is level prairie, and throughout the entire vicinity water may be had from springs that flow out at several points along the draw and from a depth of 100 feet or more. The growth of the town has been steady, and has not exceeded the settlement and development of the surrounding country. Its population at present is 1,300, while the precinct has a population of over 2,000. There are two banks, one national and the other Territorial. The town has two weekly newspapers, The Portales Times and The Portales Herald; a fine concrete court-house built in the public square; three churches, good public schools, a branch creamery, a factory for the manufacture of artificial stone, a telephone exchange, a cold-storage plant, and modern business houses. Farming and stock raising are the industries that contribute mostly to the town's prosperity. Pure water free from alkali is obtained on the town site from wells at a depth of 18 feet.

ELIDA.

Situated near the southwestern boundary is Elida. It is 25 miles from the county seat, and is a station on the Pecos Valley and Northeastern Railway. The land in its neighborhood is rolling prairie and covered with a luxuriant growth of mesquite and gramma grass. A town site has been laid out and covers 80 acres. A square is dedicated to the public. A public well, pumping plant, and reservoir, and a block for a post-office building are included in this public square. Elida has a post-office, a general merchandise store, a hardware store, a large lumber yard, a grain and feed store, a restaurant, a weekly newspaper—The Elida News—a blacksmith shop, and a carpenter shop. In the town and immediate vicinity there is a population of 600 people. Beyond the present settlement and in every direction there are fine lands, subject to enty under the homestead act. There are indications of coal in this vicinity.

TEXICO.

At the point where the Pecos Valley and Northeastern Railway crosses the New Mexico-Texas boundary line and at the junction of the railroad named the New Mexico Eastern, now under construction, is Texico. The town site was surveyed and platted in August, 1902; it is 22 miles from Portales. The land upon which the town is located is for the most part level. The growth of the town has been quite rapid. More than 200 quarter sections of land in the immediate vicinity have been occupied by actual settlers. The soil in the vicinity is a deep sandy loam, easy of cultivation and very productive. Surveys have been made out of Texico for railroad purposes eastward to Floyada and Quanah, Tex. There are, at Texico, a national bank and over a score of business houses, and the population of the town and immediate vicinity is not less than 500. A schoolhouse has been built, and a weekly newspaper—The Texico Trumpet—is published.

BETHEL.

Bethel, which is 9 miles from Portales, has a post-office. A school is maintained here by the Christian Church, which has erected buildings at this point for the accommodation of students. The land in the vicinity of Bethel for several miles in every direction has been entered under the homestead act, and is being occupied and cultivated by actual settlers.

FLOYD.

Nine miles west of Bethel is the settlement and post-office of Floyd. Floyd has a general store and a neat school building only recently completed. Practically every quarter section of land for several miles around this settlement has been taken up and is occupied and under cultivation by homestead entrymen.

SANDOVAL COUNTY.

Area, 3,833 square miles; population, 12,500; assessed valuation in 1905, $810,839. The county seat is Bernalillo. Post-offices are Algodones, Bernalillo, Bland, Cabezon, Casasalazar, Cuba, Hagan, Jemes, Penablanca, Perea, Placitas, Sandoval, Senorito, and Thornton.

The county was created by an act of the thirty-fifth legislative assembly, in 1903, Bernalillo County contributing the largest area. Of its area, 694,190 acres (239,209 unsurveyed) are subject to entry under the Federal land laws, while a considerable portion of the remainder is included in so-called private land grants. The principal grants are the Baca Location No. 1, Ramon Vigil, Canada de Cochiti, Santo Domingo, Ojo de Borrego, Ojo de San Jose, Jemez, San Ysidro, Zia, Santa Ana, San Felipe, Tejon, San Antonio de las Huertas, Cochiti, San Pedro, Sandia, Angostura, Sitio de Juana Lopez, Caja del Rio, Alameda, Canada de los Alamos, Agua Salado, Cebolleta, Ignacio Chavez, Ojo del Espiritu Santo, Anton Baca, Nuestra Senora de la Luz de las Lagunitas, and Canyon de San Diego. The Rio Grande cuts through the southeastern corner. The Puerco River rises in the county. Next to the Rio Grande and the Puerco the Jemez is the principal stream. Other streams are the Tortuga, La Jara, San Jose, Rio de la Vaca, Salado, and Guadalupe. The Ga-

listeo, the Frijole, the Una de Gato, and the San Pedro are the streams in the eastern part. The southern part of the Jemez Forest Reserve is situated in the county.

The main range of the Rocky Mountains, here called the Valles, or Cochiti and Jemez Range, and the Continental Divide penetrate into the county, some of the peaks rising to an elevation of almost 12,000 feet. These mountains are cut by deep gulches and canyons. In the southeastern part is the massive and picturesque Sandia Range, rising to an elevation of 10,500 feet.

It is the fifteenth in size among the 24 counties of the Territory, covering an area of almost four times as great as does the State of Rhode Island. It is bounded on the north by Rio Arriba, on the east by Santa Fe, on the south by Bernalillo, and on the west by San Juan, McKinley, and Valencia counties. The principal industries are stock raising, farming, fruit growing, and mining. Its central location, great diversity of topography, and fine climate, together with the fact that the Central Rio Grande Valley starts in the county and extends through it for more than 20 miles, give it prominence and attractiveness. There are nearly 600,000 acres that can be brought under irrigation and about 1,500,000 acres are good pasture. The mesas or table-lands are usually long stretches of plain, varying in width from 5 to 20 miles, and extending from the base of the mountains in the direction of the valley, with an inclination of only a few feet to the mile, and ending abruptly in a range of bluffs or sand hills, which form a background of brown to the verdure of the valley. The mesas are the principal grazing districts. In seasons of average rainfall the grass grows well.

About 10,000 acres are under ditch, only about 3,000 being under actual cultivation. The irrigation systems are primitive, and there is abundant opportunity for profitable investment in irrigation works. The Indian villages of Cochiti, Santo Domingo, San Felipe, Sandia, Jemez, Santa Ana, and Zia are in the county, each having a grant of land as follows: Cochiti, 24,276 acres; Santo Domingo, 74,743; San Felipe, 34,767; Sandia, 24,187; Jemez, 17,510; Santa Ana, 17,361, and Zia, 17,515 acres. In addition the San Felipe Indians have a reservation of 13,817 acres. The mountainous portion of Sandoval County is well timbered. The greater portion of the proposed Pajarito National Park will be in this county, and within it are found thousands of prehistoric cliff, cave, and communal buildings, while near its border are the famous and mysterious stone lions of Cochiti. Fruit, especially the Mission grape, vegetables, and alfalfa do well in the Rio Grande bottoms. The range is very good, especially for sheep.

The principal mining camps are the coal camp of Hagan, at the foot of the Sandia Mountains, and the gold camp of Bland, in the Cochiti range, 30 miles west of the city of Santa Fe. Bland was a flourishing mining camp for a number of years, but at present very little work is being done in the district. The Albemarle group produced $667,500 in gold and silver before closing down. It had a plant of 300 tons a day capacity. The main shaft is down 700 feet. The Lone Star, Washington, Crown Point, Laura S., Tip Top, and Iron King have been producers. On the Iron King, 7 miles below Bland, is a 50-ton mill. Other properties are the Posey, Black Girl, Little Casino, Allerton, Union, Lone Star, Mammoth, Ellen L. Hopewell, Good Hope, Iron Queen, Bull of the Woods, Fraction, Short Order, Iowa No. 2,

Monster, Corona, No Name, Little Mollie, Tom Boy, Santa Fe, Hanison, Famous, Old Dutch, Little Betsey, Ivanhoe, Aunt Betsey, Acme, Calumet, Del Fino, Morning Star, Shannon, Dewit, Strip No. 2, Belle, Navajo, Golden Cochiti Tunnel, Sister C., Cross Keys, Puzzle, Midnight, Wilson, and Sheridan.

The Nacimiento district lies in the Nacimiento Mountains, a northern extension of the Jemez Mountains, and copper and coal are the principal minerals found there. The Nacimiento Range rises to an elevation of 10,045 feet. The Jura Trias Company has done the most extensive development work on its claims. Twelve miles south of this group is the San Miguel district, and the principal property is the San Miguel group, the main ore being a low-grade copper. The Placitas district is on the northern slope of the Sandia Mountains. Copper, gold, lead, and silver are the principal ores. The following claims have been located: Balcomb, W. J. Bryan, Nineteen Hundred, Shamrock, Bibo, Iron Cap, Montezuma, Yellow Jack, and Valley View. East of the Placitas district is the Sandia district, in which are cement beds carrying gold, while copper, silver, and lead are also found. The leading groups are the Gold Ring and Maceo. At Hagan the Una de Gato coal mine has been extensively developed, and a railroad is at present being built to take its product to market. Adjoining the Hagan coal fields the Pino Vititas and Coyote fields are partly developed. Excellent oil indications are found in these districts. In the western part of the county and along the Rio Puerco are extensive coal fields. Mineral and hot springs of considerable fame for their curative powers are found at Jemez, San Antonio, and Sulphur, in the Valles Range, almost directly west of Santa Fe and upon the Tejon grant.

The Santa Fe Railway cuts across the southeastern part of the county for about 40 miles, and part of the branch road of the Santa Fe Central Railway, from Moriarity to the coal camp at Hagan, via Frost, now under construction, is within the county.

BERNALILLO.

The largest town and county seat is Bernalillo. It has quite an interesting history, and is one of the oldest European settlements in the Rio Grande Valley. It is picturesquely situated, and surrounded by fields and orchards, which are irrigated from the Rio Grande. It has a modern flour mill, several substantial business houses, an academy for girls, good public schools, and nice homes. Its climate makes it a very agreeable place for health seekers. Round about are many prosperous agricultural settlements. The Indian pueblos of San Felipe and Sandia are within easy distance of Bernalillo. The vineyards of the immediate vicinity are famous, the Mission grapes here attaining a size and flavor that is unexcelled. The town has a Roman Catholic church. Bernalillo is situated on the main line of the Atchison, Topeka and Santa Fe Railway. The census of 1900 gave it a population of 766, but many more people live in its immediate vicinity.

THORNTON.

Thornton is a railroad station where there are several stores, and is the terminus of the wagon road to the Cochiti mining district. Within a short distance are the Indian pueblos of Cochiti and Santo Domingo.

JEMEZ.

Jemez is in the western part of the county. In its vicinity are the celebrated Jemez, Sulphur, and San Antonio hot springs, the waters of which are especially efficacious in blood diseases, kidney complaints, rheumatism, stomach troubles, and other disorders. The excellent curative properties of these waters are well known throughout New Mexico. Not far away are the Indian pueblos of Jemez, Santa Ana, and Zia.

SAN JUAN COUNTY.

From an agricultural and climatic standpoint San Juan County is one of the most favored counties in New Mexico. Area, 5,598 square miles; population, 8,500 (4,828 according to census of 1900); assessed valuation in 1905, $917,719.38. The post-offices are Aztec, Blanco, Bloomfield, Cedarhill, Crozier, Crystal, Farmington, Floravista, Fruitland, Hood, Jewett, Kirtland, La Boca, La Plata, Largo, Pendleton, Putnam, Shiprock. The county is bounded on the north by Montezuma and La Plata counties, Colo.; on the west by Apache County, Ariz.; on the south by McKinley, and on the east by Rio Arriba and Sandoval counties.

San Juan County occupies the northwestern corner of the Territory. The Government monument, which marks its northwestern corner, also marks the corners of New Mexico, Arizona, Utah, and Colorado. It is adjacent to one of the richest mining fields in the United States, just over the Colorado line. It is an empire in itself. Of its area 1,958,400 acres are included in the Navaho Indian Reservation; 107,314 acres are part of the Ute Indian Reservation; 1,481,042 acres are still subject to entry under the land laws, 480,280 of these being unsurveyed; about 260,000 have been appropriated and about 300,000 acres are irrigable. It is five and one-half times as large as the State of Rhode Island, three times as large as Delaware, and it contains 900 square miles more than the State of Connecticut.

Topographically the county, or at least the irrigable portion of it viewed from above, presents the appearance of a basin surrounded on all sides with mountains and high ridges, with a deep notch cut into one side, through which the San Juan River flows. It is not mountainous, but it is located in the foothills, on the mesas, and in the valleys with gigantic mountain masses to the north in Colorado. Some of the hills, however, rise to a considerable altitude. Outside of the river valleys and the upper mesas, which are broad and level, the county consists of a series of double lands, broken by arroyos and generally composed of fertile soil, upon which the native grasses grow luxuriantly. The altitude ranges from 4,500 to 5,800 feet. The annual rainfall amounts to 14 inches. The water supply for irrigation is abundant, and is distributed by splendid systems of canals and ditches, several new systems being under construction. The reclamation service has surveyed a project to divert the waters of the Las Animas in part into the La Plata River to reclaim 100,000 acres. At Ship Rock a boarding school for the Navaho has been built by the United States, and irrigation works are being built. At Jewett a mission school for the Navaho is being maintained. The irrigable areas are found on the table and bottom lands of the San Juan, Las

Animas, and La Plata rivers. About 100,000 acres are under ditch, of which 50,000 acres might be easily cultivated, but thus far only 15,000 acres are under actual cultivation. Alfalfa, the cereals, and the best of fruits are the principal crops. Its apples are famous in eastern markets. Climate and conditions are especially favorable to dairying, poultry, farming, and bee culture. The live-stock industry is important, as by far the greater part of the area of the county is free public range.

The largest coal deposits of New Mexico are there, worked only on a small scale, but will be exploited extensively now that the Denver and Rio Grande Railroad has completed a standard-guage branch to Farmington from Durango, Colo., via Cedarhill and Aztec. The Arizona and Colorado Railroad has a survey completed from Durango, Colo., to Cochise, Ariz., which cuts across the county from north to south and will tap the enormous La Plata coal deposits. The principal coal mines are the La Plata, 1½ miles from Pendleton; the Enterprise, near Pendleton; the Morgan, south of La Boca; the Stevens, 2½ miles from Fruitland, with coal seams 12 feet thick; the Brimhall, adjoining the Stevens; the Kirtland, 2 miles west of the Stevens, and the Thomas mine, 45 miles south of La Boca, and with a vein 60 feet thick, the largest in the Southwest. The coal is bituminous.

The valleys of the San Juan River and its two principal tributaries in the county, the Animas and the La Plata, are thickly settled by enterprising and hard-working farmers, who support themselves by agriculture, horticulture, and stock raising. The orchards of that section are many, and San Juan County fruit has already attained a very enviable reputation. There are also indications of oil.

FARMINGTON.

The largest town is Farmington, having a population of about 1,200. It is situated on the San Juan River, between the mouths of the Animas and the La Plata rivers, and is the terminus of a branch of the Denver and Rio Grande Railroad. It was an Indian trading post twenty-five years ago. Every branch of trade is represented. There are large mercantile establishments, hotels, restaurants, a bank, a modern flouring mill run by water power, a distillery, an evaporator, two weekly newspapers, The Farmington Times-Hustler and The Farmington Enterprise. It is an incorporated town, has a system of public waterworks, and an electric-light plant. It has a commodious brick school building.

AZTEC.

Aztec, on the Animas, is the county seat. It is twenty-three years old. It has general stores, hotels, restaurants, a modern water-power flour mill, three churches, a weekly paper—The Index—a $10,000 court-house and jail, a high school building, a bank, and a private college. The population of Aztec is 600.

LARGO.

This is quite a settlement on the San Juan River, at the mouth of the Canyon Largo. It is the oldest in the county, and its inhabitants support themselves by agriculture and stock raising.

BLANCO.

On the upper San Juan River is Blanco, a new town, which bids fair to attain considerable importance in the near future, as it is the headquarters of an irrigation company which has the construction of a large canal and the bringing of 30,000 acres of land under irrigation in view and is now preparing for this work.

SAN MIGUEL COUNTY.

Area, 4,893 square miles; population, census of 1900, 22,053; present population, 28,000; assessed valuation in 1905, $4,030,782. The county seat is Las Vegas. Post-offices are Bell Ranch, Beulah, Chapelle, Chaperito, Chaves, Corazon, Cowles, Fulton, Gallinas Spring, Gonzales, Hot Springs, Las Vegas, Los Alamos, Mineral Hill, Onava, Pecos, Ribera, Rociada, Romero, Rowe, Sanchez, San Jose, San Miguel, Sapello, Sena, Sibley, Tecolote, Trementina, and Villanueva. The county is bounded on the north by Mora and Union, on the east by Union and Quay, on the south by Guadalupe and Torrance, and on the west by Torrance and Santa Fe counties.

San Miguel, "the empire county" of New Mexico, is not only one of the most favored sections of the Territory in point of early settlement and subsequent development, but it presents such diversity of resources that home seekers and investors are alike attracted to the region. The leading industry is stock raising, although the county is also a producer of cereals. The small stock owners rather than the large concerns control the range. The mild winter climate, a fair supply of water, and good shipping facilities are advantages that the stock raiser appreciates. There are about 70,000 head of cattle and 400,000 sheep owned. Crop raising without irrigation is feasible in a few of the mountain valleys. Wherever water is available for irrigation prolific crops of grain, vegetables, and fruit are raised. The lumber industry is important, and the northwestern part is timbered, part of the Pecos Forest Reserve being in the county, and a number of sawmills are located in the county. The Santa Fe Railway cuts through the county and is one of the principal factors in its prosperity. The Dawson Railway traverses the eastern portion, and a new line from Dawson via Las Vegas to Santa Rosa is being surveyed by the El Paso and Southwestern Railway Company. The climate is good, and a number of health and pleasure resorts are located near Las Vegas, the hot springs near Las Vegas being especially renowned and efficacious. The location of the Fraternal Sanitarium for Consumptives at the springs has given the climate of Las Vegas fame far and wide.

The principal rivers are the Pecos, Mora, Bear, Willow, Davis, Gallinas, Sapello, Tecolote, Bernal, Concha, Trementina, Canadian, Atarque, and Pajarito. The mountains culminate in the Sangre de Cristo Range in the western part, several peaks attaining an altitude exceeding 12,500 feet. There are quite a number of land grants in the county, including the Las Vegas, Pecos, Valles, Mora, Las Trigos, Tecolote, San Miguel del Bados, Scolly, Pablo Montoya, Baca Location No. 2, Preston Beck, Antonio Ortiz, and Anton Chico. Of the area on July 1, 1905, there were 1,460,724 acres subject to land entry, 39,192 acres of these unsurveyed.

The mineral resources of San Miguel County are varied. The most important mine is in the Hamilton mining district on the Pecos Forest Reserve. The Pecos Copper Company is here developing upon a large scale a deposit of copper, zinc, gold, silver, and lead ore. Near by are coal mines as well as 10 miles south of the mines. Many locations of copper prospects have been made on this reserve. North of Las Vegas, near the Mora County line, is the Rociada district, where much development work has been done on the Rising Sun and Azure groups. Other properties here are the Joe and Jennie and the Lone Star groups. In the Selitre district are the Selitre, Copper Queen, Last Chance, and Santa Rita groups. In the San Miguel and Mineral Hill districts are the Copper King, Santa Maria, and Mystic groups Most of the properties in all of these districts are copper bearing.

LAS VEGAS.

Las Vegas, meaning "The Meadows," is a city of over 10,000 inhabitants, situated on both sides of the Gallinas River, and is the county seat. It lies in a pretty and fertile valley at the western edge of a wide plateau of table land stretching many miles eastward and at the foot of the main range of the Rocky Mountains, occupying a commanding site in a commercial as well as climatic respect. Its history commences definitely with the year 1835, when a colony was established there by the Republic of Mexico. A grant of land comprising nearly 500,000 acres in extent was given to the community of Las Vegas for homestead and agricultural purposes, and through colonization the population gradually increased and the town or community of Las Vegas was permanently established. Las Vegas of to-day, which is a modern city, is composed, strictly speaking, of the incorporated city of Las Vegas and the town, also incorporated, lying west of the river. While portions of the old town have a quaint and picturesque appearance, adobe houses, narrow, crooked streets, old customs, handicrafts, and occupations always of interest both to local residents and tourists, yet it, as well as the new town east of the river, constitute distinctive modern cities. The streets are wide and well graded, while cement sidewalks line almost every street, and many are lined with growing trees. Three parks, with lawns and trees, add to the beauty of the place, as do handsome and well-filled stores, elegant residences, with attractive environments and nice lawns. Its thermal waters are of great healing quality, while its climate is very superior, there being no malaria, no excessive heat nor cold, and there is freedom from mosquitos. The National Fraternal Sanitarium for Consumptives has been located at Las Vegas Hot Springs, and will have the sumptuous Montezuma Hotel as headquarters for a tent city and colony, which in a few years will number thousands of inhabitants. A tent city has been established at and adjoining St. Anthony's Sanitarium. The air is pure, dry, rarefied, and highly electrified, a certain cure for consumption if the cure be taken in time. The mineral waters of the hot springs near by are a specific for liver, skin, rheumatic, and blood disorders.

The water supply is good and is taken from the Gallinas River, in the canyon, about 7 miles above the town. The latitude of Las Vegas is about the same as that of central Tennessee, while the altitude is

nearly 6,500 feet. This combination gives a peculiar and beneficial result. In the winter the thermometer seldom falls below 40° in the sun, while it oftens runs up to 65° or even more. On the other hand, in the summer the heat is never oppressive in the shade, and no night is too warm for comfortable sleep under one or two blankets. This, with the extreme dryness of the air, caused by the slight precipitation of moisture, the resinous aroma coming from the pine-clad mountains, the large amount of electricity in the air, and the ozone resulting from the altitude, as well as its location, land locked by mountain and mesa, combine to produce an atmosphere which is a balm to the respiratory organs affected with disease.

In the way of health and pleasure resorts, Las Vegas does well. It has a racing park and an annual fair and race meets. In a radius of 20 miles, in romantic mountain glens, are located many picturesque health resorts. Among them are Las Vegas Hot Springs, Harvey's Resort, Sandoval's, Mineral Hill, Romero Ranch, Blakes, Sparks, Sapello, and Rociada. There one can enjoy all outdoor sports, such as trout fishing, hunting, etc. The lover of nature has here the opportunity of viewing some of the grandest mountain scenery in all the Rocky Mountain region, the "scenic highway" being under construction at present across the Pecos Forest Reserve to Santa Fe.

Las Vegas affords satisfactory educational advantages, having five public schools, one being a handsome stone structure costing $25,000, and the Territorial normal school, which has an advanced course of study. These schools employ upward of 21 teachers, with an enrollment of 2,200 children and students. Among other schools are the Academy of the Immaculate Conception, conducted by the Sisters of Loretto; a Presbyterian mission, a Methodist training manual, and a commercial school in connection with the normal university, as well as several music schools. The city has a Carnegie library.

Las Vegas is the headquarters of the New Mexico division of the Santa Fe Railway system, and has railroad machine shops, railroad offices, tie-preserving works, and stock yards. It has two national banks and one savings bank, with deposits of nearly $1,000,000; building and loan associations, a trust company, new and commodious hotels, restaurants, and boarding houses, commission and wholesale firms carrying large stocks of merchandise. It is a noted wool center, and the annual sales of that staple reach into the millions. Here is located a large sheep-dipping plant, and a number of scouring mills are operated. There are published at Las Vegas The Optic, an eight-page daily newspaper, having the Associated Press service; several weekly publications, including The Weekly Optic and Stock Grower, La Voz del Pueblo, El Independente, and La Revista Catolica. There are fine church buildings representing the various denominations. Las Vegas has an electric railway, electric-light plants, and a roller flour mill, as well as a manufactory of mineral and carbonated waters, carriage and wagon manufactories, saddle and harness factories, planing mills, as well as lumber yards, foundry, machine shop, ice plants, and cold storage plant. The town has two telephone exchanges, one that connects it with Denver and other Colorado and New Mexico points. A large and well-equipped sanitarium, known as the St. Anthony's, is conducted by the Sisters of Charity. There are also quarries of building stone near the city. The Territorial insane

asylum, having accommodations for 200 patients, is located here. Las Vegas is the headquarters of the fourth judicial district and of the district attorney for San Miguel and Mora counties.

SANTA FE COUNTY.

Area, 1,980 square miles; population, census of 1900, 14,658; present population is 18,000; assessed valuation in 1905, $1,796,572. The county seat is Santa Fe. Post-offices are Cerrillos, Chimayo, Cowspring, Galisteo, Glorieta, Golden, Hobart, Ildefonso, Kennedy, Lamy, Madrid, Nambe, Pojuaque, San Pedro, Santa Cruz, and Santa Fe. The county is bounded on the north by Rio Arriba and Taos, on the east by Taos, Mora, and San Miguel, on the south by Torrance, and on the west by Bernalillo and Sandoval counties. Of its area 470,390 acres, 18,603 of these unsurveyed, are still subject to land entry. Of the Pecos Forest Reserve 188,900 acres are in the county. The Nambe Indian Reservation of 7,680 acres and the Santa Clara Reservation are in the county, as well as the following Pueblo Indian grants: Pecos, 18,763 acres, in part; Santa Clara, 17,369 acres; Tesuque, 17,471 acres; San Ildefonso, 17,293 acres; Pojuaque, 13,520 acres; and Nambe, 13,586 acres. Among the land grants in part or altogether in the county are the Ortiz Mine grant, the Eaton, Sitio de Juana Lopez, Mesita de Juana, Los Cerrillos, Sebastian de Vargas, Lamy, Pacheco, Gabaldon, Salvador Gonzales, Talaya, Santa Fe, Cieneguilla, Canada de los Alamos, San Domingo de Cundiyo, almost 500,000 acres in all. A number of these grants, however, have been partitioned among the many private owners. The county is very mountainous, especially in the eastern and southwestern parts. The principal range is the Sangre de Cristo, which near Santa Fe rises to 12,623 feet in Mount Baldy, 12,380 feet in the Lake Peak, and 10,546 in Thompsons Peak. In the southwestern part are the Cerrillos, Ortiz, San Pedro, South, and Sandia mountains, attaining an elevation exceeding 10,000 feet. In the western part are the foothills of the Valles, Cochiti, and Jemez ranges. It is these mountains that hold the vast mineral treasures that three hundred years ago brought the first prospectors and made the gold placers in the southern part of the county the earliest worked of any in the United States by white men. They produced gold over two hundred years before the discovery of gold in California.

The turquoise mines south of Santa Fe were worked by the aborigines. The principal placers are those upon the slopes of the Ortiz Mountains and the New Placers near Golden. They are still producers. There have been years when these placers yielded as high as $80,000 in dust and nuggets, and one nugget was picked up that was valued at $3,400. On the Ortiz mine grant is the Ortiz gold mine, and upon it was erected the first stamp mill in New Mexico. The Cunningham mine, Candelaria, Brehm, Hutchason, Brown, Humboldt, and Shoshone are in the same district. In the New Placers district, adjoining the Old Placers, are the mining camps of Golden and San Pedro. At the latter the Santa Fe Gold and Copper Company has developed extensively a copper mine and has erected a large smelter. The San Lazarus, Lincoln Lucky, Perry group of iron mines, Gold Standard, McKinley, Anaconda,

Stockton, Alto, San Miguel, Gold King, Hazelton, Shamrock, Lucas, New Mexico, Good Enough, and Old Reliable are the best-known lode mines, while the Monte Cristo, Baird, Morning Glory, Gold Dust, Red Bank, and Viola are placer locations. The Racine Mining Company, the Gold Bullion Mining Company and others are doing extensive work upon these placers.

In the Cerrillos district are the Tiffany and other turquoise mines, but it was through the discovery of sulphide ores, zinc, lead, and silver that the district came into prominence in 1879. The following year two mining camps, Bonanza and Carbonateville, were laid out south of Santa Fe. In this district is the Mina del Tierra, the oldest lode mine in the West, which was worked prior to 1680 by Indian slaves under the direction of the Jesuits. It carries silver, lead, and zinc. The ores of the district are mostly heavy sulphides of zinc and lead, carrying silver, gold, and copper, and the most important properties are the Cash Entry, Grand Central, Tom Paine, Golden Eagle, M. & L., J. B. Weaver, Galena Chief, Fairview, Sucker Boy, Evelyn group, Astor group, Empire State, Beta, Little Joe, Sunnyside, Whalen group, and Ingersoll. At Cerrillos is a 50-ton smelter.

In the Santa Fe Canyon is the Owen group of molybdenum claims and the Montezuma mine, a low-gold proposition. In the canyons northeast of Santa Fe extensive development is being done on copper, zinc, and silver prospects. On the Dalton Divide are the Mailuchet and other copper claims, and on Indian Creek the Annie Jones mine. Several gold prospects have been located on the slopes of the Sangre de Cristo Range. Near Nambe exist extensive mica deposits. At and around Glorieta are big iron deposits which have been extensively developed, and from which shipments have been made to the Cerrillos smelter. Here there are also copper and gold prospects. At and near Santa Fe are found the finest brick clay in New Mexico, and mountains of lime. The county also has gypsum deposits and splendid building stone, including marble, found near Santa Fe and the Cerrillos, and Lamy sandstones. The principal mineral product of the county, however, is coal, the coal camp being that of Madrid, just south of Cerrillos. Here coal was mined as early as 1869, and anthracite and bituminous coal have been worked within short distances of each other. The principal mine worked at present is the Cerrillos Bituminous, which produces annually about 60,000 tons of coal, almost one-third of this being anthracite. Sixteen miles southeast of Madrid is the Block coal mine, which has a 600-foot slope and a fine seam of bituminous coal 2½ feet thick. Coal deposits have been developed in the immediate vicinity of Santa Fe, also on Galisteo Creek, and in other parts of the county.

This county does not occupy as conspicuously large an area as many other counties of New Mexico, but owing to the history of its political capital, whence it derives its name, its scenic and climatic attractions, and its diversified resources, it naturally takes first rank in interest among the political subdivisions of the Territory. Of its area 950,000 acres are officially pronounced available for cultivation and pasturage, while thousands of the roughest mountain acres are clothed with timber and ribbed with valuable mineral-bearing veins.

Santa Fe County is crossed from east to west by the great transcontinental railroad of the Atchison, Topeka and Santa Fe system,

which operates over 70 miles of road within its borders, and is tapped from the north by the New Mexico division of the Denver and Rio Grande Railroad, which extends within the county from Santa Clara to Santa Fe, a distance of 30 miles. The Santa Fe Central Railway has its terminal at Santa Fe, giving the capital direct connection with the Chicago, Rock Island and Pacific system. The length of its main line in the county is 55 miles. A branch line of the Santa Fe system runs from Lamy to Santa Fe, a distance of 18 miles. A short branch of the main line also extends to the Madrid coal fields. Wagon roads reach all the towns of the county, and a telephone is in operation from Santa Fe to Cerrillos, while a long-distance line is being built to connect Santa Fe with other parts of New Mexico and with Colorado towns. From the summit of Mount Baldy the surface presents a magnificent panorama of mountains, mesas, and valleys, with many streams of water running down high mountain slopes, over precipices and bowlders, into deep and narrow gorges and widening valleys, flashing in the sunlight like ribbons of silver in their hurried and heedless race to the Rio Grande on the west, and with lofty mountain peaks of southern and northern New Mexico swimming in the blue air of the dreamy distance. The mountain ranges shelter this favored locality from violent winds and render the climate remarkably mild and equable, considering that the altitude of the valleys varies from 5,500 to 7,500 feet above sea level. Doubtless this circumstance, together with the fertility of the soil, excellence of the water, plentitude of timber, and the many marked manifestations of deposits of gold and silver bearing mineral a few miles south, prompted the intrepid Spanish explorers to locate a permanent colony and mission at Santa Fe, or the City of the Holy Faith of St. Francis, as early as 1603.

The wisdom for the selection has been well demonstrated during the three centuries that have since melted into the past. With the exception of the twelve years following the bloody and transiently successful revolt of the Pueblo Indians in 1680, Santa Fe has ever since been recognized as one of the most important outposts of civilization and commerce in the southwestern country, being continuously the political, ecclesiastical, and military capital of this region under both Spanish and Mexican rule, and though it has since seen the frontier line of the United States carried thousands of miles out into the Pacific Ocean, it still maintains its supremacy as the capital city of New Mexico, the county seat of Santa Fe County, and the most delightful residence city in the Rocky Mountains.

It may be added further that the county affords about 470,000 acres of good grazing land, partly covered with timber, and about 500,000 acres are arable land, 200,000 acres of which could be irrigated. In the absence of exact data, the land actually under cultivation by means of irrigation is conservatively estimated at 10,000 acres, while 5,000 acres more are yearly planted to crops subject to chances of enough rain in the growing season to mature them. Wherever the valley and mesa lands have been brought under the magic influence of systematic irrigation, the results have uniformly proved most satisfactory, and naturally this stimulates enterprise annually to enlarge and extend existing irrigation systems and thus gradually increase the number of acres that can be depended upon to yield regular crops.

In addition to the Rio Grande, never dry within Santa Fe County, and carrying a large volume of water, the Santa Cruz, the Nambe, the Pojoaque, the Santa Fe, the Santa Clara, the Tesuque, Dalton, Macho, Indian, Holy Ghost, Manzanares, Glorieta, Apache, Rio de los Indes, Galisteo, Arroyo Hondo, Chiquito, Panchuello, Chupadero, and Frijole, part of them being in the Rio Grande and part in the Pecos drainage, are the principal perennial streams, only a portion of whose waters are utilized for irrigation. Large areas can be reclaimed by pumping the heavy underflow in the principal valleys and by dry farming on the mesas and in the mountains. There is a good range, not overstocked. The agricultural valleys produce deciduous fruits that are pronounced the finest that can be raised, alfalfa, cereals, and vegetables. The climate is the best all-around climate in the world. Owing to the historic interest, the cliff dwellings, the scenic highway, the beauty of the scenery, its easy accessibility, its trout streams, and its varied industries, Santa Fe County attracts many tourists and health seekers.

It contains a number of prosperous towns and settlements in addition to the Territorial capital. Cerrillos is a mining camp which has a good public school and has a smelter, being the center of a rich mining country and near the extensive coal beds owned by the Colorado Fuel and Iron Company at Madrid. Superior building stone is quarried near Cerrillos. In southern Santa Fe County is San Pedro, which, when the last census was taken, had 451 people. Here a fine copper smelter has been erected to treat the ores of the extensive workings of the Santa Fe Gold and Copper Company. Near San Pedro is Golden, a prosperous mining camp of 323 persons. Galisteo is an old agricultural settlement in the center of a sheep and cattle district. Many nice ranches are in the vicinity. The precinct is credited with 736 people. Glorieta is the starting point for most of the travel and traffic for the upper Pecos River and the Pecos Forest Reserve, and near it are iron and copper ore deposits and coal veins and the interesting ruins of the abandoned Pecos pueblo.

Northern Santa Fe County has a number of prosperous agricultural communities. These are Pojoaque, with 798 inhabitants; Santa Cruz, with 674; Tesuque, 348 people, the settlement being across the divide, 6 miles from Santa Fe; San Ildefonso, 392 people, near which the Government has completed an irrigation canal for the San Ildefonso Pueblo Indians. Chimayo, in the extreme northern part, is credited with 319 people, and Canoncito, or Lamy, 17 miles southeast of Santa Fe, with 323 people. Lamy is a railroad junction point. A quarry of building and lime stone is located near the place, as well as charcoal and lime ovens, and large cattle and sheep and goat ranches are in the vicinity. Just south of it is the settlement of Cow Spring. Extensive beds of plaster of Paris are found a few miles north of Lamy; 3 miles south of Santa Fe is the agricultural settlement of Agua Fria, and still farther south Cienega and Cieneguilla, while at the old mining camp of Bonanza is a large stock ranch and chicken farm, while near by are Turquesa and the Tiffany turquoise mines. While these settlements are not incorporated, yet they all have public schools and are the centers of fertile agricultural, stock, or mining districts. There are Indian pueblos all very interesting for their primitive and quaint characteristics. The largest is Santa Clara, with 223 people; San Ildefonso, with 137

inhabitants; Nambe, with 81; Tesuque, with 80, and Pojoaque, with 12. Along the Santa Fe Central Railway a number of stations have been located or town sites laid out. They are Kennedy, at the crossing of the Santa Fe Railway; Clark and Stanley, near the O'Mara coal fields; Donaciano, on the Arroyo Hondo, and Vega Blanca, near a historic camping ground of the Comanche. At each of these points station buildings and storehouses have been erected.

SANTA FE.

The historic seat of the government of the Territory of New Mexico, as well as the county seat of Santa Fe County and the see of an archbishop of the Roman Catholic Church, enjoys the distinction of being one of the oldest towns and the oldest capital in the United States. Its permanent settlement by Europeans antedates the founding of Jamestown and also the landing of the Pilgrim Fathers at Plymouth more than twenty years. The thrilling and romantic incidents composing its history—the protracted and bloody struggles with hordes of savage Indians, the capture and pillage by hostile Pueblos in 1680, the general massacre of missionaries and explorers and flight of the governor and a few followers in the night to El Paso, the reserving of some of the handsomest Spanish maidens for wives of favored warriors, the desecration and destruction of some of the Roman Catholic churches and the restoration of the worship of stone idols, the reconquest by Diego de Vargas twelve years later, the terrible punishment visited upon the rebellious Pueblos, the change from Spanish rule to the rule of the triumphant Republic of Mexico, the capture by the United States forces under General Kearny and the building of Fort Marcy, the stirring scenes accompanying the distribution of the immense traffic of the Santa Fe trail, the wild deeds of desperadoes and the fabulous hazards at cards in the days before the advent of the railroad—afford the material for an epic poem of deep interest.

Here, so carefully preserved that the marks of its three hundred years of age are not perceptible, is located the noted Adobe Palace, which was the official residence of the Spanish and Mexican governors, and since the Mexican war has been the headquarters of all the Territorial governors or secretaries appointed by the different Presidents of the United States. Here is situated the oldest house standing on American soil, still used as a dwelling though built four hundred years ago by Pueblo Indians, and near is the San Miguel Church, first built in 1540 and still used as a place of worship. Here are the beautiful and imposing new capitol building, the massive modern Cathedral of St. Francis, the large and enduring stone Federal building, the modern penitentiary of New Mexico, San Miguel College, the Garita, the oldest cemetery in the Southwest, old Fort Marcy, Guadalupe Church, Rosario Chapel, Loretto Convent, St. Katherines, and the United States Indian industrial schools, the New Mexico Industrial School for the Deaf and Dumb; Catholic, Presbyterian, Episcopal, and Methodist churches; the large Presbyterian mission school for girls, to which is to be added a mission school for boys; modern schoolhouses, St. Vincent's Orphan School, many monuments of historic interest, a beautiful plaza and smaller parks, besides many fine business blocks and pretty residences. Here

also, side by side, are object lessons whereby the civilization of the seventeenth and eighteenth centuries can be studied in contrast with that of the present day as nowhere else in America.

Environed by protecting hills, and thus exempt from strong winds and sand storms; surrounded by enchanting natural scenery; beautified by orchards and gardens of flowers; blessed with a climate that is free from extremes of heat and cold, and air that is pure and tonic; supplied with an abundance of pure water for domestic, manufacturing, and irrigation purposes from the extensive storage reservoirs in the mouth of the Santa Fe Canyon; furnished with competing rail, express, and telegraph communication with all outside points; the headquarters of the Federal and Territorial officials; the meeting place of the legislature, the supreme court, the United States and Territorial district courts and the various Territorial boards; the see of the archbishop of Santa Fe; the location of the headquarters of the New Mexico Historical Society; a city having started a modern sewerage system; possessing a public school system with a good high school and four ward schools, and endowed by the National Government for public school purposes with the Fort Marcy Reservation of almost 20 acres in the heart of the city, Santa Fe is naturally forging to the front as a popular residence town. It has, besides the cathedral, three Roman Catholic churches, a Protestant Episcopal church, an English and a Spanish Presbyterian, and Methodist church. The United States maintains a weather bureau here. The two reservoirs of the Santa Fe Water and Light Company, located above the city on the Rio Santa Fe, cost about $300,000, and consist of a large reservoir or artificial lake, secured by means of a semicircular dam across the canyon, 600 feet long, 350 feet wide, securely tied to the bed rock, and 120 feet high, with mains and service pipes extending to every part of the city, and a smaller reservoir on the hillside which, with a new ditch line from the canyon, supplies the power required to operate the city's electric-light plant, which is supplemented by steam. There is here the oldest bank in New Mexico. Its business houses command a large trade area, and it is a gateway through which passes a big share of the wool and other products of Rio Arriba, Taos, San Juan, and Santa Fe counties, as well as of southern Colorado, bound for the south and for the east.

The Woman's Board of Trade is a unique and characteristic institution. The public plaza and library are entirely under its direction. There are fine hotel accommodations, besides a sanitarium conducted by the good Sisters of Charity, and a tent city which offers comfortable homes to health seekers and tourists. In the immediate vicinity of Santa Fe is found some of the finest scenery in the West, including peaks with perpetual snow, sylvan lakes, forests, water falls, trout streams, to which the now famous scenic highway, starting at the city, is the key. Santa Fe is also the most convenient point from which to reach the most interesting Indian pueblos, a dozen hot and mineral springs, the cliff dwellings, and the agricultural valleys and mining camps of Rio Arriba and Taos counties. Draw a circle of 50 miles radius with Santa Fe as the center. It will take in the heart of Mexico. Within it will be found a score of producing mining districts. Not only gold, but copper, silver, lead, zinc, iron, coal, turquoise, quarries of marble, building stone, limestone, beds of clay, deposits of gypsum, and veins of mica.

In that circle are found some of the best agricultural lands in the Southwest. Here are raised some of the best fruits, the best sugar beets, the best grains in the world, and it includes the Espanola, the Tesuque, the Chama, the Taos, and other valleys. Within that circle there is room and chance for profitable irrigation enterprises. In that circle flow the waters of the Rio Grande, the Nambe, the Rio Pueblo, the Truchas, the Pojoaque, the Pecos, the Santa Clara, the Santa Cruz, the Chama, and other streams, all perennial rivers with a never-failing water supply in their upper courses. In that circle are found the water power, the fuel, the raw material for a hundred great industries. The circle is the most densely populated area in New Mexico or Arizona, and offers cheap and plentiful labor for industrial enterprises, and at the same time a good market. In that circle are superior sheep, cattle, and goat ranges and forests.

New Mexico has the finest climate in the world, and in that circle is the best climate in New Mexico. Within it are the great Pecos River and Jemez Forest Reserves, which insure a supply of water, summer retreats for tourists, health seekers, pleasure seekers, sportsmen, and to the tired person who seeks quiet and rest in communion with nature in its most sublime and gentlest moods. Here are located the scenic highway, the famous cliff dwellings, the pyramids of America, ten Indian pueblos, the oldest buildings in the United States—a hundred spots which awaken memories of the romance of the great stretch of time between the coming of the Conquistadores and the supplanting of the Santa Fe trail by railroads.

It is a circle invaded by three railroads and their important branches and connections; a circle near whose circumference are located the cities of Albuquerque and Las Vegas, which, with Santa Fe, form the three largest and most important towns in the future "Sunshine State." In the center of the circle lies the city whose name is one to conjure with, a name given to one of the great transcontinental railway systems, a town whose very name is an invitation to the health seeker, to the tourist, the capital of the coming Sunshine State, a county seat, an archbishop's see, the location of many Federal, Territorial, Catholic, and Protestant church institutions; a town most charmingly situated, with a peerless climate all the year around and a better summer climate than is possessed by any summer resort in the world, and free from excessive heat and protected from the icy blasts of winter, with the sun shining almost every day of the year. These and many more are the advantages, resources, and attractions, the hub of which is the city of Santa Fe.

SIERRA COUNTY.

Area, 3,081 square miles; population, census of 1900, 3,168; present population, 5,000; assessed valuation in 1905, $1,297,865, county seat, Hillsboro; post-offices: Andrews, Arrey, Chloride, Engle, Fairview, Hermosa, Hillsboro, Kingston, Lake Valley, Las Palomas, Monticello, Phillipsburg, and Shandon. The county is bounded on the north by Socorro, on the east by Socorro and Donna Ana, on the south by Donna Ana and Luna, and on the west by Grant and Socorro counties. Ten of the townships in the western part are included in the Gila Forest Reserve. The Armendaris land grant is in the county. Of its area 1,675,628 acres was subject to land entry on

July 1, 1905, of which 274,379 acres were unsurveyed. Sierra County is one of the smallest of New Mexico's counties, only six having a less area, yet it is three times the area of the State of Rhode Island and more than one and a half times the area of the State of Delaware. The census of 1900 gives the value of farms and live stock as $1,829,000. Sierra County is rough and broken. The principal mountain ranges are the Black, Mimbres, Fra Cristoval, and Caballos. The water supply is scant, the precipitation ranging from 4 to 6 inches during the summer, while the total per annum is probably in the neighborhood of 10 inches. Irrigation is generally confined to the valleys of the few small streams flowing eastward toward the Rio Grande. None of these, however, discharge water into the river, excepting during seasons of excessive snowfall or heavy summer rains. The principal streams are the Cuchillo Negro, Rio Palomas, Las Animas, Arroyo Seco, Percha, Apache, Berrendo, and Bear Creek. Although the water supply is small, it is constant, and probably on this account a higher duty of water is reached in this district than in any other portion of the Territory. Altogether there are about 5,000 acres under cultivation, but with an available water supply probably 50,000 acres could be cultivated.

In this county will be the Elephant Butte dam and reservoir to be built by the reclamation service. Dairy products are in demand and bring high prices. Anything that will grow in southern Kansas and Oklahoma will grow here. Crops are certain, for by irrigation the farmer escapes the vicissitudes of floods and drought. Fruit does exceedingly well in the river valleys and there are a number of fine bearing orchards. Natural reservoir sites are numerous. At comparatively small expense these advantages can be utilized for the storage of flood waters. The county has a fine range. It is one of the best stock counties in the Territory. There is a good underground water supply that can be developed by wells. Sheep men and goat raisers are beginning to realize that on account of the mild winters and the good range Sierra County is a fine sheep and goat raising country. The county takes the lead in the New Mexico goat industry. In fact, its fame in that direction is becoming national. Some of the highest-grade prize Angora ewes and bucks are to be found on its famous goat ranches and the names of the leading goat raisers are known in every one of the most important goat markets in the United States. The industry is very profitable. The Santa Fe Railway passes through Sierra County from north to south. At Palomas Hot Springs are springs of remarkable medicinal virtue.

The county is a treasure house of precious metals. It has produced millions of dollars worth of gold, silver, and lead, and to-day, next to Grant County, is the principal mineral producer of the Territory, especially of gold and silver, although lead, zinc, and copper will in the future figure in its mineral production. Hillsboro is the oldest camp, gold having been discovered there in 1877. Both placer and lode gold mining is prosecuted there, and the camp has a production of $7,000,000, mostly gold, to its credit. The properties located here are the Opportunity, Ready Pay, Rattle Snake, Golden Era, Empire, Garfield, Butler, Richmond, Eldorado, Bonanza, Morning Star, Snake, Moccasin, Wicks, Prosper, Cincinnati, Mascot, Lupey, Summit, American, Virginia, Sherman, Rubicon, Whaleback, Percha, Eureka, Bobtail, Bull of the Woods, Catherine, Liliput, and Prince

Henry. From the Wicks Gulch placers one miner took $90,000 in gold in one winter. Copper and lead ores are also found near Hillsboro, and the largest body of vanadium ore in the world is the S. J. Macy lode, while among the rare minerals of the district is endlichite, found in a contact fissure 4,000 feet long. Seven miles north of Hillsboro is the camp of Andrews with the Golden Rule, Chance, Emperor, Little Nell, Ninety-seven, and Ninety-eight groups. The Pittsburg district in the foothills of the Sierra Caballos east of the Rio Grande is a new placer district. Two companies are operating on the placers in this district, and the Marion, Rosa Lee, and Napoleon lode claims have been located. The Iron Reef district lies in the vicinity of Palomas Hot Springs, and the two main properties are the Iron Reef and Meridian, both lead-silver propositions, and also carrying some gold.

One of the richest bodies of silver ore ever discovered was found at Lake Valley, in the Bridal Chamber, by a blacksmith, which yielded 2,500,000 ounces of silver, while near-by workings produced as much more. Besides the properties of the Lake Valley Mines Company, the best-known locations are the Stone Cabin, Miles Standish, Teddy, and Centennial State groups. South of Lake Valley is the Macho district, in which lead and silver are the principal ore bodies. The Dude, Hudson, and Jim Crow are the properties in this district. The Tierra Blanca district is 15 miles northwest of Lake Valley, on the eastern slope of the Mimbres Range. High-grade sulphides and chlorides of silver are characteristic of the district. Occasionally pockets of gold with very high values are encountered. The Log Cabin, Lookout, Tierra Blanca, Midnight, and Bell are the principal groups. Kingston is a silver camp in the Black Range, although also a producer of gold. The Iron King, Empire, Eclipse, Brush Heap, Black-Eyed Susan, Lady Franklin, Gray Horse, Illinois, Saratoga, Templar, Virginius, Calamity Jane, Superior, Monaska, Andy Johnson, Old Savage, Keystone, Comet, Black Colt, Bonanza, and Teddy groups have produced over $6,000,000 worth of silver. The Hermosa district lies 25 miles north of Kingston, and has produced $1,250,000 in silver. The ores carry considerable lead, and copper values are also found. The principal properties are the Palomas Chief, which has a production of $500,000 of silver to its credit, the Pelican, Philadelphia, Antelope, Emberlight, L. Atlantic Cable, American Flag, Flagstaff, and Ocean Wave.

In the Apache district No. 1, situated partly in Sierra and partly in Socorro County and 12 miles north of Hermosa, is the mining camp of Chloride, and in the same district, northeast of Chloride, are Fairview and Grafton. Silver, copper, and gold are the ores of this district. The Silver Monument has produced $100,000 worth of silver; the Colossal, $70,000. Other properties are the U. S. Treasury, St. Cloud, Nana, Midnight, Readjuster, Nordhausen, New Era, Ivanhoe, Ashville, Emporia, Braxton, Great Republic, Kingston, Triangle, Julia, Chicago, Minnehaha, Crawford, Olympia, Sunrise, Gold Bug, Camden, Copper Queen, Bullion, Alaska, Montezuma, Golden Chance, Golden Revenue, and Elephant. The Cuchillo Negro district is also in the northwestern part of the county, but in the Cuchillo Mountains, in which Edwards camp was situated. The better known locations are the Black Knife, German, Rifleshot, Dictator, Vindicator, Confidence, Enterprise, and the Iron Mountain

group, the last being a big iron deposit, while the others carry copper, lead, silver, and zinc. Sixteen miles west of Engle a lead-zinc camp has lately sprung into existence at which 40 or more men are given employment. Near Engle are also coal deposits.

HILLSBORO.

This is the largest settlement in the county and is the county seat, the court-house being a handsome brick and stone-trimmed structure. The town is reached by stage from Lake Valley in two hours' ride, the distance being less than 16 miles. The town has a bank, a weekly newspaper (The Sierra County Advocate), good stores, and is surrounded by gold and silver mines and placers reached by good roads. The surface ores to a depth varying from 50 to 150 feet are much oxidized and constitute free-milling ore. There are four mills in and around Hillsboro. East of the lode mines is an extensive area, comprising several thousand acres and known as the "Placers." With crude dry washers some $500,000 in gold have been taken from these placers. In the valley between Hillsboro and the mines are warm springs having medicinal and curative properties.

SOCORRO COUNTY.

Socorro County is the largest of New Mexico counties, covering an area of 15,065 square miles, being as large as a European kingdom. The post-offices are: Alma, Bernardo, Burley, Clear Creek, Clyde, Cooney, Datil, Estey, Frisco, Graham, Joseph, Kelly, Lajoya, Lemitar, Luna, Magdalena, Mogollon, Paraje, Patterson, Polvadera, Puertecito, Quemado, Reserve, Rosedale, Sabinal, Salt Lake, San Acacia, San Antonio, San Marcial, Socorro. The resources correspond to the county's area in variety and extent. It is, first of all, a stock-grazing country, the number of sheep on its ranges reaching 1,000,000 and the number of cattle exceeding 100,000. Agriculture and horticulture in the Rio Grande Valley and along some of the minor streams is very successful. In the southwestern part, especially in the Gila Forest Reserve, there are large areas in timber. The Rio Grande traverses the county; its principal tributary here is the Puerco. The Gila and the San Francisco rivers are important water sources in the western portion. Other streams are the Salado, San Lorenzo, Alamillo, Chupadero, Nogal, Parida, Water Canyon, Datil, Alamo, Big Pigeon, Whitewater, Mangos, Largo, Apache, Bonita, Gilita, Diamond, Silver, Pueblo, and Beaver.

The principal mountain ranges are Sierra Oscura, San Andreas, Magdalena, San Mateo, Datil, San Francisco, Tularosa, Mogollon, Pinon, Black, Diablo, and Ladron, some of them attaining an elevation of almost 10,000 feet. In every part of the county are evidences of volcanic action, such as lava fields, craters, and hot springs. Alkali flats and salt lakes are found in the western portion, where there are also prehistoric cliff and communal buildings. On July 1, 1905, there were in the county 7,974,753 acres subject to Federal land entry, of which 2,055,310 acres are still unsurveyed. The southwestern corner is taken up by the Gila Forest Reserve, while in the Rio Grande Valley and upon adjoining mesas are the following land grants: Casa Colorado, Belen, Servilleta, Socorro, Bosque de Apache, and the Armendaris grants. The county is bounded on the north by Valencia;

on the east by Torrance, Lincoln, and Otero; on the south by Otero, Donna Ana, Sierra, and Grant counties, and on the west by Apache and Graham counties, of Arizona.

Socorro leads all other counties in mineral production and has more mining districts than any other county, and at least two—the Magdalena and Cooney districts—are world famous. In the first-named, two mines, the Graphic and the Kelly, have to date produced $6,000,000 worth of silver and lead ores, and are now producing a large amount of zinc. Other mines in the district are the Juanita, Juanita South, Ambrosia, Young America, Enterprise, Hardscrabble (which has to its credit a production of $350,000), Cavern, Fifty-eight, Tip Top, Grey Hound, Samson, Review, Ouray, Umpagra, Legal Tender, Silver Peg, Silent Friend, Cimarron, the Nit, Imperial, Grand Ledge, Pearl, Key group (upon which only recently a large body of cerussite was uncovered), Oxide, Wheel of Fortune, Golden, and Iron Mask. Between the camps of Magdalena and Kelly is the Graphic smelter, and on the Iron Mask is a smelter which has never blown in. These districts have produced $9,000,000 in lead, silver, and zinc, the production of the latter during the past fiscal year having exceeded $800,000.

The Cooney and Mogollon districts, in the southwestern part of the county, on the Gila Forest Reserve, have produced several million dollars in gold, silver, and copper. The Cooney mine alone has produced $1,000,000. The Confidence and Black Bird have produced an equal amount; the Maud S. has produced $750,000; the Last Chance, $250,000; the Little Fannie, $1,250,000; the Deep Down, $75,000, and the entire district $5,000,000. Besides the properties mentioned, there are the following groups and lodes: Florida, Independence, Little Johnnie, Malachite, Little Charlie, Eberle, Kat and Kitten, Contention, Grey Hawk, Copper Queen, and Leap Year. Southeast of Cooney is the Wilcox district, the principal locations being the Zacaton, Silver Prize, I. S., Western Star, Uncle John, and Butterfly, the ore carrying gold and silver, except the Zacaton group, which is a copper proposition. In the Tellurium district, adjoining the Wilcox district on the north, are the Tellurium Nos. 1 and 2 and the Pine Hill. The Socorro Mountain district has produced $760,000, mostly in silver and lead. The chief production was by the Torrance and Merritt mines. Other properties are the Hammel and Volcanic Mountain. The Rosedale district is a gold producer in the San Mateo Mountains. Thus far the Rosedale has been the only producer, other properties being the New Golden Bell, White Cap, Bay Horse, Ninety-one, May Dew, Baking Powder, New Year, New Year No. 1, Rockefeller, Golden Gate, Gold Cap, Amy B., Greenwood, and Graham. West of the Rosedale district is the Red Hill district, which has gold and copper prospects. The Water Canyon district lies on the northeast slope of the Magdalena Mountains, and the principal properties are Timber Peak, Buckeye, Iron King, Little Baldy, Wall Street, and Jennie Lee, the ore being gold, silver, copper, lead, and zinc.

In the Abbey mining district, 18 miles northwest of Magdalena, copper and lead ore and a fine coking coal are found. In the Cat Mountain district, 12 miles southwest of Magdalena, the principal mines are the Abbey and Legal Tender, the values being a refractory low-grade gold ore. In the Iron Mountain district, 10 miles north-

west of the Magdalena district, large deposits of iron are found, as well as lead and silver. The main locations are the Summit, Old Boss, Mammoth, and Cabinet. The abandoned mining camp of Council Rock is in this district. The Pueblo district lies immediately north of the mining camp of Magdalena, and has produced silver ore, the principal prospects being the Red Jacket, Chloride, Sophia, and Ace of Spades. The Lemitar district is north of Socorro Mountain, and carries lead and zinc and silver, with indications of copper. The San Lorenzo district is located 8 miles west of San Acacia. Gold, copper, silver, and manganese are the values, and the leading locations are the Jerome, Camp Bird, and Sacramento. The Hanson district is in the Ladrone Mountains, and gold, silver, and lead prospects have been located in it. The Canoncito district is 5 miles north of San Acacia, but on the other side of the Rio Grande. Gold, silver, lead, iron, copper, and manganese occur in this district. The only development work thus far has been on the Dewey group.

In the Chupadero Mountain district copper indications have been noted. The Jones district is in the northern end of the Sierra Oscura, the principal property being the Jones iron group. Besides the extensive deposits of iron, there are indications of gold, silver, copper, lead, and zinc. The Hansonburg district is on the western slope of the Sierra Oscura and is copper bearing, the principal location being the Alcazar group. The Estey City district lies in the southeastern corner of the county, and Estey City is a copper camp. The district produced $10,000 in copper, and the principal locations are those of the Dividend Mining and Milling Company, the Sierra Oscura Company, and the Litttle Effie, Just Before, and Lucky Jack. In the San Andreas district, which comprises several subdistricts in the San Andreas Mountains, are the Litttle Burro, Chicago, Mocking Bird, Boulder, Whirlwind, Coyote, Rattler, Bean, Grand View, Sixteen to One, and Gold Reserve. The ores are lead, silver, and zinc. Mica deposits have been located in this district. Gold, silver, copper, and iron are the ores of the Mound Spring district, in the eastern part of the county. In Socorro County was located the first coal mine in the Territory, this being the Government mine in the Carthage district, which was opened in 1863. In this district are also the Hilton, Bernal, and Emerson coal mines. Extensive areas of coal land are found in the western part of the county, as well as alum beds, gypsum, and salt deposits.

SOCORRO.

Socorro, the county seat, is also the largest town. The census of 1900 gave it 1,515 inhabitants. Elevation, 4,567 feet. The country round about is rich in mineral and agricultural resources. The waters of the Rio Grande, which flow near the city, are ample to irrigate a large area, the waters of the Puerco and the Salado augmenting its volume considerably 20 or 30 miles north. The Carthage coal fields are so near to Socorro that they may be called tributary to the city, and the mining camps of Kelly, Magdalena, and Water Canyon are also tributary, making it a favorable smelter site. The town has large brickyards and flouring mills. The city is beautifully situated on a table-land at the foot of Socorro Mountain, and is a favorite health resort; the Rio Grande is about 2 miles from it. The city

owns and controls its own waterworks, the supply being derived from warm springs of exceptionally pure water flowing from the base of Socorro Mountain. The town has two banking institutions, two weekly papers—the Socorro Chieftain and El Defensor del Pueblo—two substantial school buildings, churches, and good business houses, and is the headquarters of the district attorney for Socorro and Sierra counties. The New Mexico School of Mines is located here.

SAN MARCIAL.

The second largest town, San Marcial, is attractive for the reason that twenty-one years ago the Atchison, Topeka and Santa Fe Railway Company planted great avenues of cottonwood trees, and these have been constantly added to by citizens. It is important commercially because it is the supply point for a large area of country. Four mercantile firms draw trade from a wide territory occupied by people engaged in the cattle and sheep business, and from the settlements of Clyde, Rosedale, Paraje, Engle, and Chloride. Its population is almost 1,000. The town has a beautiful park. It is a division headquarters of the Santa Fe Railway Company, and here are located a roundhouse and repair shops. A modern flouring mill is conducted for the convenience of a large number of farmers in the rich Rio Grande Valley. Fruitful orchards surround it, and it is a rich agricultural, horticultural, live stock, and mining region. Alfalfa is extensively grown, and when there is an ample supply of water, which is taken from the Rio Grande through ditches, four crops in one season are of common occurrence. This finds a ready market, the price per ton ranging from $10 to $14. There is a good public school building and there are several churches. There is a bank and there is a goodly number of business firms. Located near the center of the Territory, at an elevation of a little over 4,000 feet, the climate makes it a sanitarium for consumptives. Here are to be found all the conditions for a healthy and happy life, with the opportunities to realize the maximum of profit in the lines of agriculture and horticulture. San Marcial is not devoid of historical interest. One of the features of the town is a large and extensive promontory known as "The Mesa." Here occurred the battle of Valverde, fought February 20, 1862, by General Sibley's Texans and the Union forces under General Canby. The severest part of the battle occurred about the present site of San Marcial. Frequently cannon balls and other relics are plowed up on the east side of the river.

Carthage is a coal camp and is to be connected by railroad with San Antonio, a commercial center on the Santa Fe Railway. At San Acacia a weekly newspaper, El Comercio, is published, and here has been established a religious community called "New Jerusalem," which publishes a paper. Near the settlement are copper ore deposits.

TAOS COUNTY.

Area, 2,283 square miles; population, 13,000 (census of 1900, 10,889); assessed valuation in 1905, $720,661.65; county seat, Taos. Post-offices are Arroyo Hondo, Arroyo Seco, Cerro, Costilla, Llano, Lobo, Ojo Caliente, Penasco, Pina, Questa, Ranches of Taos, Red

River, Talpa, Taos, Trampas, Tres Piedras, Twining, and Valdez. The county is bounded on the north by Conejos and Costilla counties, Colo.; on the east by Colfax and Mora; on the south by Mora and Rio Arriba, and on the west by Rio Arriba County. Part of the Pecos Forest Reserve is in the county, and two Indian grants, that of Taos, 17,361 acres, and that of Picuris, 17,461 acres, are in the county. Other grants partly or wholly in the county are the Sangre de Cristo, Arroyo Hondo, Antonio Martinez, Rancho del Rio Grande, Santa Barbara, Las Trampas, Serna, F. A. Gijoso, and Ledoux.

The county is the most picturesque and in many respects one of the richest in mineral resources in New Mexico. It is also one of the oldest in point of settlement by white men and one of the best watered. At one time it included Colorado south of the Arkansas River, Colfax and Mora counties, and part of Rio Arriba County, but at present it is small in extent; yet its area is twice that of the State of Rhode Island and 323 square miles more than the State of Delaware. Of this almost one-half, or 619,791 acres, were open to entry under the Federal land laws on July 1, 1905, and 286,041 acres are still unsurveyed. About 120,000 acres are reserved and 730,000 acres are appropriated, about 600,000 acres being included in private land grants. The county is one of the most densely populated in the Territory, but could support five times its present population. The Rio Grande traverses it from north to south, but through rocky gorges. Hence the cultivated lands are along its tributaries. The county is characterized by the great number of small perennial streams which, arising in high ranges on the east, debouch at about one-third the general width of the district upon the high mesas forming the central and western thirds and flow into the Rio Grande. Besides the Rio Grande the principal rivers are the Pueblo, Santa Barbara, Rio Grande del Ranchos, Rio Taos, Arroyo Seco, Las Trampas, Petaca, Latir, Cabresto, Costilla, Colorado, Rio Hondo, Lucero, and Fernandez. Most of these are beautiful trout streams. The Taos Range, comprising the catchment area from which these streams derive their waters, ranges in altitude from 7,000 to 13,000 feet above sea level, with slopes tree clad, and with precipitation greater than in many sections of the Territory. Taos Peak has an altitude of 13,145 feet; Jicarilla Peak, 12,944 feet; Costilla Peak, 12,634 feet; United States Mountain, 10,734 feet; Costilla Pass, 10,188 feet; Ute Peak, 10,151 feet; and Taos Pass, 9,353 feet.

Only one-half of the available water is used, and with the building of storage reservoirs the area under cultivation would be 200,000 acres instead of 20,000 acres. The cereals yield prolifically, and vegetables and fruit grow well. About 200,000 sheep, 10,000 goats, and 5,000 cattle graze on the ranges. At Ojo Caliente are famous medicinal hot springs. At Wamsley and near Taos are also hot springs, which attract many health seekers. The railroad facilities are meager. The Denver and Rio Grande has not quite 50 miles of narrow-gauge track in the extreme western part, near the Rio Arriba boundary line, but Tres Piedras is the only settlement of any consequence it touches, although there is also a station at Embudo, which is several miles from the town of that name. The scenery along this railroad, especially from Embudo to Barranca, is among the grandest

in the Southwest. From Embudo, Tres Piedras, and Servilleta stations to Taos there are roads with daily stage lines, while the mining camps of Red River and Amizett and the settlements of Cerro and Questa also have road connection, as have to a lesser extent all the post-offices. Portions of the county are heavily timbered. On account of the difficulty in bringing the merchantable timber from the steep mountain sides to the railroad sawmills are in operation in various parts, the principal being near Questa and Twining.

Taos County is very rich in minerals, but at present has no producing mines, mainly owing to the lack of railroad facilities. The best-known camp is that of Red River, on the Colfax County border. It is a gold camp, and the principal properties are the Copper King, Golden Treasure, Jayhawk, Independence, Angola, Black Diamond, Peerless, Homestake, Copper Dome, Anaconda, Standard, Laura B., Minnie L., Last Chance, Fort Reno, Deadhead, Yankee Maid, J. O. G., Deadwood, Ragged Pants Dick, Golden Treasure, Paxton, Copper Hill, Hornet, Rock of Ages, Sure Thing, Exile, Bueno, Commodore, and Wild Rose. The Black Copper district is north of Red River and its leading group is the Black Copper, a gold proposition. The Midnight district lies in the northeastern part of the county and the Cashier group is the leading property. The La Belle district lies near the Colorado border, and its best known property is the Aztec. On the western slope of the Taos Range is the Twining district. Placer gold and copper and gold and silver lodes are the features of the district in which the principal development has been done on the Fraser (which has a 100-ton smelter), the Bull of the Woods, South Fork, King Solomon, Berry Extension, and Copper King. The Glenwoody district is on the Rio Grande, and has placers as well as immense low-grade quartz deposits carrying gold. The Glenwoody is the main property and has a 50-ton mill operated by water power from the Rio Grande. West of Glenwoody is the Copper Mountain district, where the principal operations have been carried on by the Copper Hill Mining Company (which built a 100-ton smelter) and the Green Mountain Copper Company, the other groups worthy of mention being the Ural and the Wilson. Near Ojo Caliente are mica deposits, and considerable prospecting has been done in the same vicinity.

FERNANDEZ DE TAOS.

The county seat, Fernandez de Taos, is romantically situated in a beautiful valley surrounded by mountains which rise abruptly from the plain. It is a very interesting town, quaintly built around a large plaza. The Roman Catholic church is of great antiquity. Before the advent of the railroads in New Mexico it was a commercial center of great importance, and even to-day enjoys a good trade. Among the early American residents were Col. Kit Carson, Governor William Bent, who was assassinated here during the Pueblo insurrection, Col. Ceran St. Vrain, Judge Beaubien, Lucien Stewart, and others. Here the first printing press west of the Missouri River was set up in 1837 by Rev. Antonio J. Martinez, and the first newspaper, El Crepusculo, was published. A good public school, mission schools, and a Loretto academy are the educational facilities of this town. It has a population of 1,500. A weekly newspaper, called Revista de

Taos, is published here. Only 3 miles to the northwest, under the shadows of the great mountains, and occupying both sides of a clear, bright river, is the pueblo of Taos, undoubtedly the most interesting Indian settlement on all the Western Continent. Scores of tourists come to visit it annually, especially on its annual feast day, San Geronimo, September 30. The Jicarilla Apache Indians, the Navaho, as well as the Pueblo from the south, send delegations to this festival, and the settlers from scores of miles around gather at the pueblo on that day. The population of the pueblo has decreased in numbers the past few decades, and is but few over 400 at present. The Indians cling tenaciously to their primitive customs. Ranchos de Taos is 4 miles south of Fernandez de Taos and is the largest settlement. It has two flouring mills and is surrounded by orchards. It is the center of 60,000 acres of fertile land, of which one-sixth is under cultivation. It has a public school and is the headquarters of the Presbyterian missions of this section. The population is 1,800.

RED RIVER.

The mining camp of Red River is romantically situated, with about 300 population, a good public school, and a weekly newspaper, the Red River Prospector.

TRES PIEDRAS.

The railroad, mining, and lumber town of Tres Piedras, on the Denver and Rio Grande Railroad, is a distributing point for the Bromide and Hopewell mining districts, in Rio Arriba County, and the terminus of a daily stage line from Taos. A newspaper, the Mining Reporter, is published here.

EMBUDO.

A prosperous agricultural settlement on the Rio Grande, Embudo, is situated at the foot of high mountains. It has a railroad station several miles south of it, from which a daily stage line for Taos, Twining, and other points starts. It has a public school and a mission school.

Questa and Cerro are prosperous agricultural settlements. Costilla, Pima, Agua del Lobo, Arroyo Seco, Llano, Trampas, and Penasco are agricultural settlements surrounded by fertile lands under cultivation. Picuris is a quiet Indian pueblo, with a population of 100 and several historic buildings.

TORRANCE COUNTY.

This county, which came into existence on January 1, 1905, is almost in the geographical center of the Territory and covers 3,330 square miles. Its population is estimated to be 6,500. It is bounded on the north by Santa Fe and San Miguel, on the east by Guadalupe and Lincoln, on the south by Lincoln and Socorro, and on the west by Valencia and Bernalillo counties. Of its area, 2,148,462 acres were subject to land entry on July 1, 1905, of which 679,780 acres were unsurveyed. The land office for its southern part is at Roswell, and for its northern part, Santa Fe. The county has no rivers, but

large springs and a substratum of water, which in the Estancia plains rises to within a few feet of the surface. It also has many lakes, most of them alkaline, but two of them salt. The Manzanos is its principal mountain range, rising to an altitude exceeding 10,000 feet and well timbered. Other mountains are the Gallinas, Animas, Pedernal, and Cameleon Hills, the most prominent peaks being Manzano Peak, 10,086; Mosca Peak, 9,723; Pedernal Peak, 7,580 feet; Bosque, Capillo, and Rattlesnake peaks, Cerrito del Lobo, and Cerro del Pino. The Santa Fe Central Railroad cuts through the center of the county from north to south and the El Paso and Northeastern cuts the southeastern corner, forming a junction with the Santa Fe Central at Torrance. The New Mexico Eastern is being built in the county from Abo Pass to a junction with the El Paso and Northeastern and crossing the Santa Fe Central at Willard. From Moriarty, on the Santa Fe Central, the Albuquerque Eastern is under construction to Albuquerque, and a coal branch from Frost to Hagan.

The assessment of the county for 1905 is $319,981. Its postoffices are Duran, Eastview, Encino, Estancia, Gran Quivira, Manzano, Moriarty, Mountainair, Palma, Punta, Red Cloud, Pinos Wells, Tajique, Torrance, and Willard. Stock raising is the main industry of the county, and 250,000 sheep are found on its ranges. Agriculture is also receiving considerable attention of late and new settlers are taking up the fine lands of the Estancia Valley, in which dry farming will prove successful and in which plenty of water for irrigation can be obtained by pumping from low depths, while the mesas and hills bounding it afford excellent range in winter and summer. In the Manzano Mountains are several agricultural settlements, and at Manzano is an apple orchard one hundred years old. Considerable salt is taken from the salt lake at Estancia, which, besides supplying the home demand, also supplies the ranchmen for a hundred and more miles distant. In the Manzanos some mining has been done, and in the Gallinas promising mineral indications have been discovered. Lumbering is an important industry in the Manzano Mountains.

ESTANCIA.

The county seat and principal settlement is Estancia, a new town with about 500 inhabitants, good public school, churches, and prosperous business houses. The shops of the Santa Fe Central Railway have been located here. A town site with a public park has been laid out. A weekly newspaper, The Estancia News, is published. The town is noted for its fine springs of exceptionally pure water. It is the center of the magnificent Estancia Valley, which is rapidly filling up with settlers. Farms are being laid out on every side, and windmills dot the landscape in every direction. All the cereals and vegetables of the Temperate Zone can be raised, and there is every promise that horticulture will prove successful. West of Estancia are the famous salt lakes, and a plant is to be built at Estancia for refining the salt.

MORIARTY.

The settlement of Moriarty is at the junction of the Santa Fe Central and the Albuquerque Eastern, and many homesteads have been

taken up roundabout, as it is on the northern crest of the Estancia Valley and beautifully located. It promises to become an important coal-shipping and commercial point.

WILLARD.

Willard is at the junction of the Santa Fe Central and the New Mexico Eastern Railway. It has a large store, and a town site has been laid out. It is in the southern part of the Estancia plains and near the alkali lakes, which dot the western part of the valley.

TORRANCE.

Torrance is at the junction of the Santa Fe Central and the El Paso and Northeastern, and has a union depot, business houses, and is a trade center of some importance.

Manzano, Punta de Agua, Pinos Wells, Eastview, and Tajique are ancient settlements, while Mountainair is a new town near Abo Pass, on the New Mexico Eastern, now under construction by Santa Fe system.

There are several community grants in the county, including the Chilili, Tajique, Torreon, and Manzano grants.

UNION COUNTY.

Area, 6,037 square miles; population, census of 1900, 4,528. Since then the county has given 255 square miles to the formation of Quay County. Its present population is 6,500. Assessed valuation in 1905, $1,714,627. Post-offices: Albert, Barney, Beenham, Bryantine, Bueyeros, Clapham, Clayton, Cuates, De Haven, Folsom, Gallegos, Garcia, Genova, Gladstone, Leon, Logan, Naravisa, Pasamonte, Valley, and Veda.

The county is bounded on the north by Las Animas County, Colo.; on the east by Beaver County, Okla., Dallam, Hartley, and Oldham counties, Tex.; on the south by Quay and San Miguel, and on the west by Colfax, Mora, and San Miguel counties. The Canadian River is the principal stream. Other streams are Ute Creek, Tramperos, Tucumcari, Los Cerros, Flag, Carriso, Major Long, Leon, Palo Blanco, Hol Keo, Currumpaw, Travesier, and the Dry Cimarron. The principal mountains are the Sierra Grande, in which Mount Capulin, an extinct volcano, rises to an elevation exceeding 9,000 feet, the Don Carlos hills, Rabbit Ear Mountain, and many isolated hills and bluffs.

Union, the northeastern county of New Mexico, was formed in 1893 out of portions of Colfax, Mora, and San Miguel counties. It is more than five times as large as Rhode Island, three times as large as Delaware, and as large as the Hawaiian Islands. Of its area only 727,771 acres have been appropriated, while 3,135,815 (of these 322,743 acres being unsurveyed) acres are still subject to entry under the United States land laws. Clayton is the land office for Union County.

Stock raising is the principal industry and the source of its wealth. The mild winters, the free range, and the flourishing grasses make stock raising very profitable here. Of the 60,000 cattle on the range

many are a good grade of Herefords, and a number of model stock farms are to be found. The number of sheep exceeds 600,000, it leading all others in the Territory in the sheep industry. At Clayton, the county seat, 3,000,000 pounds of wool are sold annually, while buyers of lambs for feeding and breeding purposes make frequent visits to Clayton and Folsom. Each year 100,000 lambs are shipped to Colorado and Kansas City points, where they are fed for market. Of late years quite a number of cattlemen have been raising alfalfa on a small scale for feeding purposes. Altogether about 2,000 acres have been put under cultivation. The sheep growers will undoubtedly soon follow this example. The cattlemen are rapidly improving their stock by importing registered cattle from the States. The raising of goats is a growing industry, as well as the breeding of horses for market, both proving profitable. Railroads afford good facilities for the shipment of stock.

Whenever water is available for irrigation purposes crops of grain, vegetables, and fruits can be raised with unvarying annual success. There are a number of orchards in which every variety of fruit of the Temperate Zone is raised. Wild fruits and nuts grow in abundance along the streams and on the mountain slopes. If the flood waters which run down the river beds at certain seasons were stored, fully 100,000 acres could be brought under cultivation. Many natural reservoir sites exist. Ten miles west of Folsom commences the Johnson mesa, 8,000 feet high, extending into Colfax County almost to Raton, on which without irrigation fine potatoes are raised; also large crops of oats. Dry farming will eventually reclaim many acres in this county.

Mining is in its infancy, but there are undoubted indications of gold, silver, copper, and lead ores in various precincts. Coal deposits exist in the northern part, the veins being an extension of the Trinidad fields in Colorado. A good grade of bituminous coal is found near Clayton, and development work is being done in a desultory way. Coal veins also underlie Johnson Mesa.

Indications of oil can be pointed out along many streams, and often in drilling for water oil sands and rock are struck. Fine mineral springs are at Folsom, and there is but little doubt that artesian water will be found at a moderate depth. On Ute Creek are deposits of pure alum, while excellent lime quarries are worked near Folsom.

The Colorado and Southern Railroad crosses the northeastern corner for a distance of 84 miles. The Chicago, Rock Island and Pacific passes through its southern part. A survey of the St. Louis, Rocky Mountain and Pacific Railway is being run from Des Moines on the Colorado and Southern in this county, to Elizabethtown, Colfax County.

The climate is as good as is to be found in the United States. The altitude, ranging from 4,000 to 8,000 feet, giving the air a lightness that is especially beneficial in pulmonary troubles. The nights are always cool, and the summer heat is moderated by the altitude as well as the cool breezes from the mountains, while the cold in winter is tempered by the constant sunshine and protection which the mountains afford from high winds.

The county seat is Clayton, situated in the northeastern part, on the Colorado and Southern Railway. Here the Federal land office for the northeastern part of New Mexico is situated. The town has

a population of 800. It has electric lights and waterworks, a telephone system, a very good public school system, and a fine public school building; Methodist, Baptist, and Christian churches; many business establishments, a $20,000 court-house, and contains nice homes. From here 3,000,000 pounds of wool, 160 carloads of cattle, and 400 carloads of sheep and lambs are shipped annually. Two weekly newspapers, one in English, The Clayton Enterprise, and the other in Spanish, El Fenix, are published here. There is a national bank here. Of late years the town has attracted many health seekers. Coal deposits are being worked in a small way near Clayton.

Folsom is the second largest town, having a population of 750. It is situated on the Colorado and Southern Railway, and is gaining fame as a health resort. It is 6,400 feet above sea level, and is located in a beautiful valley. The Sierra Grande, 12 miles distant, rises to an altitude of 11,500 feet. During the summer months this mountain is one mass of flowers, and is a magnificent sight. Sierra Capulin, 5 miles from the town, is 9,500 feet high, and is an extinct volcano with a perfect crater. The view from Capulin is grand.

Nine miles from Folsom, on the Colorado and Southern Railway, are the so-called American Alps. Emery Peak and Buffalo Head are also visible. Twin Mountains, Robinsons Peak, Dales Peak, and Red Mountain can be seen on clear days, and 330 days each year are clear at Folsom. The Cimarron Falls, near the Hotel Capulin, a sanitarium built at a cost of $75,000, but not completed, are grand. Numerous springs bubble forth from the sides of the mountains inclosing the valley of the Cimarron, in which Folsom is situated. The waters of some of the springs are almost absolutely pure; while others are charged with mineral and cure persons suffering from gout, rheumatism, neuralgia, stomach troubles, and certain forms of kidney disease. Several sulphur springs and sulphur wells near Folsom are beneficial to persons suffering from skin diseases and impure blood. The most celebrated spring is in Oak Canyon, near the town, the waters of which are superior to those of the famous spring at Manitou, Colo. These waters contain sulphur, magnesia, and carbonic-acid gas. Folsom is an important trade center. Immense sheep-dipping tanks have been erected here by the Colorado and Southern Railway, and the shipments of wool, sheep, lambs, and cattle from this point annually are very large. It has an $8,000 public schoolhouse. Water is found anywhere in the Cimarron Valley at a depth of from 14 to 30 feet and is free from alkali. Indications of gold, silver, copper, and lead ores, and coal are found near the town. Lime quarries are located near and the product is being utilized in the manufacture of plaster.

VALENCIA COUNTY.

Area, 5,712 square miles; population, census of 1900, 13,895; present population, 15,000; assessed valuation in 1905, $1,315,074.32; county seat, Los Lunas. Post-offices: Aconita, Belen, Bibo, Bluewater, Casa Blanca, Copperton, Cubero, Grant, Kettner, Jarales, Laguna, Los Lunas, Marquez, Otero, Paguate, Peralta, Publitos, San Mateo, San Rafeal, Seama, Seboyeta, and Tome. It is the eighth largest of New Mexico's counties, covering an area more than five times that of the State of Rhode Island, three times the area of the

State of Delaware, and greater than that of the State of Connecticut. Of this vast stretch 1,029,489 acres are still unappropriated, 33,528 acres being unsurveyed. The land office for the district is at Santa Fe. The county is bounded on the north by McKinley, Sandoval, and Bernalillo; on the east by Torrance; on the south by Socorro County, and on the west by Apache County, Ariz. Quite a large portion is included in private Spanish and Mexican grants.

The principal stream is the Rio Grande, which passes through the county from north to south. There is a large area of irrigated land on both sides of the river along its entire course. The Puerco, which at times has a flood discharge of about 32,000 second-feet, is a tributary of the Rio Grande and flows through the county. Along the Puerco River and its tributaries something like 14,000 acres are under irrigation. The character of the country through which the Puerco passes is hilly and broken. Other rivers are the Zuni, San Jose, Los Nutrias, Pescado, Colorado, Ponil, Bluewater, and Alamosa. Many fine springs are found in the county. The county's altitude ranges from 4,000 to 7,000 feet, and the annual precipitation is very light, averaging only 7 inches. For that reason there are but few perennial streams in the whole drainage area. Naturally in so large an area as that covered by Valencia County almost every variety of topography is found. The Continental Divide crosses from north to south. East of the Rio Grande the Manzanos, rising to over 10,000 feet, are the principal mountain range, forming a watershed between the Rio Grande drainage basin and the dry mesas of the eastern part. In the western part the Zuni Mountains and the San Mateo Range are the principal mountain systems. In the latter Mount Taylor attains an elevation of 11,389 feet, the highest point in the county. A vast lava bed extends the entire breadth of the county east of the Continental Divide. Among the land grants in the county are the Cebolleta, Antonio Sedillo, Paguate, Belen, Casa Colorado, Tome, San Mateo, Chaves, San Clemente, and Lo de Padilla. A small part of the Zuni Indian Reservation is in the county and the following Pueblo Indian grants: Acoma, 95,752 acres, and Laguna, 125,225 acres. The Santa Fe Pacific Railroad grant also covers a large area in the county.

The county is rich in minerals, but thus far but comparatively little has been done to make the mineral wealth available. Gold, silver, copper, and iron ores, sulphur, lithographic stone, gypsum, brick clay, salt, pumice stone, ocher, building stone, cement, potash, and, most important of all, coal in almost limitless quantities, are found. Gold silver, and copper ores exist in the Zuni Mountains and in the Manzanos. In the Zuni Mountains, especially in the Copperton district, considerable development work has been done. In the western part are extensive coal fields and several salt lakes.

The Santa Fe Railway cuts through the central portion of the county from north to south, entering south of Isleta and leaving north of Sabinal, a distance of 25 miles. The Santa Fe Pacific Railroad commences at Isleta and leaves it northwest of Bluewater, the distance being 80 miles. The New Mexico Eastern Railway is being constructed from Belen, via Abo Pass, to Texico. The county has about 200 miles of telegraph, and a telephone line extends from Albuquerque to Belen and Los Lunas.

The lands under irrigation are very fertile, and the climate is good for the raising of grain, vegetables, and fruit. Wheat from Va-

lencia County captured the first premium at the World's Fair at Chicago and again a gold medal at the Charleston Exposition, the wheat weighing 50½ pounds per bushel. Oats grown on a farm 6 miles from Los Lunas took the second prize at the Columbian Exposition. The principal crops are wheat, barley, oats, corn, alfalfa, and all vegetables and fruits of the South Temperate Zone. Some of the finest orchards in the Southwest are located here. Grapes are grown in large quantities, the Mission grape predominating, but other varieties, such as the Tokay, Sultana, Concord, and Muscat, do very well. Alfalfa is a staple crop. In some of the valleys in the Zuni Mountains and in several other hill districts crops are grown without irrigation, the rainfall being sufficient to mature them. The mild winters, cool summers, good water, nutritious grasses, and sheltered valleys and canyons have attracted the cattle raiser and the sheep grower. It is one of the leading sheep-raising sections in New Mexico. It is estimated that there are within its limits 400,000 or more sheep and thousands of cattle and horses. Lately some attention has been paid to the raising of goats, and the success is such that the number of these animals will be very much on the increase during the next few years. At Belen is one of the largest flour mills in the Territory. At Laguna and Peralta there are also fine modern flour mills. There are extensive timber lands, which of late have attracted the attention of the lumbermen and capitalists. The so-called " Mitchell " tract, in the northwestern part, covers 300,000 acres, on which it is estimated there are 2,000,000,000 feet of good white pine lumber. The American Lumber Company, a syndicate capitalized at $8,000,000, is cutting this timber. A logging road has been built from Thoreau, on the Santa Fe Pacific, to the tract.

BELEN.

The town of Belen is situated 40 miles south of Albuquerque, in almost the exact geographical center of Valencia County, on the west bank of the Rio Grande. It has an altitude of 4,200 feet. Its population is 1,200. The stretch of country, in the center of which the town is located, can not be excelled for fertility and productiveness.

Belen stands above all other communities in New Mexico in that it has the largest merchandise establishment; the largest flour mill; is the largest railroad shipping point in proportion to population; raises the best grapes, and holds the first prize at the World's Columbian Exposition at Chicago.

Belen has several well-established general merchandise stores, two general wholesale establishments, and one roller mill. The First National Bank of Belen attends to the banking business of the place. The Catholics as well as the Protestants have each a comfortable and commodious church edifice. In front of the Catholic Church stands one of the most artistic architectural monuments in the Southwest—the Felipe Chaves mausoleum—built at a cost of $15,000. The school facilities of Belen are good, there being three schools—the Felipe Chavez Girls' Academy, the Becker School, and the public school. The Territory recently established an orphan's school here. The railroad facilities consist of the Atchison, Topeka and Santa Fe Railway, connecting the city with the extreme northern and

southern portions of the Territory and the country that lies between. The Eastern Railway of New Mexico, under construction, will give direct connection with the Santa Fe Central Railway, the El Paso and Northeastern, and the Pecos Valley lines.

LOS LUNAS.

The county seat is Los Lunas, situated on the west bank of the Rio Grande, 24 miles south of Albuquerque. The population is 1,000. It has a two-story court-house and a large Catholic church. There is a substantial bridge across the Rio Grande opposite the town. There are two large general stores here. It is a prosperous shipping point, especially for wool and alfalfa. A rich agricultural and stock region surrounds it. The town is connected by telephone with Albuquerque. South of Los Lunas is Tome, at one time the seat of government for New Mexico.

SAN RAFAEL.

The populous settlement of San Rafael, having 1,500 inhabitants, is the center of a rich agricultural and stock section, and is located 3 miles from the Santa Fe Pacific Railway, in the San Jose River valley. Forty years ago it was known as old Fort Wingate. The lands around it are irrigated by the waters of El Gallo Spring, the largest in New Mexico, filling a ditch of clear water 6 feet wide at the bottom and 40 feet wide at the top. Along this stream there are rich agricultural lands covering 4,000 acres, which produce all kinds of grain, vegetables, and fruit.

PERALTA.

This town was the scene of a battle in the civil war. It is situated in the valley of the Rio Grande, opposite Los Lunas, and has 800 inhabitants. It is connected by long-distance telephone with Albuquerque, 20 miles north. The town has a fine flour mill and five general merchandise stores. There is one Roman Catholic Church and one Methodist Church building.

STATISTICS.

The immense resources and possibilities and what has been accomplished in New Mexico by the comparative few with the employment of limited capital is demonstrated by the following figures, which have been carefully compiled from official statistics:

AREA.

Total area, 122,469 square miles. By counties: Socorro, 15,065; Chaves, 9,599; Grant, 7,403; Otero, 6,870; Eddy, 6,506; Union, 6,037; Rio Arriba, 5,932; Valencia, 5,712; San Juan, 5,598; McKinley, 5,377; San Miguel, 4,893; Lincoln, 4,659; Guadalupe, 3,952; Colfax, 3,897; Sandoval, 3,833; Dona Ana, 3,818; Torrance, 3,330; Roosevelt, 3,110; Sierra, 3,081; Luna, 2,946; Quay, 2,805; Mora, 2,542; Taos, 2,283; Santa Fe, 1,980; Bernalillo, 1,240.

Forest reserves: Gila, 4,000,000 acres; Jemez, 1,250,000; Lincoln, 500,000; Pecos, 431,040.

Indian reservations: Navajo, 2,345,492; Mescalero Apache, 449,280; Jicarilla Apache, 404,788; Zuni Pueblo, 238,036; Southern Ute, 107,314; Santa Clara, 33,000; San Felipe, 13,817; Nambe, 7,680; Jicarilla Indian School, 40.

Pueblo Indian grants: Zuni, 215,040 acres; Laguna, 125,225; Isleta, 110,080; Acoma, 95,792; Santo Domingo, 74,743; San Felipe, 34,767; Cochiti, 24,276; Sandia, 24,187; Pecos, 18,763; San Juan, 17,545; Zia, 17,515; Jemez, 17,510; Tesuque, 17,471; Picuris, 17,461; Santa Clara, 17,369; Taos, 17,361; Santa Ana, 17,361; San Ildefonso, 17,293; Nambe, 13,586; Pojoaque, 13,520.

Military reservations: Fort Wingate, 83,200; Fort Union, 66,880; Fort Stanton, 28,221; Fort Bayard, 8,840; Fort Sumner Post Cemetery, 320 acres.

POPULATION.

On July 1, 1905, estimated, 300,000. Census of 1900, 195,310; 1890, 153,593; 1880, 119,565; 1870, 91,874; 1860, including Arizona, 87,034; 1850, including Arizona and southern Colorado, 61,547. Of the present population, 158,000 came from other States and Territories or are descendants of such; 125,000 are of Spanish or Mexican descent; 1,600 negroes; 100 Chinese; 300 Japanese, and 13,000 are Indians. Of the 100,000 wage-earners, 40,000 are engaged in agricultural pursuits; 20,000 in domestic service; 10,000 in manufacturing; 8,000 in mining; 7,000 in railroading; 10,000 in trade, and 5,000 in professional service and in political positions. Males of voting age number 80,000; females of the same age, 75,000; children of school age, 70,000; children under the age of 5, 55,000; Indians, 15,000; residents not citizens, 5,000. Population by counties: San Miguel, 28,000; Bernalillo, 27,000; Colfax, 19,000; Rio Arriba, 17,500; Santa Fe, 16,500; Socorro, 15,500; Valencia, 15,000; Donna Ana, 14,500; Grant, 14,000; Mora, 13,500; Taos, 13,000; Sandoval, 12,500; Chaves, 12,000; Guadalupe, 9,500; Otero, 9,000; Lincoln, 8,500; Eddy, 8,000; McKinley, 7,500; Union, 7,000; San Juan, 6,500; Torrance, 6,000; Roosevelt, 5,500; Sierra, 5,000; Quay, 4,500; Luna, 4,000.

FARMS AND FARM PRODUCTS.

Number of farms, 1890, 4,458; in 1900, 11,834; in 1905, 15,000. Acres in farms in 1890, 787,882; in 1900, 5,130,878; in 1905, 6,200,000. Value of farms in 1890, $33,543,141; in 1900, $53,737,824; in 1905, $62,500,000. Value of farm lands, 1890, $8,140,800; 1900, $20,888,824; 1905, $30,000,000. Value of farm implements, 1890, $291,140; 1900, $1,151,610; 1905, $1,500,000. Value of live stock, 1890, $25,111,201; 1900, $31,727,400; 1905, $44,000,000. Value of farm products, 1890, $2,000,000; 1900, $10,000,000; 1905, $18,000,000. Acres in alfalfa, 1890, 12,139; 1900, 55,467; 1905, 63,000. Acres under cultivation, 1890, 91,745; 1900, 203,893; 1905, 340,000. Butter, 1890, 105,000 pounds; 1900, 381,000 pounds; 1905, 500,000 pounds. Eggs, 1890, 280,000 dozen; 1900, 840,000 dozen. Hay, 1900, $1,427,317; 1905, $2,000,000. Cereals, 1900, $979,903; 1905, $1,500,000. Vegetables, 1900, $278,413; 1905, $350,000. Fruit, 1900, $197,331; 1905, $500,000. Other products, 1900, $374,537; 1905, $500,000. Acres under irrigation, 350,000.

CLIMATE.

Mean temperature in 1904, 53.7°; the mean for July, the warmest month, 72.4°; for January, the coldest, 31.9°. The highest temperature recorded was at Alamogordo, 105°, and San Marcial, 105°; the lowest, 15° below zero, at Luna. The highest mean annual temperature was at Carlsbad, 64.9°; the lowest at Luna, 47.9°. The greatest range in temperature was at Luna, 109°; the lowest range at Cloudcroft, 81°. The annual precipitation was 14.41 inches. The smallest monthly precipitation was in April, 0.15 of an inch, and the greatest in September, 4.34 inches. The lowest annual precipitation recorded was at Fruitland, 3.33 inches; the greatest at Arabela, 26.24 inches. The snowfall averaged 12.3 inches. The relative humidity was 50 per cent at Las Vegas, 46 per cent at Santa Fe, and 33 per cent at Mesilla Park. The number of cloudy days was 43; partly cloudy days, 96; clear days, 227. At Santa Fe there was 80 per cent of possible sunshine; the highest, 93 per cent in January; the lowest, 69 per cent in August. The wind averaged 7.4 miles per hour at Santa Fe, with a maximum velocity of 46 miles per hour. At Mesilla Park it averaged 7.8 miles per hour, with a maximum velocity of 48 miles per hour.

PUBLIC LANDS.

On July 1, 1905, there were in New Mexico, 52,095,312 acres of public land, subject to Federal land entry. Of this area 14,495,363 acres were still unsurveyed. Forest reserves covered 6,000,000 acres; Indian reservations, 3,599,447 acres; military reservations, 187,461 acres; Pueblo Indian grants, 906,865 acres and Territorial lands, 1,300,000 acres. Land entries in five fiscal years ending June 30, 1905, Santa Fe district, 774,670 acres, of which 372,369 acres were homestead entries; 320,235 acres Territorial selections; 22,736 acres desert-land entries; 20,963 lieu selections; 16,285 coal declaratory entries; 6,710 acres lands sold; 6,583 acres mineral entries; 4,528 acres small holding claims; 3,146 acres coal lands sold; 1,160 acres Indian allotments. Roswell district, 1,365,619 acres, of which 623,197 were homestead entries; 290,038 desert-land entries; 296,530 acres lieu selections, and 155,854 acres Territorial selections. Clayton district, 848,608 acres, of which 555,818 acres are homesteads; 160,437 acres lieu selections; 100,407 acres Territorial land selections; 31,946 acres desert-land entries. Lascruces district, 294,049 acres, of which 154,083 acres were homesteads; 13,834 desert-land entries; 12,062 acres lieu selections, and 114,070 acres Territorial selections. The total number of entries, in round figures, during those five years covered 3,300,000 acres, of which 1,705,467 acres were homestead entries; 690,566 acres Territorial land selections; 558,554 acres desert-land entries, and 489,992 acres lieu selections. The following is the area of lands still subject to entry July 1, 1905, according to counties: Socorro, 7,974,753 acres; Chaves, 4,993,088; Grant, 3,920,494; Otero, 3,897,037; Eddy, 3,767,647; Union, 3,135,815; Rio Arriba, 2,339,021; Torrance, 2,148,462; Lincoln, 1,955,260; Donna Ana, 1,933,637; Sierra, 1,695,628; Luna, 1,666,524; Guadalupe, 1,572,578; Roosevelt, 1,532,980; San Juan, 1,481,042; Quay, 1,467,532; San Miguel, 1,459,724; Valencia, 1,029,489; McKinley, 885,847; Mora, 715,932; Sandoval, 694,190; Taos, 619,791; Colfax, 515,256; Santa Fe, 470,390, and Bernalillo, 225,195.

MINERAL PRODUCTION.

During the past one hundred years New Mexico has produced $27,000,000 worth of gold and $30,000,000 worth of silver. The annual value of the mineral production of the Territory at present averages $3,000,000. The producing mines of the Territory number as follows: Coal, 30; gold and silver, 100; copper, 20; precious stones, 10; quarries, 10; zinc, 4; iron, 2; all other, 10. The number of officially surveyed mines is 995. During the past ten years New Mexico produced $4,855,000 worth of gold, $5,552,120 worth of silver, 55,646,000 pounds of copper, and 60,640,000 pounds of lead. During 1904 the gold production was valued at $381,930, the silver production at $124,103, copper at $646,382, lead at $134,283, iron at 140,000 tons, and zinc at $899,589.

COAL.

Area of prospected coal lands, 1,500,000 acres; amount of coal in sight, 9,000,000,000 tons, valued at $11,000,000,000. Coal produced during the past ten years, 12,000,000 tons, valued at $15,000,000. Coke produced during the past five years, 170,000 tons, valued at $500,000. Production of coal for past fisccal year. 1,672,406 tons; coke, 76,737 tons.

ELECTION FIGURES.

In the November election of 1904 there were cast 43,011 votes, of which 22,305 were for the Republican candidate, 17,125 for the Democratic candidate, 3,419 for the Independent Republican candidate, and 162 for the Socialist candidate. The legislature, elected at the same time, consisted of 11 Republicans and 1 Democrat in the council, and 21 Republicans and 3 Democrats in the house. In the November election of 1902 the total vote cast was 38,798, of which the Republicans received 24,222 and the Democrats 14,576, 20 counties giving Republican and 4 Democratic majorities. To the legislative council 12 Republicans and no Democrat were returned, and to the house 22 Republicans and 2 Democrats. In the November election of 1900 there were cast 39,414 votes, of which the Republicans received 21,557 and the Democrats 17,857. To the legislature were elected 9 Republicans and 3 Democrats in the council and 20 Republicans and 4 Democrats in the house.

RAILROADS.

On September 1, 1905, there were 2,556.44 miles of railroad in the Territory, valued commercially at $90,000,000. On June 30, 1904, there were 2,483.53 miles; June 30, 1903, there were 2,446 miles; June 30, 1902, there were 2,263 miles; June 30, 1901, 1,981 miles, and June 30, 1900, 1,679 miles, a total mileage built in five years of 878 miles, and in a quarter of a century of 2,500 miles. There are under construction at present 370 miles of railroad, while surveys were run during the year for 800 miles more, with promise of construction in the near future. The lines under construction at present are the New Mexico Eastern, from Belen to Texico, 250 miles; the Albuquerque Eastern, from Moriarty to Albuquerque, 42 miles; the Hagan Coal Branch,

from Frost to Hagan, 18 miles; the St. Louis, Rocky Mountain and Pacific, from Raton to Elizabethtown, 60 miles, while the Denver and Rio Grande Railroad has just completed a line from Durango, Colo., to Farmington, of which 30 miles are in New Mexico. Lines surveyed for immediate construction are the Arizona and Colorado, from Durango, Colo., to Cochise, Ariz., of which 415 miles of main line and 155 miles of branch lines will be in New Mexico; the St. Louis, Rocky Mountain and Pacific, from Des Moines to Raton, about 70 miles, and the El Paso and Southwestern, from Dawson to Santa Rosa, 160 miles. The present mileage of the Territory is divided among the different systems, as follows: Atchison, Topeka and Santa Fe System, 1,115.88 miles, of which the main line has 539.24 miles; Pecos Valley and Northeastern, 220.7 miles; coast lines, 166.6 miles; branch lines, 121 miles; American Lumber Company, 29 miles; New Mexico Eastern, 20.7 miles, and the Las Vegas Hot Springs line (leased), 8.64 miles. The El Paso and Southwestern, 636.29 miles, of which 163.4 miles are the main line, 31.49 miles the Deming branch, 124.6 miles the El Paso and Northeastern, 128.2 miles the El Paso and Rock Island, 131.9 miles the Dawson, 32.5 miles the Sacramento Mountain Railway, 21 miles the Capitan branch, and 3.2 miles the Jarilla branch. The Denver and Rio Grande, 252.81 miles, of which 38.98 miles constitute the Rio Grande and Santa Fe, 33.16 miles the Rio Grande and Southwestern, and 30 miles the Farmington branch. The Southern Pacific, 167.45 miles; Santa Fe Central, 115.7; Chicago, Rock Island and Pacific, 111.5 miles; Colorado and Southern, 88.31 miles, and the Arizona and New Mexico, 68.5 miles, of which 38.5 miles are the Lordsburg and Hachita Railway.

STOCK.

New Mexico has 1,050,000 head of cattle, 5,875,000 head of sheep, 150,000 head of goats, 100,000 head of horses. The wool crop averages 20,000,000 pounds annually. There are shipped out of the Territory annually 200,000 head of cattle, 25,000 head of horses, 40,000 hides, and 2,000,000 head of sheep.

INTERNAL REVENUE.

During the past five years New Mexico has paid $197,718.50 internal revenue. During the year ending June 30, 1905, there was paid $34,170.55; the fiscal year previous, $33,172.84; the year previous, $33,918; for the year ending June 30, 1902, $37,847.80; for the year ending June 30, 1901, $58,609.31.

PUBLIC INSTITUTIONS.

The Territory maintains 15 public buildings and institutions, as follows: At Santa Fe—Capitol, penitentiary, deaf and dumb school, and Old Palace. At Las Vegas—Insane asylum, normal university, Albuquerque — University. Raton — Miners' Hospital. Mesilla Park—Agricultural college and experiment station. Belen—Orphan's Home. Alamogordo—Blind asylum. Silver City—Normal school. Socorro—School of Mines. Roswell—Military school. El Rito—Reform school. In addition it contributes to the support of 12 hospitals, homes, and semipublic societies.

CHURCHES.

The Roman Catholic population is 133,000. It has 44 churches with resident priests; 43 priests on duty (secular); 20 priests on duty identified with religious orders; 340 missions, stations, and chapels; 21 Christian Brothers; 8 Jesuit Brothers and 6 Franciscan Brothers; 124 nuns; 3 colleges for boys; 6 academies for young ladies; 8 parochial schools; 2 boarding schools for Indians, with 250 inmates; 1 orphan asylum, with 75 wards; 3 hospitals, with 1,000 inmates during the past fiscal year.

The missionary district of New Mexico of the Protestant Episcopal Church has 17 parishes and missions, 1 bishop, 11 clergymen, ministering to 1,668 individuals, of whom 1,376 are baptized, and who contributed during the past fiscal year in excess of $10,000.

Christian Church, 10 congregations, 725 members, 4 church buildings, 7 ministers, 5 Sunday schools, 400 Sunday school pupils; value of church property, $9,000.

Congregational Church, 5 congregations, 281 members; 6 mission schools, 500 pupils, 14 teachers.

Mormons, 4 settlements—Burnham, Hammond, Luna, Ramah—with subsettlements at Bluewater, Jewett, and Plainfield. Officers and members, 637; children under 8 years, 299; total, 926. Enrollment of Sunday schools, 594.

Hebrews, 2 synagogues; membership, 90 families; number of Jews in Territory, 80.

Baptist congregations, 52; 1 college and 4 mission schools; members, 2,000.

Lutheran congregations, 3; communicants, 180; Sunday school pupils, 100.

Methodist Episcopal, 17 English churches, 19 church buildings, 25 congregations, 1,400 members; 45 Spanish churches, membership 2,400, buildings 34, day mission schools 15, colleges 1. Church buildings of English church 19, value $68,000; regular pastors 15; parsonages 12, value $15,000; Sunday schools 21, pupils 1,800, pupils in mission schools 340, teachers 22; Spanish congregations 75, number of charges 40, pastors 35, church buildings and chapels 27, parsonages 23, Sunday schools 53, pupils 1,164, value of buildings $71,150; value of mission school property $50,000.

Presbyterians, 47 churches, ministers and helpers 44, church members 2,500, Sunday school pupils 2,200, mission schools 24, teachers 47, pupils 2,400.

Other denominations are represented in the Territory, but no statistics regarding their activity are available.

NOTARIES PUBLIC.

During the year ending June 30, 1905, notaries public were appointed to the number of 337; during the year ending June 30, 1904, 223; the year previous, 288; in the fiscal year 1901–2, 205; the year previous, 202.

BANKS.

On November 1, 1905, there were 26 national banks and 13 State banks. The State banks: Capital stock, $410,550; loans and discounts, $1,629,544.31; deposits, $2,260,969.40; aggregate resources,

$2,737,900.71. On June 30, 1901, there were 11 national banks and 9 State banks; on June 30, 1902, 15 national banks and 11 State banks; on June 30, 1903, 19 national banks and 10 State banks; on June 30, 1904, 21 national banks and 10 State banks.

EDUCATIONAL.

School population, 1905, 68,193; 1904, 68,400; 1902, 62,864; 1901, 53,008. The school population includes all children between the ages of 5 and 21, and is taken annually. Enrollment in the public schools, 1905, 36,111; 1904, 39,704; 1903, 37,646; 1902, 35,227; 1901, 31,510; 1900, 21,761. Average daily attendance, 1905, 17,301; 1904, 29,582; 1903, 24,856; 1902, 22,573; 1901, 19,451. Public schools, 1905, 796; 1904, 729; 1903, 665; 1902, 603; 1901, 599. Teachers, 1905, 859; 1904, 852; 1903, 757; 1902, 712; 1901, 671. Expenditures, 1905, $247,506.34; 1904, $353,012.22; 1903, $454,342.38; 1902, $424,365.42. Receipts from all sources, 1905, $500,000; 1904, $459,308.09; 1903, $454,342.38; 1902, $424,365.42.

Average school term, four months; average salary paid teachers, $56 per month; total value of all school property in the Territory, $2,000,000; enrollments in all of the schools, 45,000; annual expenditures for all of the schools, $750,000; total expended for the public schools in the past five years, $2,000,000.

POST-OFFICES.

On July 1, 1905, there were in the Territory 417 post-offices, 147 of them money-order offices and 15 Presidential offices, as follows: Second class—Santa Fe, Albuquerque, Las Vegas, Roswell, Raton, Alamogordo; third class—Carlsbad, Clayton, Deming, Gallup, Las-cruces, Portales, Silver City, Socorro, and Tucumcari.

INCORPORATIONS.

In the past five fiscal years 927 companies filed corporation papers, with a capitalization of $525,141,066, with the Territorial secretary. In the fiscal year ending June 30, 1901, 149 companies incorporated, with a capital stock of $89,735,925; in the fiscal year ending June 30, 1902, 204 companies incorporated, with a capitalization of $119,446,500; in the year ending June 30, 1903, 200 companies incorporated, with a capitalization of $100,529,541; in the year ending June 30, 1904, 184 companies incorporated, with a capital of $104,172,900; in the year ending June 30, 1905, 190 companies incorporated, with a capitalization of $111,256,200.

ASSESSMENT.

In 1898 the assessment was $40,531,230.16; in 1899, $36,453,820.08; in 1900 the Territorial assessment subject to taxation was $36,364,-761.16; in 1901 the Territorial assessment was $36,977,047.94; in 1902 the assessment was $38,633,993.27; in 1903 the assessment was $41,832,566.79, including exemptions amounting to $2,235,615, leaving an assessment subject to taxation of $39,596,951.79; in 1904 the assessment was $41,735,520.53, the exemptions amounting to

$2,438,281; in 1905 the assessment was $42,578,792.68, the exemptions, $2,528,164.75. The real value of property in New Mexico is as follows: Railroads, $86,000,000; farm and buildings, $44,000,000; stock, $42,000,000; mines and equipment, $38,000,000; city and town lots and improvements, $30,000,000; business and manufacturing, $50,000,000; personal property, stocks, and bonds, $40,000,000; a total of $330,000,000.

The assessment, by classes of property, for 1904, was as follows: Real estate, $17,321,795; railroads, $8,511,539; cattle, $5,870,824; sheep and goats, $2,703,644; horses and mules, $1,059,683; personal and other property, $6,268,035.

REVENUES.

During 1904 the total tax collections amounted to $1,678,267.39, including Territorial, county, city, school, and special taxes, or about 4 per cent on the assessed valuation or one-half of 1 per cent on the actual wealth of the Territory. At the end of the year there were balances in the county treasuries amounting to $542,834.35. During the past five years the income of the Territory has been $2,954,929.05, of which $2,082,039.06 came direct from taxation and $872,889.99 from other sources. During the fiscal year ending June 30, 1905, there were collected $494,034.15 Territorial taxes and $147,890.45 from other sources; the year preceding, $460,316 from direct taxation and $307,647.35 from other sources; year ending June 30, 1903, direct taxes, $419,622.06; indirect income, $156,788.80; 1902, direct tax, $332,328.85; indirect, $118,005.17; 1901, direct tax, $375,738; indirect, $142,758.22.

INDEBTEDNESS.

On June 30, 1899, the indebtedness of the Territory was $1,249,800; on June 30, 1902, it was $1,123,300 and the sinking fund $89,246.26; on June 30, 1903, the indebtedness was $1,098,300, and the sinking fund $134,590.03; on June 30, 1904, the indebtedness was $1,062,000 and the sinking fund $191,965.35; on June 30, 1905, the indebtedness was $853,000, sinking fund, $60,164.94, leaving a net indebtedness of $792,833.06, a reduction in six years of $456,964.94.

The value of the grounds and buildings of the Territorial institutions is $2,250,000 without the grants of land made to them by Congress. The value of all school property $2,000,000, not counting the school sections in each township.

LODGES.

Woodmen of the World: Certificates in force December 31, 1904, 941, for $1,686,600. Losses paid during 1904, $12,850. Assessments collected during 1904, $14,598.

Order of Maccabees: Membership, 37. Death claims in 1904, $3,500.

Knights of Columbus: Two lodges; membership, 200.

Knights of Pythias: Lodges, 26; membership, 1,473. Paid sick benefits during 1904, $2,207; cash on hand July 1, 1905, $5,122; value of paraphernalia and lodge supplies, $7,320.35; real estate, $5,223.76.

Odd Fellows: Lodges, 21; membership, 1,179; paid out for relief, 1904, $3,230.23; cash on hand, $4,717.80; real estate and personal property, $15,755; invested funds, $6,705.14.

Grand Army of the Republic: Posts, 8; membership, 180. Woman's Relief Corps: Lodges, 2. Ladies of the Grand Army of the Republic, 1 lodge.

Fraternal Union of America: Lodges, 1; membership, 49; insurance certificates, $72,000.

Masons: Blue lodges, 20; membership, 1,300.

The Red Men, Elks, and other orders are strongly represented in the Territory, but failed to furnish statistics for inclusion in this summary.

PART VI.—TERRITORIAL OFFICIALS.

TERRITORIAL TREASURER'S REPORT.

In my report covering the year ending June 1, 1904, the statement showing the Territorial bonded debt to be $1,163,900 included an issue of casual deficit bonds to the amount of $101,800, for the redemption of which bonds funds were then on deposit with the National Bank of Commerce in New York, but the bonds at that time had not been paid and returned to this office for proper cancellation. Since the date of that report these bonds have been paid and regularly canceled.

In the past year the bonded debt has been decreased by the following payments: Casual deficit bonds, $101,800; capitol building bonds, $196,000; provisional indebtedness bonds, $13,000; certificate of indebtedness, $100; total, $310,900, leaving the outstanding bonded indebtedness on June 1, 1905, $853,000, and on this same date there were balances in bond sinking funds available to redeem outstanding bonds aggregating the sum of $60,164.94, making the net Territorial debt $792,835.06.

The revenues have been ample to meet all current expenses provided for under the appropriations, and the general financial condition and credit of the Territory is most gratifying.

Payments by counties of Territorial tax for the year ended June 1, 1905.

County.	Fifty-fifth fiscal year.		Fifty-sixth fiscal year.		Total payments.
	Third quarter.	Fourth quarter.	First quarter.	Second quarter.	
Bernalillo	$17,448.69	$1,668.97	$18,749.22	$1,224.88	$39,091.76
Chaves	18,423.75	1,530.32	21,376.49	2,297.18	43,627.74
Colfax	15,752.38	1,783.81	18,268.66	542.59	36,347.44
Donna Ana	10,457.97	833.21	10,960.35	1,154.76	23,406.29
Eddy	11,642.18	1,110.47	12,151.83	1,404.29	26,308.77
Grant	15,069.12	550.26	21,969.05	1,589.07	39,177.50
Guadalupe	.....	.....	255.39	449.49	704.88
Leonard Wood	4,755.16	1,662.62	3,087.94	.....	9,505.72
Lincoln	7,137.89	1,227.99	7,352.68	451.48	16,170.04
Luna	9,475.79	.....	9,937.45	249.08	19,662.32
Mora	4,992.64	184.39	5,099.01	321.73	10,597.77
McKinley	6,350.26	64.48	6,750.70	371.02	13,536.46
Otero	7,782.40	1,812.70	8.858.76	943.61	19,397.47
Quay	3,222.44	354.98	3,164.81	954.80	7,697.03
Rio Arriba	3,456.94	718.09	4,565.06	103.13	8,843.22
Roosevelt	2,530.15	675.71	3,952.60	808.62	7,967.08
San Juan	2,601.53	185.53	4,181.59	1,449.95	8,418.60
Santa Fe	8,084.99	921.05	7,690.24	520.06	17,216.34
San Miguel	18,186.26	1,095.16	21,188.22	3,319.71	43,789.35
Sierra	7,674.64	1,872.61	7,690.43	788.67	18,026.35
Socorro	10,605.04	1,278.81	10,697.45	1,388.88	23,970.18
Sandoval	3,007.01	592.52	2,738.49	393.64	6,731.66
Taos	2,885.09	240.24	3,421.73	269.79	6,816.85
Union	11,834.75	1,934.71	15,338.49	1,314.09	30,422.04
Valencia	6,345.77	1,567.44	7,081.44	1,606.64	16,601.29
Total	209,722.84	23,866.07	236,528.08	23,917.16	494,034.15

Receipts from sources other than taxation for the year ending June 1, 1905.

Source from which received.	Fifty-fifth fiscal year.		Fifty-sixth fiscal year.		Total receipts.
	Third quarter.	Fourth quarter.	First quarter.	Second quarter.	
J. H. Vaughn, Territorial treasurer, interest on deposits	$2,014.37	$1,841.43	$1,755.94	$1,539.25	$7,150.99
Sale of compiled laws	59.50	34.00	76.50	93.50	263.50
A. A. Keen, commissioner of public lands.	17,707.34	9,555.47	28,707.15	5,477.56	61,447.52
H. O. Bursum, superintendent of penitentiary convicts' earnings.	4,545.69	2,723.26	2,831.64	2,550.62	12,651.21
Clerks of district courts	3,426.00	2,114.75	2,425.05	2,363.97	10,329.77
W. C. Barnes, secretary cattle sanitary board	4,900.00	4,000.00	.....	4,163.91	13,063.91
United States annual appropriation for agricultural college[a]	25,000.00	.....	.....	.....	25,000.00
J. W. Raynolds, Territorial secretary, fees from office	1,760.00	1,040.00	3,160.00	3,490.00	9,450.00
A. A. Keen, capitol custodian board	.....	.....	16.60	.....	16.60
A. A. Keen, special purposes	.....	.....	4.00	.....	4.00
A. A. Keen, proceeds 5 per cent United States land sales, permanent	.....	.....	2,705.65	.....	2,705.65
J. H. Vaughn, Territorial treasurer Louisiana Purchase Exposition fund	.....	.....	3,500.00	.....	3,500.00
Pullman Car Co	.....	.....	.....	380.30	380.30
Insurance fund	.....	.....	.....	1,927.00	1,927.00
Total	59,412.90	21,308.91	45,182.53	21,986.11	147,890.45

RECAPITULATION.

From counties tax levy	$209,722.84	$23,866.07	$236,528.08	$23,917.16	$494,034.15
Source other than taxation	59,412.90	21,308.91	45,182.53	21,986.11	147,890.45
Total	269,135.74	45,174.98	281,710.61	45,903.27	641,924.60

[a] Transmitted by Treasurer of the United States through Territorial treasurer to college, and, not being Territorial funds, not reported to auditor.

Balances in hands of treasurer June 1, 1904, receipts, transfers, and disbursements during the last half of fiscal year ending December 1, 1904, and first half of fiscal year 1905, and balances in treasurer's hands June 1, 1905.

Fund or account.	Balances June 1, 1904.	Receipts during year.	Transfers to funds.	Transfers from funds.	Payments during year.	Balances June 1, 1905.
Interest fund	$23,079.17	.....	$64,924.65	.....	$59,277.11	$28,726.71
School fund	725.00	.....	.....	.....	725.00	.....
Interest on deposits	1,698.32	$7,150.99	.....	.....	7,262.78	1,586.53
Interest and sinking fund, certificate of indebtedness.	93.51	14,809.64	.....	$7,652.00	6,833.70	417.45
University of New Mexico	1,290.53	.....	18,236.43	.....	18,760.23	766.73
Deficiency	75.16	.....	122.83	.....	171.28	26.71
Income	200.00	2,589.43	.....	.....	1,166.60	1,622.83
Agricultural college	752.55	.....	11,154.42	.....	11,449.92	457.05
Income	215.04	1,745.42	.....	.....	1,826.93	133.53
Permanent	.....	7,755.00	.....	.....	7,755.00	.....
Reform school fund	543.98	.....	2,764.07	.....	1,345.20	1,962.85
Income fund	631.58	632.15	.....	.....	1,254.13	9.60
Permanent fund	12,855.07	.....	1,390.71	.....	14,245.78	.....
Blind asylum fund	940.58	.....	2,764.07	.....	3,595.73	108.92
Income fund	277.84	949.73	.....	.....	1,082.17	145.40
Permanent fund	2,133.38	2,616.32	390.72	.....	3,789.70	1,350.72
New Mexico School of Mines fund	3,064.37	.....	12,600.32	.....	15,139.30	525.39
Income fund	238.34	545.85	.....	.....	748.19	36.00
Permanent fund	.....	.....	.....	.....	.....	.....
Deaf and dumb asylum	83.92	.....	2,764.07	.....	2,274.23	573.76
Income fund	54.75	490.00	.....	.....	470.75	74.00
Permanent fund	.....	200.00	.....	.....	200.00	.....
Miners' hospital fund	1,543.98	.....	2,764.07	.....	4,199.13	108.92
Income fund	793.67	738.78	.....	.....	1,461.65	70.80
Permanent fund	1,880.00	2,400.00	.....	.....	4,280.00	.....
New Mexico Insane Asylum	1,467.34	.....	42,447.35	.....	42,174.07	1,740.62
Income fund	.....	550.50	.....	.....	550.50	.....
Permanent fund	443.87	.....	.....	.....	443.87	.....
Penitentiary:						
Income fund	132.04	849.53	.....	.....	765.05	216.52
Current expense fund	1,808.99	.....	12,074.90	.....	13,179.84	704.05
Maintenance fund	1,431.60	.....	27,483.94	.....	27,341.67	1,573.87

Balances in hands of treasurer June 1, 1904, etc.—Continued.

Fund or account.	Balances June 1, 1904.	Receipts during year.	Transfers to funds.	Transfers from funds.	Payments during year.	Balances June 1, 1905.
Penitentiary—Continued.						
Convicts' earnings fund..	$3,664.35	$12,651.21	.....	.....	$15,664.25	$651.31
Permanent fund.....	12.33	3,360.00	.....	$1,285.71	1,188.25	898.37
New Mexico Military Institute	145.34	.....	$12,610.18	.....	12,227.99	527.53
Income fund.....	293.55	675.94	.....	.....	898.41	71.08
Permanent fund.....	4,000.90	2,880.00	.....	.....	6,880.90	.....
Water reservoir permanent fund	60.00	.....	.....	.....	.....	60.00
Compilation fund.....	374.00	263.50	.....	500.00	.....	137.50
Normal school, Silver City...	1,197.10	.....	13,977.41	.....	14,581.29	593.22
Income	659.75	489.46	.....	.....	659.75	489.46
Permanent	1,140.00	.....	390.72	.....	1,530.72	.....
Normal school, Las Vegas ...	334.81	.....	14,065.84	.....	13,802.63	598.02
Income	64.88	489.46	.....	.....	475.83	78.51
Permanent	140.00	.....	390.72	.....	530.72	.....
Special purposes.....	3,188.96	123.80	.....	.....	1,540.00	1,772.76
Legal expense fund.....	192.60	.....	.....	.....	192.60	.....
Special tax fund, fiftieth fiscal year.....	797	.....	.....	.....	.....	797
Common school income.....	7,197.17	18,084.49	.....	150.00	17,902.65	7,229.01
Proceeds 5 per cent United States land sales, permanent	11,875.92	2,705.65	.....	.....	.....	14,581.57
Charitable institutions	5,402.63	23,576.84	9.51	.....	24,491.38	4,497.60
Deficit fund.....	154.60	.....	.....	.....	154.60	.....
Sheep sanitary fund	1,891.35	9,175.91	.....	.....	10,512.58	554.68
Cattle indemnity fund.....	1,144.74	24,035.10	.....	.....	22,628.16	2,551.68
Compensation of assessors ...	1,921.59	20,605.85	.....	.....	19,302.46	3,224.98
Salary fund.....	16,017.77	10,329.77	55,233.80	.....	62,302.57	19,278.77
Supreme court fund	600.76	.....	365.89	.....	367.76	598.89
Miscellaneous fund.....	8,822.60	.....	16,233.62	.....	20,143.94	4,912.28
Militia fund.....	714.44	.....	1,145.20	.....	1,841.39	18.25
Capitol:						
Contingent expense fund	996.30	16.60	6,871.06	.....	7,865.18	18.78
Contingent bond sinking fund	13.37	.....	.....	.....	.....	13.37
Building bonds, sinking fund	153,606.52	33,105.73	8.94	.....	185,000.00	1,721.19
Casual deficit bonds	101,800.00	.....	.....	.....	101,800.00	.....
Provisional indebtedness sinking fund.....	38,349.83	14,631.67	5.89	.....	13,000.00	39,987.39
Geological survey.....	417.44	120.33	.....	495.46	.....	42.31
Louisiana Purchase Exposition fund:						
Fifty-fourth fiscal year...	1,398.29	191.79	.....	1,500.00	.....	90.08
Fifty-fifth fiscal year.....	1,069.02	20,753.26	7.04	.....	21,300.00	529.32
Scenic route	304.55	.....	4,500.00	.....	4,136.75	667.80
United States land commission	6,859.34	.....	500.00	.....	4,712.62	2,646.72
Maintenance board of public lands.....	3,769.75	.....	150.00	.....	3,173.74	746.01
The Palace income fund.....	23.19	1,270.00	.....	.....	1,275.39	17.80
Southwestern and International Express Co	63.29	.....	.....	.....	.....	63.29
Territorial purposes:						
Fifty-fourth fiscal year...	71.29	2,875.29	.....	2,649.23	297.35	.....
Fifty-fifth fiscal year.....	204.38	88,775.13	1,937.19	89,147.76	1,768.94	.....
Fifty-sixth fiscal year....	.....	99,028.19	5,227.76	91,967.26	12,288.69	.....
Territorial institutions:						
Fifty-fourth fiscal year...	41.65	1,678.02	.....	1,719.67	.....	.....
Fifty-fifth fiscal year.....	173.68	72,825.39	.....	72,999.07	.....	.....
Fifty-sixth fiscal year....	.....	70,726.37	58.38	64,635.24	6,149.51	.....
Improvement Rio Grande income	77.18	2,477.18	.....	500.00	1,784.60	269.76
Orphan Children Home, Belen.....	140.81	.....	3,578.38	.....	3,598.70	120.49
Water reservoir, income for irrigation purposes.....	439.29	2,672.11	.....	.....	220.30	2,891.10
Public buildings at capital, income.....	.....	1,226.17	.....	.....	.....	1,226.17
United States annual appropriation for agricultural college	.....	25,000.00	.....	.....	25,000.00	.....
Casual deficit bonds sinking fund	.....	2,852.55	2.28	2,500.00	.....	354.83
Current expense bonds sinking fund	.....	20,161.20	16.35	.....	.....	20,177.55
Improvement Rio Grande, permanent.....	.....	5,760.00	.....	1,277.16	2,500.00	1,982.84
Insurance funds	.....	1,927.00	.....	.....	851.10	1,075.90
Pullman car tax	.....	380.30	.....	190.15	190.15	.....
Total.....	439,493.86	641,924.60	339,168.71	339,168.71	900,503.36	180,915.10

Balances in hands of treasurer June 1, 1904, etc.—Continued.

RECAPITULATION.

Balance June 1, 1904	$439,493.86
Receipts during year	641,924.60
Total to be accounted for	1,081,418.46
Payments during year	900,503.36
Balance June 1, 1905	180,915.10

Banks in which Territorial funds are deposited.

Name of bank.	Amount applied for.	Amount of bond.	Interest paid on deposit for year.	Balances June 1, 1905.
National Bank of Commerce, New York, bond, special	.....	.....	.....	$11,002.00
First National Bank of Santa Fe	.....	.....	.....	7,766.83
Bank of Commerce of Albuquerque	$28,000.00	$56,000.00	$797.75	15,710.20
First National Bank of Las Vegas	30,000.00	60,000.00	856.70	16,512.90
First National Bank of Albuquerque	30,000.00	60,000.00	848.78	16,516.61
San Miguel National Bank of Las Vegas	30,000.00	60,000.00	845.25	16,512.25
First National Bank of Raton	30,000.00	60,000.00	879.68	16,512.95
First National Bank of Roswell	15,000.00	30,000.00	426.29	8,435.82
National Bank of Commerce of New York	.....	.....	.....	13,111.12
Citizens' National Bank of Roswell	20,000.00	40,000.00	567.77	10,999.42
First National Bank of Clayton	20,000.00	40,000.00	563.25	10,998.75
First National Bank of Carlsbad	20,000.00	40,000.00	562.45	10,995.05
Silver City National Bank	20,000.00	40,000.00	570.14	11,001.13
State National Bank of Albuquerque	40,000.00	80,000.00	128.01	10,958.01
Taos County Bank of Taos, N. Mex	.....	.....	.....	3,341.54
New Mexico Savings Bank and Trust Company of Albuquerque	.....	.....	.....	540.52
Citizens' National Bank of Raton	.....	.....	104.92	.....
Total	283,000.00	566,000.00	7,150.99	180,915.10

Statement of the debt of the Territory of New Mexico.

Title of bond.	Law of issue.	Amount outstanding.	Date of bond.	Rate of interest.	When interest is payable.	Place of payment, principal and interest.	Time to run and option.	When due.	Provision for payment.
				P. ct.					
Current expense bonds	Sec. 384, C. L	$50,000.00	May 2, 1887	6	May	First National Bank of New York.[a]	20 years optional, at 5 or 10 years from date.	May 2, 1907	See U. S. Statutes, vol. 25, p. 340.
Do	do	50,000.00	Nov. 1, 1887	6	Nov	do	do	Nov. 1, 1907	Do.
Do	do	50,000.00	May 1, 1888	6	May	do	do	May 1, 1908	Do.
Provisional indebtedness bonds.	Chap. 122, laws of 1889, p. 295.	77,000.00	May 1, 1889	6	Mar. and Sept.	National Bank of Commerce, New York.	30 years optional, at 20 years or after.	May 1, 1919	Annual tax after 10 years from date sufficient to create a fund to pay bonds at maturity.
Do	Sec. 3620, C. L	100,000.00	Sept. 2, 1889	6	do	do	do	Sept. 2, 1919	Do.
Insane asylum bonds	do	25,000.00	Oct. 1, 1891	6	Jan. and July.	do	do	Oct. 1, 1921	Annual tax after 20 years sufficient to pay bonds in full at maturity.
General refunding bonds.	C. B. 23, 35th legislative assembly, chap. 58, laws of 1899.	101,000.00	June 1, 1903	4	Mar. and Sept.	do	30 years optional after 20 years.	June 1, 1933	Do.
Refunding bonds	Sec. 397, C. L	104,000.00	July 1, 1893	6	Jan. and July.	do	do	July 1, 1923	Do.
Penitentiary refunding bonds.	Sec. 3489, C. L	71,000.00	July 1, 1894	6	Mar. and Sept.	do	30 years optional, at 20 years or after.	July 1, 1924	Same as refunding bonds.
Do	do	10,000.00	Jan. 1, 1895	6	do	do	do	Jan. 1, 1925	Do.
Territorial institutions bonds.	Sec. 1, chap. 44, laws of 1895.	35,000.00	July 1, 1895	5	Jan. and July.	do	30 years optional, at 10 years or after.	July 1, 1925	Annual tax after 10 years sufficient to pay bonds at maturity.
New Mexico Military Institute bonds.	Sec. 3667, C. L	15,000.00	do	5	do	do	do	do	Same as for Territorial institute bonds.
Insane asylum bonds	Sec. 3625, C. L	30,000.00	do	5	do	do	do	Jan. 1, 1925	Do.
Capitol rebuilding bonds.	Sec. 3479, C. L	25,000.00	May 1, 1895	5	May and Nov.	do	30 years optional, at 20 years or after.	May 1, 1925	Do.
Do	do	50,000.00	Nov. 1, 1895	5	do	do	do	Nov. 1, 1925	Do.
Capitol rebuilding bonds, second series.	Sec. 1, chap. 9, laws of 1899.	60,000.00	May 1, 1899	4	do	do	do	May 1, 1929	Annual tax after 10 years from date sufficient to create a fund to pay off bonds at maturity.
Total bonded indebtedness.		853,000.00							

[a] These bonds are on their face payable at the First National Bank of New York, but all coupons are paid by the National Bank of Commerce in New York.

SUMMARY OF TERRITORIAL DEBT.

Territorial bonded debt outstanding June 1, 1904		$1,163,900.00
Paid during year:		
Casual deficit bonds	$101,800.00	
Certificate of indebtedness	100.00	
Capitol building bonds	196,000.00	
Provisional indebtedness bonds	13,000.00	
		310,900.00
Territorial bonded debt outstanding June 1, 1905		853,000.00
Funds and sinking funds in hands of Territorial treasurer for redemption of bonded indebtedness, June 1, 1905:		
Current expense bonds, sinking fund	20,177.55	
Provisional indebtedness bonds, sinking fund	39,987.39	
		60,164.94
Net Territorial debt, June 1, 1905		792,835.06

List of fire insurance companies which have complied with chapter 49, Laws of 1897.

Name of company.	Location.	Amount of deposit.	Securities.
Aachen and Munich Fire Insurance Co.	Aix la Chapelle, Germany.	$10,000	United States bonds.
American Central Insurance Co.	St. Louis, Mo	10,000	Certificate of deposit, First National Bank, Las Vegas, N. Mex.
Ætna Insurance Co	Hartford, Conn	10,000	Capitol rebuilding bonds of Territory of New Mexico.
Atlas Assurance Co	London, England	10,000	$1,000 provisional indebtedness, $3,000 refunding, and $6,000 general refunding bonds of Territory of New Mexico.
British American Assurance Co.	Toronto, Canada	10,000	Capitol rebuilding bonds of Territory of New Mexico.
Commercial Union Assurance Co.	London, England	10,000	United States bonds.
Connecticut Fire Insurance Co.	Hartford, Conn	10,000	General refunding bonds of Territory of New Mexico.
Continental Insurance Co	New York, N. Y	10,000	Provisional indebtedness bonds of Territory of New Mexico.
Fireman Fund Insurance Co.	San Francisco, Cal	10,000	Certificate of deposit, First National Bank, Albuquerque, N. Mex.
Fire Association of Philadelphia.	Philadelphia, Pa	11,000	Real estate mortgage.
German-American Insurance Co.	New York, N. Y	10,000	Refunding bonds of the Territory of New Mexico.
Germania Fire Insurance Co.	do	10,000	$5,000 refunding and $5,000 general refunding bonds of Territory of New Mexico.
Hartford Fire Insurance Co.	Hartford, Conn	10,000	Real estate mortgage.
Insurance Company of North America.	Philadelphia, Pa	10,000	$2,000 provisional indebtedness and $8,000 Grant County refunding bonds.
Liverpool, London and Globe Insurance Co.	Liverpool, England	10,000	$5,000 refunding and $5,000 Bernalillo County refunding bonds.
London and Lancashire Fire Insurance Co.	do	10,000	United States bonds.
National Fire Insurance Co.	Hartford, Conn	10,000	Silver City, N. Mex., gold refunding bonds.
Niagara Fire Insurance Co.	New York, N. Y	10,000	Provisional indebtedness bonds of Territory of New Mexico.
North British and Mercantile Insurance Co.	London and Edinburgh, England.	10,000	Territorial institutions bonds of Territory of New Mexico.
Norwich-Union Fire Insurance Society.	Norwich, England	10,000	$5,000 United States bonds and $5,000 capitol rebuilding bonds of Territory of New Mexico.
Northern Assurance Co	London, England	10,000	Certificate of deposit, First National Bank of Santa Fe, N. Mex.
Orient Insurance Co	Hartford, Conn	10,000	United States bonds.
Palatine Insurance Co. (Limited) of London.	London, England	10,000	Do.
Royal Insurance Co	Liverpool, England	10,000	Refunding bonds, Territory of New Mexico.
St. Paul Fire and Marine Insurance Co.	St. Paul, Minn	10,000	Grant County, N. Mex., refunding bonds.
Scottish Union and National Insurance Co.	Edinburgh, Scotland	10,000	Certificates of deposit—$5,000 San Miguel National Bank and $5,000 First National Bank of Albuquerque.
Springfield Fire and Marine Insurance Co.	Springfield, Mass	10,000	Valencia County, N. Mex., refunding bonds.
Union Assurance Society of London.	London, England	10,000	General refunding bonds of Territory of New Mexico.
Home Fire and Marine Insurance Co.	San Francisco, Cal	10,000	Certificate of deposit, First National Bank of Las Vegas, N. Mex.
		291,000	

Assessed valuation of the Territory for the year 1903 and 1904.

County.	1903.				1904.			
	Assessed valuation.	Arithmetical product.	Cash product.	Per cent collected.	Assessed valuation as fixed by board of equalization.	Arithmetical product.	Cash product.	Per cent collected.
Bernalillo	$2,905,850.00	$45,137.78	$40,861.28	90.5	$3,500,000.00	$36,170.72	$19,431.24	53.9
Chaves	2,825,161.00	43,818.25	40,679.65	92.8	2,900,000.00	29,970.19	19,659.79	65.6
Colfax	2,841,011.00	44,064.08	38,159.49	86.6	3,100,000.00	32,037.10	18,924.71	59.1
Donna Ana	2,077,699.00	32,225.15	23,738.52	73.6	2,100,000.00	21,702.56	11,482.18	52.9
Eddy	1,848,079.00	28,663.70	25,942.51	90.5	1,950,000.00	20,152.37	11,019.93	54.6
Grant	2,836,377.00	43,992.21	36,259.17	82.4	2,850,000.00	29,453.46	20,684.51	70.2
Leonard Wood[a]	870,070.00	13,494.78	8,996.37	66.7	1,000,000.00	10,334.57	3,173.62	30.7
Lincoln	1,268,802.00	19,679.11	15,917.23	80.9	1,300,000.00	13,434.92	6,641.73	49.4
Luna	1,468,691.90	22,779.38	20,224.40	88.7	1,500,000.00	15,501.84	9,404.76	60.6
Mora	1,102,063.00	17,092.99	10,801.41	63.2	1,300,000.00	13,434.93	4,792.23	35.6
McKinley	941,150.00	14,520.32	13,278.65	91.4	1,000,000.00	10,334.57	6,804.98	65.9
Otero	1,455,425.00	22,573.64	19,434.33	86.0	1,600,000.00	16,535.28	8,658.75	52.3
Quay	725,317.44	11,249.67	7,444.47	66.2	750,000.00	7,750.92	3,400.74	43.8
Rio Arriba	900,993.00	13,974.40	10,031.86	71.8	1,000,000.00	10,334.57	4,522.90	43.7
Roosevelt	566,953.00	8,796.08	8,194.57	93.1	600,000.00	6,200.73	3,366.83	54.2
San Juan	594,506.00	9,218.18	7,759.40	84.1	650,000.00	6,717.46	4,045.89	60.2
Santa Fe	2,040,517.00	31,648.42	18,484.80	58.4	2,200,000.00	22,736.00	7,795.04	34.2
San Miguel	4,541,713.00	70,441.96	41,176.40	58.4	4,800,000.00	49,605.82	22,571.27	45.5
Sierra	1,254,791.45	18,583.56	17,880.94	96.2	1,300,000.00	13,434.92	7,399.52	55.0
Socorro	1,945,010.00	30,167.10	23,627.27	78.3	2,100,000.00	21,702.55	11,362.25	52.3
Sandoval	735,455.00	11,406.90	7,298.97	63.9	765,000.00	7,905.94	2,846.53	36.0
Taos	578,820.00	8,977.49	6,935.51	77.2	800,000.00	8,267.64	3,168.34	38.3
Union	1,947,250.00	30,201.84	23,874.85	79.0	2,000,000.00	20,669.10	15,138.43	73.2
Valencia	1,325,247.00	20,554.59	16,392.63	79.7	1,500,000.00	15,501.84	7,965.79	51.3
Total	39,596,951.79	613,261.58	483,394.68	79.1	42,665,000.00	439,890.00	234,262.26	53.2

[a] Changed to Guadalupe.

The tax levies for 1903 was 15.51 mills.

NOTE.—The amounts in "Cash product" columns are exclusive of the 4 per cent treasurer's commissions. Collection of taxes for year 1904 includes collections only on account of first half.

J. H. VAUGHN, *Territorial Treasurer.*

TRAVELING AUDITOR.

In compliance with your favor of the 26th instant, requesting a report of the transactions of this office for the past year, I beg leave to submit the following:

The several counties of the Territory have been visited, as required by law, and a full and complete investigation made into their financial affairs. In this work the auditor has been treated with uniform courtesy by county officials, and every assistance extended to aid him in the discharge of his official duties, and a desire for economy in the expenditure of public funds, and a faithful performance of duty by those having in charge the finances of our counties, appear to be the rule almost without exception.

Statement 1 is a brief summary, by counties, of financial transactions of the several counties of the Territory for the year 1904, and by which it will be seen that on January 1, 1904, there were in the treasuries of the several counties of the Territory the aggregate sum of $668,486.08, and that during the year there came into the hands of the county treasurers, from the collection of all taxes and other miscellaneous sources, the sum of $1,678,267.39, and that there was disbursed by warrants drawn by boards of county commissioners, school boards, and payment of interest coupons, commissions of treasurers, remittances to the Territorial treasurer of Territorial tax, and settlements with treasurers of municipalities for muncipal taxes collected through county treasurers, the sum of $1,803,919.12, and leaving an aggregate balance on hand in the treasuries of the various counties at close of business December 30, 1904. the sum of $542,834.35.

Statement 2 is a tabulation showing various sources of receipts by counties and will be of interest as a matter of comparison between counties. On the collection of taxes under the assessment laws of our Territory a high average was maintained during the year 1904 as compared with former years.

A good revenue for the benefit of the public schools, as will be seen by reference to the statement, is derived from the collection of license taxes, the collection of this tax being in charge of county officials, but the revenue from the collection of poll tax

and fines by clerks of school boards and precinct justices of the peace, as shown by the amounts turned over to the county treasurers, is very small in some of the counties, and by a comparison with reports of county superintendents to the superintendent of public instruction shows very large discrepancies. I account for this principally from the fact that school boards are disbursing these collections direct without paying same over to the county treasurers and drawing against funds by warrant, as provided by law.

School boards and precinct officers do not come under the supervision of this office.

Statement 3 shows disbursements by funds, and, as can be said of statement No. 2, will also be a subject of interest as a matter of comparison between counties.

An examination of this statement will show that in the aggregate salaries of county officials, excepting commissions to treasurers and assessors and certain fees to sheriffs and all general running expenses of the various counties of the Territory, amount to $227,568.63.

For courts in the six judicial districts of the Territory, the sum of $118,308.35.

For the support of public schools, the sum of $372,969.15. Of course a much larger amount than this is expended in the education of our children, as the amount mentioned above does not include the expenses of the institutions of higher education, which are maintained by direct appropriation, and which appropriations are paid by the Territorial treasurer out of the funds collected and remitted the Territorial treasurer by the treasurers of the several counties of the Territory.

It is a gratifying comparison between the amounts shown as expended for education and the amount expended in maintaining our courts.

For payment of interest on county bonded indebtedness and interest on bonded indebtedness of school districts, the sum of $146,386.67.

For bounties paid on scalps of wild animals, the sum of $17,592.28.

For the improvement of public highways, the sum of $36,759.91.

For repairs to public buildings, the sum of $34,481.95.

Remittances to the Territorial treasurer for the support of the Territorial government, educational and charitable institutions, the sum of $516,872.94.

For commissions paid county treasurers, the sum of $68,906.84.

For commissions paid county assessors, the sum of $27,640.52. County treasurers and assessors are allowed the same compensation for their services (4 per cent on collections of taxes), and the difference between the two amounts last mentioned is accounted for by the fact that the commission of assessors on all collections for Territorial purposes is remitted to the Territorial treasurer together with other Territorial taxes and by that officer paid direct to assessors on warrant of the Territorial auditor.

For maintaining municipalities, which taxes are collected by the county treasurers and turned over to the treasurers of the several municipalities of the Territory, the sum of $132,910.70.

For reindexing county records, the sum of $3,446.04.

For miscellaneous expenditures, which consist of judgments against counties and other items of a miscellaneous character, the sum of $86,869.60.

And to make the balance of expenditures, as shown in statement 1, an additional sum of $12,105.54, which was a default by the treasurer of Santa Fe County, and which is the only defalcation occurring in the Territory during the year 1904. This shortage was promptly detected by the auditor, and the money refunded during the present year by the bondsmen without suit, and no loss to taxpayers was incurred.

Statement 4 is an abstract of the assessed valuation of the property of the Territory subject to tax; much attention is given by this office to the proper returning and equalization of returns throughout the Territory. It is expected that the assessment for the year 1905 will not only show a large increase over the return of 1904, but will be in such shape that the county treasurers will make a good gain in the per cent of collections under this assessment.

Statement 5 is an abbreviated table of the levies for Territorial and county purposes for the year 1904, and does not include special school district levies, levies for municipalities, etc.

TERRITORIAL BANKS.

These institutions have been visited and examined by the auditor as required by law as far as time would permit, and are all in good solvent condition.

During the past year no failures have occurred nor have any of these institutions gone into voluntary liquidation, but on the other hand three new institutions of this character have been established in the Territory: The Citizens' Bank, of Aztec, at Aztec, N. Mex., with a paid-up capital of $15,000; The McKinley County Bank, of Gallup, N. Mex., with a capital of $30,000, of which $25,550 has been paid in, and the Bank of Artesia, of Artesia, N. Mex., with a capital stock of $15,000.

For further information with reference to the condition of these institutions will respectfully refer you to statement No. 6, which is a summary of the condition of these institutions under a late call by the traveling auditor for a report.

STATEMENT No. 1.

County.	Balance Jan. 1, 1904.	Receipts during 1904.	Expenditures during 1904.	Balance Jan. 1, 1905.
Bernalillo	$91,197.82	$189,470.21	$252,285.53	$28,382.50
Chavez	25,355.54	128,063.72	136,761.59	16,657.67
Colfax	50,284.28	117,018.98	123,627.99	43,675.27
Dona Ana	23,515.71	73,052.21	65,816.66	30,751.26
Eddy	36,283.50	68,801.87	68,809.49	36,275.88
Grant	54,305.47	103,759.95	109,227.80	48,837.62
Luna	16,879.78	53,940.18	53,736.66	17,083.30
Lincoln	27,336.44	47,113.01	55,015.10	19,434.35
Leonard Wood	9,189.01	65,185.98	59,385.61	14,989.38
McKinley	13,042.51	41,145.90	34,737.60	19,450.81
Mora	17,093.85	41,743.86	41,789.30	17,048.41
Otero	20,297.72	56,967.27	57,547.99	19,717.00
Quay	13,255.99	52,432.22	56,571.65	9,116.56
Rio Arriba	18,806.98	32,170.30	35,338.03	15,639.25
Roosevelt	24,050.94	19,875.47	40,771.60	3,154.81
Sierra	13,904.37	40,801.05	39,011.45	15,693.97
San Miguel	48,059.31	194,849.38	203,630.78	39,277.91
Santa Fe	25,972.41	73,580.86	84,376.57	15,176.70
Socorro	40,092.53	77,389.43	94,284.09	23,197.87
Sandoval	6,626.69	21,425.83	20,992.43	7,060.09
San Juan	8,717.58	26,770.61	30,198.12	5,290.07
Taos	18,194.83	22,634.27	24,245.42	16,583.68
Union	27,816.00	67,841.78	57,698.53	37,959.25
Valencia	38,206.82	62,233.05	58,059.13	42,380.74
Total	668,486.08	1,678,267.39	1,803,919.12	542.834.35

STATEMENT No. 2.—*Receipts for year 1904.*

County.	Tax.				Liquor and gambling license.	Merchandise license.	Poll tax.	Fines.
	1901 and prior years.	1902.	1903.	1904.				
Bernallilo	$895.42	$1,148.05	$71,224.90	$76,232.53	$31,486.00	$3,172.50	$21.60	$76.50
Chavez	503.36	1,898.10	56,253.06	51,457.39	12,138.00	122.50	713.00	36.00
Colfax	1,566.14	488.42	49,658.01	46,489.12	11,136.00	1,584.88	246.50	.....
Dona Ana	3,337.42	4,343.68	25,272.15	16,408.67	4,704.00	432.50	21.20	1,279.60
Eddy	569.18	644.44	34,129.85	26,607.59	4,704.00	1,100.00	229.12	179.60
Grant	4,902.64	1,189.01	37,356.94	42,724.50	9,264.00	2,140.00	321.65	1,042.76
Luna	649.23	564.55	25,346.14	21,100.54	4,464.00	871.60	152.30	478.33
Lincoln	255.28	799.00	22,766.40	17,279.69	3,126.00	110.00	302.00	536.55
Leonard Wood	3,646.10	1,320.67	18,487.75	6,459.11	6,000.00	615.00	622.39	241.00
McKinley	15.80	9.37	17,553.61	13,867.55	7,104.00	.....	796.70	203.00
Mora	1,232.39	559.46	15,623.44	13,788.06	6,720.00	688.75	693.45	70.00
Otero	330.87	910.22	24,272.65	16,903.04	3,984.00	816.25	948.30	934.80
Quay	.....	904.80	12,190.16	5,326.37	2,701.28	142.10	353.10	30.00
Rio Arriba	235.87	206.84	13,602.30	11,079.85	5,477.72	412.72	.....	57.00
Roosevelt	5,857.26	.....	4,763.08	5.413.82	2,144.00	512.50	308.90	58.00
Sierra	1,620.17	2,393.21	20,213.60	12,826.46	1,939.00	418.75	402.55	93.30
San Miguel	701.43	5,221.52	75,639.61	59,175.94	10,308.00	2,401.25	1,339.77	.....
Santa Fe	3,205.10	1,654.34	28,682.05	22,008.87	7,767.00	737.00	210.55	91.00
Socorro	755.38	1,244.80	36,655.63	29,321.87	6,336.00	662.50	1,871.59	.....
Sandoval	.....	728.55	8,370.80	5,815.62	1,536.00	412.50	509.44	.....
San Juan	1,379.09	1,331.48	11,855.69	7,705.97	1,643.50	258.75	509.70	120.00
Taos	259.98	343.70	8,289.25	7,858.54	4,608.00	536.25	27.20	20.90
Union	272.09	4,323.30	28,411.83	28,813.81	4,563.50	492.50	255.05	169.88
Valencia	10,355.25	343.04	23,264.52	17,750.86	6,720.00	1,045.00	1,035.20	70.00
Total	42,545.45	32,570.55	669,883.42	562,415.77	161,574.00	19,685.80	11,891.26	5,788.22

STATEMENT No. 2.—*Receipts for year 1904*—Continued.

County.	Common-school income.	Pullman tax.	Court.	Refunds.	County settlements and sale of bonds.	Miscellaneous.	Total.
Bernallilo			$507.25	$2,699.08		$2,006.38	$189,470.21
Chavez		$8.18	1,172.75		$2,777.45	983.93	128,063.72
Colfax						5,849.91	117,018.98
Dona Ana	$954.00	19.66			13,805.60	2,473.73	73,052.21
Eddy			170.00			468.09	68,801.87
Grant		7.89				4,810.56	103,759.95
Luna		13.49				300.00	53,940.18
Lincoln						1,938.09	47,113.01
Leonard Wood	453.60				8,100.00	19,240.36	65,185.98
McKinley		10.19				1,585.68	41,145.90
Mora	891.68	6.03				1,470.60	41,743.86
Otero			48.00		7,343.65	475.49	56,967.27
Quay					30,784.41		52,432.22
Rio Arriba						1,098.00	32,170.30
Roosevelt			543.30			274.61	19,875.47
Sierra		7.18				886.83	40,801.05
San Miguel	1,955.21	10.05		480.60	35,000.00	2,616,00	194,849.38
Santa Fe	1,512.00	5.88				7,707.07	73,580.86
Socorro						541.66	77,389.43
Sandoval						4,052.92	21,425.83
San Juan					1,900.00	66.43	26,770.61
Taos						690.45	22,634.27
Union						539.82	67,841.78
Valencia	1,649.18						62,233.05
Total	7,415.67	88.55	2,441.30	3,179.68	99,711.11	59,076.61	1,678,267.39

STATEMENT No. 3.—*Disbursements for year 1904.*

County.	General county.	Court.	Interest.	Wild-animal bounty.	Road and bridge.	Court-house and jail.	Territorial treasurer.	Treasurer's commission.
Bernalillo	$14,409.30	$9,847.34	$23,472.93	$474.00	$901.75	$713.05	$59,721.30	$10,961.30
Chaves	14,523.78	9,664.11	2,795.12	4,325.75	6,316.97	2,075.53	44,138.27	6,157.63
Colfax	15,099.19	7,967.85	4,155.00	1,477.00	5,932.19	2,409.35	39,026.90	5,036.93
Donna Ana	8,805.54	5,927.50	4,953.33	.77	330.57	253.32	27,287.90	3,155.69
Eddy	9,063.46	4,939.74	2,110.34	3,289.68	1,228.89	308.43	24,841.93	1,132.35
Grant	16,037.67	6,821.75	22,684.40	1,521.00	972.05	970.78	37,858.32	4,270.08
Luna	6,406.65	2,102.91	2,813.84	603.66	279.64	775.78	19,274.42	1,957.03
Lincoln	7,545.53	7,923.80	2,536.30	1,918.81	884.15	1,532.60	16,969.95	1,770.31
Leonard Wood	21,040.90	4,541.36	2,887.55	262.00	98.10		13,652.32	1,342.72
McKinley	3,319.60	759.13	1,754.40		871.80	1,734.04	13,119.86	1,297.79
Mora	6,540.17	2,275.39	1,766.22	108.80	611.52	172.13	9,837.47	2,502.25
Otero	12,427.34	5,330.11	2,308.83	518.33	741.11	3,031.62	18,996.12	400.00
Quay	6,831.02	1,671.65	1,140.00	186.00		4,427.79	7,973.60	455.42
Rio Arriba	3,666.75	4,649.65	3,860.50	10.00	226.11	64.50	9,177.16	2,850.11
Roosevelt	8,338.32	2,558.85	766.00	184.00	32.00	10,025.60	9,642.09	653.27
Sierra	4,599.53	3,070.79	3,006.90	808.00	529.19	245.00	18,317.33	1,229.66
San Miguel	17,396.88	8,105.65	30,682.62	520.36	1,673.48	1,736.62	41,943.63	6,426.96
Santa Fe	9,195.53	4,936.90	2,562.05	38.00	6,499.71	704.09	17,971.90	4,422.93
Socorro	15,450.54	9,001.03	11,787.49	1,215.44	881.01	1,612.73	26,928.01	3,523.36
Sandoval	5,982.23	2,235.42		28.00			6,952.84	1,198.07
San Juan	4,192.24	1,758.36	1,180.36		662.32	828,35	9,763.83	1,549.05
Taos	2,818.19	1,925.31	2,303.98		503.72	146.82	6,350.98	690.79
Union	6,539.56	6,555.24	2,070.06		606.43	713.82	26,187.93	2,626.54
Valencia	7,338.71	3,738.51	12,788.45	102.68	5,977.40		10,488.88	3,296.60
Total	227,568.63	118,308.35	146,386.67	17,592.28	36,759.91	34,481.95	516,872.94	68,906.84

STATEMENT No. 3.—*Disbursements for year 1904*—Continued.

County.	Assessor's commission.	Municipal taxes.	School funds, general and special.	Default.	Index.	Miscellaneous.	Total.
Bernalillo	$4,328.58	$72,735.88	$54,720.10	.....	.....	.....	$252,285.53
Chaves	2,209.84	12,254.35	32,171.82	.....	.....	$128.62	136,761.59
Colfax	2,710.92	9,899.13	25,673.62	.....	$1,850.00	2,389.91	123,627.99
Donna Ana	922.14	.....	12,922.60	.....	664.24	593.06	65,816.66
Eddy	922.90	2,333.39	18,079.96	.....	.....	558.42	68,809.49
Grant	2,242.32	.....	15,195.54	.....	250.00	403.89	109,227.80
Luna	585.97	.....	14,907.98	.....	.....	3,578.78	53,736.66
Lincoln	982.19	.....	12,951.46	.....	.....	.....	55,015.10
Leonard Wood	718.64	.....	14,785.02	.....	.....	57.00	59,385.61
McKinley	1,160.57	285.51	9,831.87	.....	.....	603.03	34,737.60
Mora	1,235.79	.....	9,821.31	.....	.....	6,918.25	41,789.30
Otero	661.25	.....	10,946.77	.....	.....	2,186.51	57,547.99
Quay	317.97	.....	14,083.52	.....	.....	19,484.68	56,571.65
Rio Arriba	771.44	.....	10,061.81	.....	.....	.....	35,338.03
Roosevelt	425.79	.....	7,267.21	.....	.....	878.47	40,771.60
Sierra	752.69	.....	6,089.79	.....	181.80	180.77	39,011.45
San Miguel	.....	15,760.08	33,859.65	.....	.....	45,524.85	203,630.78
Santa Fe	2,850.58	14,830.14	7,574.20	[a]$12,105.54	500.00	185.00	84,376.57
Socorro	857.84	5,620.97	15,181.87	.....	.....	2,223.80	94,284.09
Sandoval	304.71	.....	4,091.16	.....	.....	200.00	20,992.43
San Juan	476.42	191.25	9,069.11	.....	.....	526.83	30,198.12
Taos	185.80	.....	9,259.60	.....	.....	60.23	24,245.42
Union	877.89	.....	11,333.56	.....	.....	187.50	57,698.53
Valencia	1,138.28	.....	13,189.62	.....	.....	.....	58,059.13
Total	27,640.52	133,910.70	372,969.15	12,105.54	3,446.04	86,869.60	1,803,919.12

[a] Default by county treasurer.

STATEMENT No. 4.—*Abstract of taxable property for the year 1904.*

County.	Real estate.	Railroads.	Horses and mules.	Cattle.	Sheep and goats.
Bernalillo	$2,223,563	$299,060	$25,672	$15,244	$119,666
Chaves	1,352,996	122,300	101,240	715,947	213,286
Colfax	1,490,425	540,016	40,524	367,757	110,806
Donna Ana	835,650	911,124	47,921	165,511	28,519
Eddy	532,756	257,482	113,335	614,665	99,940
Grant	745,030	768,570	67,720	857,140	28,390
Luna	320,597	795,633	18,115	249,177	3,178
Lincoln	438,722	.....	48,821	364,628	138,015
Leonard Wood	215,316	.....	37,640	112,354	216,076
McKinley	486,355	405,053	1,651	6,540	11,200
Mora	392,430	272,715	34,451	165,056	138,681
Otero	818,335	.....	61,425	279,215	41,574
Quay	181,455	.....	32,831	235,636	66,234
Rio Arriba	385,105	353,298	16,963	12,573	139,639
Roosevelt	232,297	.....	54,805	223,885	30,936
Sierra	335,617	362,063	57,958	331,894	44,795
San Miguel	2,617,724	760,152	64,312	235,645	293,559
Santa Fe	970,096	492,910	21,076	23,183	60,232
Socorro	623,160	651,795	70,135	352,055	141,090
Sandoval	390,667	230,288	30,920	25,350	61,306
San Juan	436,741	.....	39,328	49,283	24,831
Taos	385,246	146,990	18,812	14,684	108,348
Union	466,672	420,555	37,085	431,919	357,487
Valencia	444,840	721,535	16,943	21,483	225,856
Total	17,321,795	8,511,539	1,059,683	5,870,824	2,703,644

STATEMENT No. 4.—*Abstract of taxable property for the year 1904*—Continued.

County.	Other property.	Totals.	Exemptions.	Subject to taxation.
Bernalillo	$722,555	$3,405,760	$241,960	$3,163,800
Chaves	499,053	3,004,822	142,952	2,861,870
Colfax	426,459	2,975,987	152,800	2,823,187
Donna Ana	214,188	2,202,913	115,400	2,087,513
Eddy	218,364	1,836,542	86,800	1,749,742
Grant	510,376	2,977,226	78,200	2,899,026
Luna	166,898	1,553,598	42,000	1,511,598
Lincoln	247,869	1,238,055	81,400	1,156,655
Leonard Wood	95,084	676,470	64,018	612,452
McKinley	111,241	1,022,040	28,777	993,263
Mora	107,492	1,110,825	96,000	1,014,825
Otero	528,977	1,729,526	125,554	1,603,972
Quay	116,980	633,136	55,196	577,940
Rio Arriba	137,985	1,045,563	69,800	975,763
Roosevelt	120,950	662,873	98,973	563,900
Sierra	188,806	1,321,133	77,204	1,243,929
San Miguel	670,680	4,642,072	209,095	4,432,977
Santa Fe	332,375	1,899,872	149,752	1,750,120
Socorro	205,320	2,043,555	133,200	1,910,355
Sandoval	60,148	798,679	56,400	742,279
San Juan	108,111	658,294	83,413	574,881
Taos	126,050	800,130	124,400	675,730
Union	231,758	1,945,476	80,200	1,865,276
Valencia	120,316	1,550,973	44,787	1,506,186
Total	6,268,035	41,735,520	2,438,281	39,297,239

STATEMENT No. 5.—*Levies, 1904.*

County.	Territorial.	County.	Total.	County.	Territorial.	County.	Total.
	Mills.	*Mills.*	*Mills.*		*Mills.*	*Mills.*	*Mills.*
Bernalillo	14.00	20.50	34.50	Quay	16.00	17.50	33.50
Chaves	14.00	15.00	29.00	Rio Arriba	14.00	20.00	34.00
Colfax	14.00	14.00	28.00	Roosevelt	15.40	12.00	27.40
Donna Ana	14.00	13.01	27.01	Sierra	14.00	10.00	24.00
Eddy	14.00	18.20	32.20	San Miguel	16.50	20.00	36.50
Grant	16.00	16.00	32.00	Santa Fe	14.50	28.50	43.00
Luna	14.00	10.00	24.00	Socorro	14.00	21.00	35.00
Lincoln	14.00	19.50	33.50	Sandoval	15.00	18.00	33.00
Leonard Wood	14.00	15.50	29.50	San Juan	15.00	15.00	30.00
McKinley	14.00	16.00	30.00	Taos	14.00	20.00	34.00
Mora	14.00	26.56	40.56	Union	14.00	11.50	25.50
Otero	14.00	18.00	32.00	Valencia	14.00	20.50	34.50

STATEMENT No. 6.—*Condensed statement thirteen Territorial banks, New Mexico, June, 1905.*

RESOURCES.

Name.	Location.	Loans and discounts.	Bonds.	Real estate and fixtures.	Cash and sight exchange.	Aggregate.
Bank of Commerce	Albuquerque	$924,084.97	.....	$21,671.77	$408,965.13	$1,354,721.87
Andrew Morton & Co.	Springer	20,803.00	.....	1,312.00	7,164.00	29,279.00
Plaza Trust and Savings.	Las Vegas	62,406.00	$9,500.00	4,436.00	50,410.00	126,752.00
Bank of Deming	Deming	126,132.00	5,000.00	7,000.00	154,657.00	292,789.00
Exchange Bank	Whiteoaks	64,205.00	.....	1,578.00	52,867.00	118,650.00
Bank of Portales	Portales	32,745.34	.....	7,982.27	21,259.23	61,986.84
Savings Bank	Silver City	22,750.00	18,684.00	.....	7,409.00	48,843.00
Las Vegas Savings	Las Vegas	105,933.00	.....	5,000.00	51,146.00	162,079.00
Sierra County	Hillsboro	121,886.00	.....	2,580.00	89,177.00	213,643.00
McKinley County	Gallup	67,626.00	.....	3,260.00	32,573.00	103,459.00
Citizens Bank	Aztec	19,520.00	.....	1,070.00	19,483.00	40,073.00
Bank of Artesia	Artesia	51,453.00	.....	7,914.00	14,258.00	73,625.00
J. N. Broyles	San Marcial	10,000.00	.....	.....	102,000.00	112,000.00
Total	.....	1,629,544.31	33,184.00	63,804.04	1,011,368.36	2,737,900.71

STATEMENT No. 6.—*Condensed statement thirteen Territorial banks, etc.*—Continued.

LIABILITIES.

Name.	Location.	Capital stock.	Surplus and profits.	Deposits.
Bank of Commerce	Albuquerque	$150,000.00	$28,731.18	$1,175,990.69
Andrew Morton & Co	Springer	5,000.00	2,719.00	21,560.00
Plaza Trust and Savings	Las Vegas	15,000.00	80.00	111,672.00
Bank of Deming	Deming	30,000.00	11,472.00	251,317.00
Exchange Bank	Whiteoaks	30,000.00	9,618.00	79,032.00
Bank of Portales	Portales	30,000.00	4,976.13	27,010.71
Savings Bank	Silver City	15,000.00	86.00	33,757.00
Las Vegas Savings	Las Vegas	30,000.00	2,078.00	130,001.00
Sierra County	Hillsboro	30,000.00	5,000.00	178,643.00
McKinley County	Gallup	25,550.00	45.00	77,864.00
Citizens Bank	Aztec	15,000.00	.....	25,073.00
Bank of Artesia	Artesia	15,000.00	1,576.00	57,049.00
J. N. Broyles	San Marcial	20,000.00	.....	92,000.00
Total	.....	410,550.00	66,381.31	2,260,969.40

All of which is respectfully submitted.

C. V. SAFFORD,
Traveling Auditor and Bank Examiner.

REPORT OF THE SECRETARY OF THE TERRITORY.

GENERAL ELECTION, 1904.

Following out the plan inaugurated in 1902, there was prepared in this office a complete tabulation of the election returns for the general election held on November 8, 1904.

OFFICIAL REGISTER.

An official register containing the names, addresses, and terms of office of Territorial, Federal, and county officials was prepared in connection with the tabulation of election returns, but this register is too extensive for reproduction.

THIRTY-SIXTH LEGISLATIVE ASSEMBLY.

As provided by act of Congress, the thirty-sixth legislative assembly convened at the capitol on the 16th day of January, 1905, for the usual session of sixty days. The session was particularly notable by reason of the much-needed and far-reaching legislation enacted, among the acts to which special attention should be directed being the irrigation law, the militia law, and the general corporation law, which will be reviewed elsewhere.

COMMISSIONS.

During the fiscal year 1905 commissions were issued to one commissioner of deeds for New Mexico in other States and countries, to 337 notaries public in the several counties, and to 430 Territorial officials, boards, and commissions.

Commissioners of deeds for New Mexico in other States and countries.

Name.	Post-office.	Term expires.
Charles Edgar Mills	New York City	Jan. 22, 1907
John A. Peck	St. Louis, Mo	Mar. 3, 1907
Charles Hall Adams	Boston, Mass	Feb. 23, 1907
J. Burke Hendry	London, England	May 8, 1907
Samuel L. Taylor	Philadelphia, Pa	Apr. 24, 1907
Joseph B. Braman	New York City	Aug. 1, 1907
Alfred Mackay	do	Oct. 15, 1907
James L. King	San Francisco, Cal	Nov. 17, 1907
Edwin F. Corey	New York City	Nov. 23, 1907
Silas S. Willard	Chicago, Ill	Nov. 27, 1907
Simeon W. King	do	Nov. 30, 1907
Charles S. Bundy	Washington, D. C	Dec. 7, 1907
Isidor J. Pocher	New York City	Dec. 4, 1907
Thomas J. Hunt	Philadelphia, Pa	May 7, 1908
Fergus F. MacWilkie	do	May 22, 1909

CORPORATIONS.

The last year has shown a slight increase in the number of filings by intended corporations, an increase of the total capitalization of such companies, and likewise an increase of the filing fees paid into the Territorial treasury. Comparative statistics covering the years 1904 and 1905 will be found in Tables I, II, and III.

The much-needed revision of our entire corporation law was secured by the passage in the thirty-sixth legislative assembly of a very comprehensive and satisfactory act, based to a large extent upon the New Jersey statute. This act has the advantage of covering the entire subject in all its branches; and, while it offers every legitimate privilege to a corporation, it also protects the interests of minority stockholders, creditors, and others having dealings with corporate organizations. It is confidently predicted that one of the effects of this legislation will be a steady and permanent increase in the number of corporations which will be formed under this jurisdiction, and this, in turn, will have the effect of materially increasing the Territorial revenue derived from corporation fees.

TABLE I.—*Corporation filings for fiscal years 1904 and 1905.*

Place of origin.	1904.		1905.	
	Number.	Authorized capital.	Number.	Authorized capital.
Foreign:				
Arizona	9	$10,500,000	5	$12,600,000
California	1	25,000	.....	.....
Colorado	6	5,955,000	4	10,280,000
Connecticut	1	100,000	.....	.....
Delaware	1	200,000	.....	.....
District of Columbia	.....	.....	1	500,000
Kansas	1	200,000	.....	.....
Maine	1	500,000	.....	.....
Michigan	1	50,000	1	15,000
Missouri	1	500,000	2	505,000
New Jersey	3	2,550,000	2	1,500,000
New York	1	500,000	.....	.....
Ohio	1	500,000	1	10,000
Oklahoma	.....	.....	2	350,000
South Dakota	2	11,000,000	1	1,000,000
Texas	1	75,000	1	100,000
West Virginia	.....	.....	2	250,000
Wisconsin	.....	.....	1	50,000
Wyoming	1	500,000	1	1,000,000
Total	31	33,155,000	24	28,160,000
Domestic	153	71,017,900	166	83,096,200
Grand total	184	104,172,900	190	111,256,200

TABLE II.—*Character of corporation charters issued for the fiscal years 1904 and 1905.*

Character.	1904.			1905.		
	Number.	Capital.	Mileage.	Number.	Capital.	Mileage.
Banks and building and loan associations	4	$1,750,000	.....	3	$75,000	.....
Benevolent and charitable institutions	14	12,000	.....	18	55,000	.....
Irrigation and improvement companies	13	4,238,000	.....	11	9,367,200	.....
Manufacturing and other industrial pursuits	70	8,918,200	.....	96	22,611,500	.....
Mining, milling, and smelting companies	79	83,824,700	.....	53	52,797,500	.....
Railway companies	4	[a] 5,430,000	84	9	26,350,000	2,000
Total	184	104,172,900	84	190	111,256,200	2,000

[a] $3,500,000 of this capitalization represented by increase of capital stock without corresponding increase in mileage.

TABLE III.—*Incorporation fees paid Territorial treasurer for fiscal years 1904 and 1905.*

Quarter.	1904.	1905.
First	$2,375.00	$1,040.00
Second	2,510.00	3,160.00
Third	4,935.00	3,490.00
Fourth	1,760.00	4,270.00
Total	11,580.00	11,960.00

Very respectfully,

J. W. RAYNOLDS,
Secretary of New Mexico.

SUPERINTENDENT OF PUBLIC INSTRUCTION.

THE HIGHER INSTITUTIONS.

Without considering the purely benevolent public institutions, the higher educational ones consist of the College of Agriculture and Mechanic Arts at Las Cruces, the University at Albuquerque, the School of Mines at Socorro, the New Mexico Normal School at Silver City, the Normal University at Las Vegas, and the Military Institute at Roswell.

These institutions, like the cities, towns, and villages, may be expected to grow, expand their curriculums, and become stable about in the same ratio as the material development of the Territory advances. This expectation is being satisfactorily realized. Each year shows very decided growth in all these institutions. The material prosperity of nearly every portion of New Mexico finds its reflex counterpart in the corresponding growth of these institutions. Boarding houses, class rooms, and lecture halls are overcrowded. The cry is: "More buildings, more equipment, larger faculties." This is a good sign. Whenever a college ceases to cry for "more" its mission has been performed, and there is little further need of it. Close the doors; let weeds cover the campus.

By a wise foresight of our legislators these institutions have been scattered and located in different parts of our great Territory. History shows that the establishment of colleges and other higher institutions of learning preceded the general introduction of the common school. From these an influence went out and took a hold upon the masses which resulted in the creation of and the provision for common schools.

To New Mexico no other interest is of so great importance as the rapid and general improvement of her educational standing. Although these higher institutions are strictly Territorial, each is also to a considerable extent local. It is an educational center to which the more enterprising and better prepared youth, on account of its proximity to their homes, may resort for training. After having received this, they return to their respective communities, whether it be the city, the village, or the isolated group that gathers around a mine or an agricultural oasis, and induce others to do likewise. Thus each of these institutions becomes a center of great influence from which radiates an educational spirit and enterprise that soon permeates and awakens the masses. The outer waves of these circles of widening influence meet and overlap one another, and thus the whole of the great expanse of territory in a comparatively short time responds, and all the people acquire the rudiments of an education.

THE COMMON SCHOOLS.

A report concerning the common schools naturally divides itself into a discussion of the strictly rural schools and the graded schools.

The rural-school problem is one that is claiming the anxious attention of great educators in all parts of the United States. A few years ago the great National Educational Association appointed a committee consisting of able men to investigate this subject and report. It also made a large appropriation of money to defray the expenses of that committee. That report aroused much interest, and many portions of the United States have been honestly inquiring as to what means can be adopted to give the rural population educational advantages more nearly equal to those enjoyed by the towns and cities.

New Mexico encounters peculiar difficulties in her efforts to solve this problem. The great extent of country and the comparatively sparse population gathered into groups around spots that offer some attractions for the pursuit of material enterprises

renders it very difficult in many instances to give some of these isolated bodies even the minimum amount of school prescribed by law.

The fixed revenue for school purposes consists of rents received from leasing the sixteenth and thirty-sixth sections of each township, a 2-mill Territorial tax, the proceeds of certain licenses and fines, and the interest on 5 per cent of net proceeds from sales of public lands. In addition to these, each board of school directors is empowered to levy a 5-mill tax for school purposes, and by an affirmative vote of the people this levy may be increased to 10 mills. This levy is ultimately in the control of the people. No uniformity of practice in regard to the amount levied seems to exist. In some districts nothing is levied, in others the full 10 mills. Yet there are few districts in the Territory containing the legal number of 25 children of school age in which a school of at least three months is not annually taught. To be sure, some of these schools are not so good as they ought to be, but educational spirit is in the atmosphere and progress is being made. In some counties the rural schools are sustained nine months in the year. Another noticeable feature is the steady increase in the number of districts that are building good, comfortable schoolhouses.

As to the graded schools of towns and cities, it would be unjust to use any other than words of praise and encouragement. It would also be invidious to make comparisons where there is so much to commend. The following towns and cities, and perhaps some omitted ones, maintain throughout the year excellent graded schools in good buildings, thoroughly furnished and equipped: Silver City, Deming, Las Cruces, Albuquerque, Gallup, Santa Fe, Las Vegas, Raton, Alamogordo, Carlsbad, and Roswell. Some of the newer towns, such as Estancia, Santa Rosa, Tucumcari, and Artesia, are rapidly forging to the front. Las Cruces has just completed a beautiful brick and stone building costing $15,000, and Santa Fe is now putting the finishing touches on an elegant brick building that would grace any city of three times the size of Santa Fe. The value of building, grounds, and furniture is rather more than $50,000. Temporary residents of the Territory who have during their stay patronized some of our graded schools have told me that they considered them better than what they had been accustomed to in the States.

Reports received from Santa Fe, Las Vegas, Raton, Silver City, Las Cruces, Albuquerque, Roswell, Socorro, and Gallup give statistics as below:

School enumeration, 12,000; enrollment in schools, 7,000; average daily attendance, 5,000; number of teachers employed, 130.

The same, omitting Las Cruces, report 500 students enrolled in their high schools, with an average attendance of 400, and number of teachers employed, 27.

The whole number of persons in New Mexico between 5 and 21 years of age August 1, 1905, was 68,193.

The whole number of persons actually enrolled in the common schools in 1905 was 36,111.

Average daily attendance	17,301
Total number of school districts	619
Whole number of schools	796
Number of teachers	859
Total receipts	$408,336.71
Total expenditures	$247,506.34
Money on hand August 1, 1905	$160,830.37

DENOMINATIONAL SCHOOLS.

Religious denominations have been the pioneers in educational work in New Mexico. Their sacrificing devotion to this cause merits the grateful appreciation of every true citizen. They still maintain many good schools. Of statistics at hand the following is a summary:

Denomination.	Schools.	Pupils enrolled.	Teachers employed.
Roman Catholic	20	2,500	90
Baptist Mission	4	260	15
Congregational	6	500	14
Presbyterian	24	2,400	47
Methodist	14	340	22

While it is beyond the scope of the office of the superintendent of public instruction, yet as a matter of public interest it may be mentioned that the Federal Government maintains in New Mexico for ten months each year, for the education of the Indians, 34 schools, with an enrollment of 2,500 pupils and 110 teachers.

TERRITORIAL BOARD OF EDUCATION.

The Territorial board of education, consisting of the governor as chairman and the superintendent of public instruction as secretary and five other members appointed by the governor, has held two meetings during the year closing September 1, 1905.

By an act of the last legislature this board was "authorized to issue Territorial teachers' certificates to persons whom it may deem qualified by reason of their moral character, academic scholarship, knowledge of the theory and art of teaching, and actual practice in teaching. The certificates shall remain in force from and after their issue: *Provided*, No certificate shall be granted for less than five years: *And provided further*, The lowest qualifications for such certificates shall be equal in respect to moral character, academic scholarship, knowledge of the theory and art of teaching, and actual practice in teaching to that required of those who complete the full professional course in either the New Mexico Normal School or the Normal University. Holders of these certificates who possess a certificate of attendance upon some county or city normal institute or summer school, as already provided by law, shall be entitled without further examination to teach in any of the public schools of New Mexico for the period of time designated therein."

For the administration of this law the Territorial board of education has adopted the following rules:

"*Rule 1.*—An applicant for a professional certificate who resides outside the Territory, as one condition of having his application granted, must present a certificate from the school superintendent of the county in New Mexico in which he proposes to teach, or from the board of education or school directors by which he is employed, testifying to such employment.

"*Rule 2.*—Under said law the board will grant two classes of certificates: The first for the term of five years; the second, called a life certificate, for an indefinite period, containing a provision that the recipient remain in active service, with a permissible absence of not more than three years at any one time, and that each grantee of such certificate shall report annually to the superintendent of public instruction in regard to his active service.

'*Rule 3.*—No life certificate will be granted to any person who has not had at least five years' successful experience in the public schools of New Mexico.

"*Rule 4.*—Graduates of schools that are not normal schools, yet have an academic course fully equal in all respects to the highest academic course of either of the normal schools of New Mexico, may be granted the five years' certificate only after they have had three years of successful experience in teaching."

Under this law, at the meeting of the board in June 15, life certificates were granted, and 42 five-years' certificates were granted. This marks a decided educational advance. Many thoroughly qualified and experienced teachers holding high credentials are desirous of coming to New Mexico to locate. Also in New Mexico at the present time are many such educators. This provision, which is similar to what exists in most States, enables such to procure a professional certificate and be relieved of the humiliation and inconvenience of submitting to the periodical examination by the county board, too frequently composed of those who are none too competent themselves. The superintendent of public instruction for the State of California, in his report for 1904, says: "Certification on examination by county boards of education is rapidly becoming obsolete."

At the last meeting of this board so much of interest came before it that it was determined to adopt a regular order for quarterly meetings in future.

TEACHERS' INSTITUTES.

By law an annual appropriation of $50 is made to counties of the third and fourth classes, $75 to counties of the second class, and $100 to counties of the first class toward defraying the expenses of a teachers' institute of not less than two weeks in length. The county superintendent is also permitted to collect from each member of the institute a fee of not more than $3. Attendance upon these institutes by prospective teachers is made compulsory. The funds thus provided have enabled county superintendents, in most cases, to employ competent instructors. The Territorial superintendent or his assistant has visited 12 of these institutes and spoken to the teachers and the people. The educational needs of different portions of the Territory are not uniform. An effort has been made to fit the instruction given in these institutes to the special needs of the section represented. I believe that a fair degree of success has attended this effort. From reports received, and from official observation, I am of the opinion that in nearly every case the institutes have shown a decided advancement over any previous year. In some of these the instruction given, the programmes of exercises and the intelligent discussions of topics under consideration

compared favorably with what is witnessed in States much older educationally than New Mexico is. There can be no truer index of the intellectual standing of a community than its teachers' institute is.

In connection with "institutes" it is proper to mention the summer session of the Normal University at Las Vegas. This opened June 19 and continued in session eight weeks. It was under the immediate direction of President Vert. He was assisted by a corps of competent instructors. The curriculum of studies was arranged to meet the needs of all grades of teachers. Sixty-seven teachers from various portions of the Territory attended this school. From personal observation I can testify that much of the work done was of a superior character. I regard this summer session as one of the important events in our educational progress. The eight weeks of continuous study enabled the students to acquire much of real value. Each of those who attended will become a missionary for better teaching.

JOURNAL OF EDUCATION.

Another index to the advance of educational spirit in New Mexico is found in the fact that on January 1, 1905, Messrs. McNary & Ward began the publication of the New Mexico Journal of Education, as a quarterly devoted to educational interests in New Mexico. It is a very creditable periodical and three numbers have been issued.

CONCLUSION.

When only short periods of time are considered, great changes can not be so well detected as when long ones are viewed. Beginning with the year 1890, the progress of education in New Mexico has been phenomenal. It probably has not been excelled by any other portion of the United States. The year just closing has been one of the best. None but a pessimist could fail to be gratified at what has been accomplished.

Very respectfully, your obedient servant,

HIRAM HADLEY,
Superintendent of Public Instruction.

REPORT OF THE ATTORNEY-GENERAL.

SIR: In compliance with your request I have the honor to submit herewith my report as attorney-general of the Territory for the past year.

During that time I have rendered opinions to Territorial officials and boards, on the construction of the law governing their duties, etc., as follows:

No. 228, November 29.—Opinion to treasurer of the Territory recommending change of bond of Silver City National Bank, as to form.

No. 229, December 1.—Opinion to Dr. G. W. Harrison, president board of health, on powers of board to license persons to practice medicine.

No. 230, December 6.—Opinion to governor relating to inquiry of British consul of Galveston, concerning an income-tax law of New Mexico.

No. 231, December 15.—Opinion to governor relating to the point as to whether a vacancy is created in a county office where newly elected officer dies before qualifying and the power of the governor to appoint a successor.

No. 232, December 15.—Opinion to governor holding that the widow of a county assessor is not qualified to hold the office by election or appointment, she not being a qualified voter.

No. 233.—Opinion to Solomon Luna, president sheep sanitary board, regarding the powers of the board where owner refuses to dip sheep under board's order.

No. 234, January 10.—Opinion to G. A. Richardson, president of irrigation commission, holding that the commission can not expend moneys in regard to the improvement of the flow of water of the Rio Grande under the act of the legislature creating a board of public lands.

No. 235, January 12.—Opinion to board of equalization regarding the course to be pursued where collector fails to collect taxes on patented and confirmed land grants.

No. 236.—Opinion to the governor in regard to want of form of the bond of W. H. Jack as a member of the cattle sanitary board.

No. 237.—Opinion to Territorial auditor regarding the right of Francisco S. Chavez, assessor of San Miguel County, to certain commissions on collections made upon assessment rolls of 1903–4.

No. 238, February 7.—Opinion to the governor in regard to the duties of foreign corporations in the matter of registering their articles of incorporation or charter.

No. 239, February 15.—Opinion to the governor as to insufficiency of application for requisition from the governor of Missouri.

No. 240, February 21.—Opinion to auditor of Territory holding that his duties close as to all matters relating to insurance companies upon the passage of the insurance act, February 9, 1905.

No. 241, February 23.—Opinion to the governor regarding the question as to whether an act of the legislature respecting community land grants in Dona Ana County is special legislation prohibited by act of Congress.

No. 242, February 28.—Opinion to Territorial auditor regarding payment of commissions to assessors.

No. 243, March 1.—Opinion to the superintendent of public instruction touching the right of a teacher of public schools to have his certificate renewed by a county school superintendent.

No. 244, March 2.—Opinion to Hon. H. B. Hervey, district attorney, holding that neither collector or assessor is entitled to commission on moneys collected on assessment by collector where assessor omits to make the assessment, and holding that owner of personal property on March 1 is liable for the tax thereon, though he may have subsequently sold the same.

No. 245, March 23.—Opinion to H. B. Holt, secretary board of regents of the New Mexico Agricultural College, regarding the right of board to spend certain moneys for the construction of buildings, etc.

No. 246, March 24.—Opinion to superintendent public instruction in relation to the persons who should report moneys paid out for school purposes, and whether county superintendent of schools should approve warrants for "interest on schoolhouse bonds" before they are paid.

No. 247, March 24.—Opinion to superintendent of public instruction as to whether school directors have the right to draw warrants for teachers' wages when there are no funds in the treasury to meet them.

No. 248, May 9.—Opinion to Adjutant-General Tarkington in relation to local bounty law in New Mexico, advising that no such law has ever been enacted by any legislature of the Territory.

No. 249, May 12.—Opinion to O. C. Myhre, secretary of New Mexico board of examiners in optometry, construing section 6 of the optometry act passed by the legislature of the Territory, 1905.

No. 250, May 15.—Opinion to superintendent of insurance on the construction of section 12 of insurance department law, passed February 9, 1905.

No. 251, May 16.—Opinion to C. V. Safford, traveling auditor, on the question of the right of the Territorial board of equalization to fix the values of agricultural lands for assessment purposes, etc.

No. 252, May 19.—Opinion to Page B. Otero, game and fish warden, as to whether new commissions shall be issued to deputies; on question of right of deputy to make arrests and prosecute offenders outside the limits of his own county; also as to eligibility of mounted police to act as deputies; also on duties of deputies in making arrests where resistance is offered.

No. 253, May 22.—Opinion to Hiram Hadley, superintendent public instruction, on question of authority of county school superintendents to change school districts and establishing new districts.

No. 254, May 25.—Opinion to Hiram Hadley, superintendent public instruction, on question of notifying boards of school directors to have posted list of names of poll-tax payers, although the date set for same has passed.

No. 255, May 27.—Opinion to Col. Max Frost on question regarding time of payment of deficiency accounts.

No. 256, June 12.—Opinion to C. V. Safford, Territorial traveling auditor, on the question of the assessment of sheep in counties where they range, but in which county their owner does not reside.

No. 257, June 15—Opinion to Hiram Hadley, superintendent public instruction, defining position of newly formed school district in relation to receiving school funds; on status of district which fails to hold school at least three months in each year, and on question of removal of directors so failing to perform their duty.

No. 258, June 15.—Opinion to Hiram Hadley, superintendent public instruction, as to authority of county commissioners to pay county school superintendent of Eddy County increased salary, as provided by "Law by limitation, March 14, 1905," before Eddy County has been classified.

No. 259, June 16.—Opinion to board of control, commission of irrigation, on status of chapters 102 and 111, session laws of 1905.

No. 260, June 17.—Opinion to C. T. Brown, secretary and treasurer school of mines, on status of chapter 112, session laws 1905, and on question of field expenses for school of mines.

No. 261, June 20.—Opinion to A. A. Keen, commissioner of public lands, on status of chapter 90, session laws of 1905, and on rights of ex-United States soldiers.

No. 262, June 20.—Opinion to W. G. Sargent, Territorial auditor, on question of authority to pay expenses of board of control, commission of irrigation, and authority to issue warrant to A. Seligman as a member thereof.

No. 263, June 20.—Opinion to Arthur Seligman, secretary commission of irrigation, on question of whether commissioner of public lands is authorized to act as secretary of board of control, commission of irrigation.

The following applications for requisitions from other States and Territories for the rendition of criminals have been passed upon since the last report of this office:

From the governor of Missouri: For William Dooley, charged with first-degree murder; granted July 28, 1904.

From the governor of Arizona: For William Sessions, charged with rape; granted August 26, 1904. For Charles Manning, charged with embezzlement; granted September 1, 1904.

From the governor of Texas: For Charles Smithers, charged with horse stealing; granted September 26, 1904. For F. H. Hart, charged with forgery; granted October 21, 1904.

From the governor of Arizona: For William Phillips, charged with grand larceny; granted November 4, 1904.

From United States district judge, southern district of Indian Territory: For James Black, John Murphy, and John Black, charged with attempted train robbery; granted November 9, 1904.

I have passed upon the form of all bonds submitted by the various officers and boards of the Territory.

On April 1 Thomas B. Catron brought suit against W. G. Sargent, Territorial auditor, and J. H. Vaughn, Territorial treasurer, enjoining them from paying out funds to flood sufferers, as provided by the "Martin relief bill," passed at the last session of the legislature. The same was argued in the supreme court and is still under advisement.

On Wednesday, June 28, I, at your request, attended the hearing of the charges brought against the county officials of Bernalillo County, in which they are charged with malfeasance in office and misappropriation of county funds. My appearance in this case was simply in an advisory capacity.

There remain on the docket at this date but 11 criminal cases to be disposed of at the next term of the supreme court. These cases go over to the next term by reason of the court having granted time to file briefs, etc.

I have served as a member of the committee for the examination of applicants for admission to practice law in the Territory, and at the last examination two applicants successfully passed the examination and were admitted to practice.

In conclusion I would remind you that I did not take up the duties of attorney-general until the 19th day of November, 1904, and all matters pertaining to the office prior to that date were acted upon by my predecessor, Gen. Edward L. Bartlett, now deceased.

Very respectfully, GEO. W. PRICHARD, *Attorney-General.*

REPORT OF THE SUPERINTENDENT OF THE PENITENTIARY.

Financial statement from July 1, 1904, to June 30, 1905.

General maintenance fund:		
To balance June 30, 1904	$4,864.17	
To amount received from apportionments	25,357.35	
By disbursements		$24,338.10
By balance		5,883.42
	30,221.52	30,221.52
Penitentiary salary fund:		
To balance June 30, 1904	3,049.84	
To amount received from apportionments	11,140.13	
By disbursements		13,179.84
By balance		1,010.13
	14,189.97	14,189.97
Convicts earnings fund:		
To balance June 30, 1904	440.01	
To amount paid treasurer by H. O. Bursum	13,729.70	

Convicts earnings fund—Continued.		
To amount received from apportionment	$8,000.00	
By disbursements		$21,789.27
By balance		380.44
	22,169.71	22,169.71
Permanent improvement fund:		
To balance June 30, 1904	12.33	
To amount received from apportionments	3,360.00	
By transfer board of public lands		1,285.71
By disbursements		1,972.06
By balance		114.56
	3,372.33	3,372.33
Penitentiary income fund:		
To balance June 30, 1904	30.10	
To amount received from apportionments	849.53	
By disbursements		856.38
By balance		23.25
	879.63	879.63
Penitentiary commissioners fund:		
To balance June 30, 1904	640.71	
To amount received from apportionments	1,266.98	
By disbursements		1,867.80
By balance		39.89
	1,907.69	1,907.69
Scenic route fund:		
To amount received from apportionments	4,500.00	
To old balance	2.82	
By disbursements		4,484.08
By balance		18.74
	4,502.82	4,502.82

RECAPITULATION.

Received from all funds as follows:		
General maintenance fund	$30,221.52	
Penitentiary salary	14,189.97	
Paid treasurer by H. O. Bursum	14,169.71	
Convicts earnings, appropriation	8,000.00	
Permanent improvement	3,372.33	
Penitentiary income	879.63	
Penitentiary commissioners	1,907.69	
Scenic route	4,502.82	
Disbursed from all funds as follows:		
General maintenance fund		$24,338.10
Penitentiary salary		13,179.84
Convicts earnings fund		21,789.27
Permanent improvement		3,257.77
Penitentiary income		856.38
Penitentiary commissioners		1,867.80
Scenic route		4,484.08
By balance June 30 in all funds as follows:		
General maintenance		5,883.42
Penitentiary salary		1,010.13
Convicts earnings		380.44
Permanent improvement		114.56
Penitentiary income		23.25
Penitentiary commissioners		39.89
Scenic route		18.74
	77,243.67	77,243.67
To balance June 30, 1905	7,470.43	

Very respectfully, your obedient servant,

H. O. BURSUM, *Superintendent.*

REPORT OF THE COMMISSIONER OF PUBLIC LANDS.

I have the honor to submit the following report of this office for the six months ending June 30, 1905.

Leases of common school lands approved by the Secretary of the Interior for six months ending June 30, 1905.

County.	Number of leases.	Amount of rental.	County.	Number of leases.	Amount of rental.
Bernalillo	2	$68.50	Rio Arriba	3	57.60
Chaves	37	1,545.70	Roosevelt	22	630.70
Colfax	54	1,945.85	Sandoval	1	32.00
Dona Ana	8	254.00	Santa Fe	4	115.40
Eddy	26	773.60	San Juan	8	203.86
Grant	25	1,093.10	San Miguel	22	368.00
Leonard Wood	17	262.40	Sierra	12	233.00
Lincoln	17	544.00	Socorro	29	591.20
Luna	8	249.60	Union	153	3,329.20
McKinley	1	64.00	Valencia	9	166.40
Mora	26	512.70			
Otero	8	259.20	Total	504	13,517.61
Quay	12	217.60			

Unapproved leases of common school and institutional lands on file in the Department of the Interior at Washington, D. C.

	Number of leases.	Amount of rental.
Common school	22	$422.40
Institutional	11	204.40
Total	33	626.80

Applications to lease common school lands, leases not yet completed by applicants.

	Number of applications.	Amount of rental.
Common school	13	$206.80

Institutional land leases for the six months ending June 30, 1905.

Name.	Leases.	Amount.
Insane Asylum	4	$70.00
Miners' Hospital	2	34.80
University	1	32.00
University Saline	1	525.00
Total		661.80

Deferred payment notes on institutional land leases.

[Payments for six months ending June 30, 1905.]

Miners Hospital	$32.00
Insane Asylum	71.20
Total	103.20

Interest on deferred-payment notes, account institutional leases and right of pasturage.

Receipt number.	Name.	Amount.
6859	H. L. Newman	$13.18
6909	Pennsylvania Development Company	200.00
6984	E. Allen	1.28
7081	E. S. Pennebaker	18.00
7121	Pennsylvania Development Company	200.00
7190	R. S. Benson	42.73
	Total	475.19

Permits for right of pasturage.

[Payments made thereon for the six months ending June 30, 1905.]

Name.	Number.	Amount.
E. S. Pennebaker	2	$326.90
R. S. Benson	10	1,282.95
W. H. Greer	20	556.36
J. H. Charless	21	800.00
W. K. Irwin	23	43.20
Total	.....	3,009.41

United States land office fees, account selections of Territorial lands by the United States land commission in accordance with Congressional act June 21, 1898, for six months ending June 30, 1905, as evidenced by receipted vouchers numbered 463, 467, and 480, on file, paid through the Territorial auditor's office.

Institutions.	Acreage.	Amount fees.
Water reservoirs for irrigating purposes	35,891.57	$452.00
Improvement of the Rio Grande in New Mexico	4,880.21	62.00
Total	40,771.78	514.00

The historical building known as "The Palace" in the city of Santa Fe.

RECEIPTS.

1904:	
P. A. F. Walter, P. M., three months' rent	$200.00
D. M. White, four months' rent	52.00
N. B. Laughlin, one month's rent	13.00
1905:	
P. A. F. Walter, P. M., six months' rent	400.00
D. M. White, four months' rent	52.00
N. B. Laughlin, five months' rent	65.00
Santa Fe Water and Light Company, stable rent	25.00
Total	807.00

Territorial treasurer's receipts, Nos. 52 to 57, inclusive, $807.

Moneys deposited with the Territorial treasurer by the commissioner of public lands, as shown by his official receipts on file.

1905.			
Feb. 1.	Common school income fund	$1,485.66	
	University income fund	416.96	
	Agricultural College income fund	429.79	
	Normal School, Silver City, income fund	43.00	
	Normal University, Las Vegas, income fund	43.00	
	School of Mines income fund	36.00	

1905.				
Feb.	1.	The Palace income fund	$213.00	
		Blind Asylum income fund	41.00	
		Deaf and Dumb Asylum income fund	37.00	
		Water reservoirs for irrigation purposes, income fund	13.18	
		Miners' Hospital income fund	46.28	
		Insane Asylum income fund	71.20	
		Public buildings at capital income fund	436.20	
				$3,312.27
Mar.	1.	Common school income fund	273.30	
		University income fund	100.00	
		The Palace income fund	52.00	
				425.30
Apr.	1.	Common school income fund	1,378.00	
		University income fund	1,200.00	
		Normal School, Silver City, income fund	35.51	
		Normal University, Las Vegas, income fund	35.51	
		Military Institute income fund	71.08	
		The Palace income fund	251.00	
		Reform School income fund	9.60	
		Blind Asylum income fund	104.40	
		Water reservoirs for irrigation purposes, income fund	800.00	
		Miners' Hospital income fund	70.80	
		Penitentiary income fund	61.20	
				4,017.10
May	1.	Common school income fund	213.80	
		University income fund	422.83	
		Agricultural College income fund	133.53	
		Normal School, Silver City, income fund	43.00	
		Normal University, Las Vegas, income fund	43.00	
		School of Mines income fund	36.00	
		The Palace income fund	65.00	
		Blind Asylum income fund	41.00	
		Deaf and Dumb Asylum income fund	37.00	
				1,035.16
June	5.	Common school income fund	11,556.07	
		University income fund	32.00	
		The Palace income fund	13.00	
		Miners' Hospital income fund	13.20	
		Insane Asylum income fund	50.00	
				11,664.27
June	30.	Common school income fund	1,568.25	
		University income fund	13.88	
		University saline fund	525.00	
		Agricultural College income fund	14.32	
		The Palace income fund	213.00	
		Miners' Hospital income fund	21.60	
		Insane Asylum income fund	20.00	
		Public buildings at capital income fund	14.53	
				2,390.58
		Total		22,844.68

Moneys deposited with the Territorial treasurer by the commissioner of public lands, as shown by his official receipts on file, Nos. 52 to 57, inclusive, for six months ending June 30, 1905.

Common school income fund	$16,475.08
University income fund	2,185.67
University saline income fund	523.00
Agricultural College income fund	577.64
Normal School, Silver City, income fund	121.51
Normal School, Las Vegas, income fund	121.51
School of Mines income fund	72.00
Military Institute income fund	71.08
The Palace income fund	807.00
Reform School income fund	9.60

Blind Asylum income fund	$186.40
Deaf and Dumb Asylum income fund	74.00
Water reservoirs for irrigating purposes, income fund	813.18
Miners' Hospital income fund	151.88
Insane Asylum income fund	141.20
Public buildings at the capital, income fund	450.73
Penitentiary income fund	61.20
Total	22,844.68

RECAPITULATION

RECEIPTS.

Leases of common school lands, approved by the honorable Secretary of the Interior	$13,517.61
Leases on file in the Interior Department awaiting approval	626.80
Incomplete applications	206.80
Rentals, account Palace building	807.00
Leases on institutional lands	661.80
Permits for right of pasturage on institutional lands	3,009.41
Deferred payment notes, account common school lands	2,866.20
Deferred payment notes, account leases on institutional lands	116.20
Interest on deferred payment notes, account common school lands	73.27
Interest on deferred payment notes, account leases on institutional lands	475.19
Right of way over university lands	100.00
Timber sales	1,200.00
Assignment fees, account common school leases	18.00
Total	23,678.28

DISBURSEMENTS.

Deposited with Territorial treasurer	$22,844.68
Cash in banks	833.60
Total	23,678.28

Statement of lands granted to the Territory of New Mexico, to be selected on behalf of said Territory for the use and benefit of the several Territorial institutions.

Institution.	Granted.	Selected.	Yet to be selected.
	Acres.	*Acres.*	*Acres.*
University of New Mexico	111,080	111,062.48	17.52
Do	(a)	81,556.49	.....
Public buildings at the capital of New Mexico	32,000	31,473.91	526.09
Agricultural College	100,000	99,231.98	768.02
Water reservoirs for irrigation purposes	500,000	386,772.16	113,227.84
Improvement of the Rio Grande in New Mexico	100,000	83,129.04	16,870.96
Insane Asylum	50,000	49,968.40	31.60
School of Mines	50,000	49,970.25	29.75
Deaf and Dumb Asylum	50,000	49,817	183
Reform School	50,000	50,000.18	.....
Normal School	100,000	99,968.89	31.11
Institute for the Blind	50,000	49,999.88	.12
Miners' Hospital	50,000	49,982.56	17.44
Military Institute	50,000	49,973.54	26.46
Penitentiary	50,000	49,992.32	7.68

(a) All saline land.

Respectfully submitted.

ALPHEUS A. KEEN,
Commissioner of Public Lands.

REPORT OF THE TERRITORIAL IRRIGATION ENGINEER.

Agreeable to your instructions I have the honor to respectfully submit the first report of this office embodying my views on the irrigation law as enacted by the last general assembly and approved by your excellency.

The short time that has passed since my appointment as Territorial irrigation engineer—four months—and which has been taken up almost entirely with my duties as locating agent, United States land commission, I offer as an apology for my inability to do justice to an act which not only marks an epoch of overwhelming importance in the history of New Mexico, but is in strict accordance with the enlightened views of our President, who has widely proclaimed that the "Forest and water problems are, perhaps, now the most vital internal questions of this country." If the water problem be one of the most vital internal questions of the country at large it is a hundredfold more so to the Territory of New Mexico.

By reason of the fact that New Mexico has no topographical maps, and little of public use has been done by the General Government in a hydraulic way, the Territorial irrigation engineer necessarily approaches his duties with a consciousness of his nudity as to data upon which to base an opinion, hence the collection of data is the first step in the line of his duties.

By reason of the long drought that preceded the last floods, some people began to fear that the climatic conditions of the Territory were undergoing a radical change. Let them fear not, for history and statistics have long ago established the fact that although the weather will sometimes swing far out of line, it will most assuredly swing back again, and the average rainfall on a district of country, in a series of years, is almost a constant quantity. Hence, always look out for floods to follow droughts, for time, observation, experiment, and experience have proven that nature will restore the equilibrium in her own good time and in her own sweet way, which man is powerless to command, powerless to direct.

To-day we have as much rainfall in New Mexico as the day it received its first footprint from the intrepid, irresistible Spaniard. Why is it then, it might be asked, that the Rio Grande and many other streams are now, much of the time, only wide, dry arroyos, whereas history tells us when the country was first occupied by the Spaniards they were deep-running streams? The explanation is simple: No more water passes down a stream where the cross section is wide than where it is narrow, and no more where it is deep than where it is shallow, only the velocity of it undergoes a variation, and obstructing a river with sand or any porous material will never stop its onward march to the sea. The pent-up dead waters of a lake may be drained, but no man ever lived who drained a river. Its waters fall from the sky on its drainage area, rush to collection and on to the sea, and periodically all returns through evaporation to go through exactly the same process again.

The Rio Grande flows on a false bottom made by the débris of several centuries wrought by the iron-shod plow and other causes. Sink a well in times of extreme drought in its bed and there will be found its waters moving on but more slowly. Sometimes this hidden river will be seen cropping out in places; hence we here have a point of interest which this wise irrigation law might take hold of and utilize. Dam up this underground seepage river in places where its valley is narrow and the water will be forced to rise, and it will be converted into a series of reservoirs all the way to El Paso. Do likewise with other streams where practicable and similar results will follow. In other words, conserve the underflow and flood waters of streams and rivers, build storage reservoirs wherever possible, teach the irrigators the economic use of water, and when that has been done the irrigation question, so vital to the people of this Territory, will have been solved.

Section 17 of the law sets forth and defines the technical and practical duties of the Territorial irrigation engineer, certainly in the most elaborate manner, covering most fully the entire field of irrigation engineering, the demands of which, if required to be accomplished upon short notice, would prove impracticable, in fact, impossible, as even an approximate knowledge of the average volume of the flow of a stream requires a series of gaugings extending over a long period of time. However, as the United States Government has been making some observations along this line in this country, I will avail myself of what has been done, which I fear, for this Territory, is none too much, particularly on the small streams.

The act of Congress of June 21, 1898, gave to the Territory for the institutions, now under the supervision of the board of control, of which the Territorial irrigation engineer is a member, the following, to wit:

	Acres.
Water reservoirs for irrigating purposes	500,000
Improvement of the Rio Grande in Mexico	100,000

Of the above there has been located in the different land districts the following, to wit:

Water reservoirs for irrigating purposes:	Acres.
Santa Fe land district	50,043.10
Las Cruces land district	132,951.25
Roswell land district	76,166.86
Clayton land district	126,362.48
Total	385,523.69
Leaving to be located	114,476.31

Improvement of Rio Grande in New Mexico:	
Santa Fe land district	6,914.27
Las Cruces land district	38,752.41
Roswell land district	37,622.36
Total	83,289.04
Leaving to be located	16,710.96

With the foregoing remarks as to the workings of this office in the short time that it has been in existence, I will close this report, referring slightly again to the overwhelming importance of the conservation of water now being wasted throughout the Territory with almost criminal indifference. Even right here at the capital city have the winter snows been allowed to pass off in great abundance, and now orchards, gardens, and fields are withering for want of water, and this sort of indifference has been going on for years and years.

Respectfully submitted.

DAVID M. WHITE, *Territorial Irrigation Engineer.*

REPORT OF THE ARTESIAN-WELL SUPERVISOR.

There were 325 wells in this district covered by the first inspection. The pressures of these wells vary from one-half pound to 72 pounds per square inch and the flow from 15 gallons to 3,000 gallons per minute. Seventy-eight of these wells were not capped when inspected. Notice was served on the owners that the wells must be capped at once, and the major portion of them have been capped since that time.

Respectfully submitted.

W. A. WILSON, *Artesian-Well Supervisor.*

REPORT OF THE SUPERINTENDENT OF INSURANCE.

The law creating this department became effective on February 9 of the present year, and I qualified as superintendent of insurance on the 3d day of March, 1905. Under the laws of the Territory, prior to the enactment of the present statutes, there were 66 insurance companies qualified and doing business in the Territory during last year. Of these 4 have withdrawn from the Territory and 58 have come in and qualified duly under the said statute now in force and under the rules of my office. It is expected that the other 4 will come in at an early date. Two new companies have qualified to do business in the Territory in the present year, one being a fire insurance company and the other a life insurance company.

The total income through said department, as collected from fees from the said companies that have qualified to do business in said Territory, to date, is $6,979.

House bill No. 73, of the thirty-sixth legislative assembly of the Territory of New Mexico, provides $2,400 per annum salary to be paid the superintendent. Out of this the sum of $1,187.10 has been disbursed, and the sum of $553.35 has been expended for clerk hire. By the appropriation bill of the same legislative assembly the sum of $1,200 was appropriated for the purpose of furnishing the office, and the amount of $526.96 has been expended, as evidenced by legal vouchers. Under section 12 of the act creating the office of superintendent of insurance, by the same legislative assembly, a further sum of $1,200 was set aside for the uses of this department, and of this fund the sum of $214.05 has been expended to date, as evidenced by proper accounts and legal vouchers.

The number of life insurance policies in force in the Territory December 31 was 6,874, valued at $16,918,037.38. The number issued during the year was 1,768, valued at $3,756,841.52. The amount of premiums received by all companies during the year was $551,714.33, and the losses paid aggregated $150,975.79.

The aggregate number of risks written by fire insurance companies in the Territory during the year 1904 was $18,168,624.98. The premiums received during the year were $323,224.60, and the losses paid amounted to $201,696.44.

The premiums received by casualty and miscellaneous insurance companies in the Territory during the year 1904 were $50,028.84, and the losses paid amounted to $24,471.14.

Very respectfully, yours,

PEDRO PEREA,
Superintendent of Insurance.

REPORT OF THE GAME AND FISH WARDEN.

During the months of July, August, September, and October, 1904, I spent most of the time in the Taos, Mora, and Santa Fe ranges gathering data regarding the conditions of game and fish. I found everything greatly improved. Deer, turkey, and grouse are more numerous than for years past. The conditions of the trout streams at that time were excellent. The recent heavy floods, however, destroyed a great many fish, and I have made application to the Government for 225,000 trout for the purpose of restocking the main Pecos River and its branches. These trout, I am informed, will reach here with the Government fish car some time in October or September, 1905.

There are still a few ptarmigan in the Taos Range, and several large flocks of wild pigeons in northern Taos and Rio Arriba counties.

Under my reappointment of March 2, 1905, new commissions had to be issued to deputies. I was obliged to reorganize the entire force.

So far I have appointed 52 deputies, including the forest rangers and the New Mexico mounted police. As the oaths of office are slow in coming in I am unable to tell just at present how many men are in actual service. I have made two visits to the Pecos River country recently, and while plenty of bear, deer, turkey, and grouse are reported the condition of the trout streams is bad. I have recently returned from a visit to the lower country, where I posted notices in different localities and took occasion to look up the pheasants placed near Bernalillo a short time ago. They seem to be doing well. I have also arranged with the Government Fish Commission to restock the Chama, Brazos, San Anton, and other streams this year. I have discovered many prosperous colonies of beaver in the northern part of the Territory, and have issued special instructions to deputies to protect them rigidly, as provided by the new law.

The appropriation by the last assembly allowing me funds for printing, etc., has enabled me to place the game and fish laws of the Territory before the public in neat pamphlet form, instead of the old paper posters. As far as I am able to learn there have been few, if any, violations of the game law this year. The conditions regarding game are better now than for years. There are several fine herds of antelope in the southern part of the Territory now, where a few years ago there were none—due, no doubt, to the strict enforcement of the laws.

I have corresponded with the Texas authorities with a view to securing their cooperation in protecting the few remaining mountain sheep now ranging in the Guadalupe Mountains on the line between Texas and New Mexico. This office is in receipt of letters from the Department of Agriculture, Biological Survey, Washington, D. C., complimenting the Territory very highly on its efforts in behalf of game protection and preservation.

In conclusion I beg to state that if the new laws are strictly enforced our Territory will soon be in a position to offer special inducements to sportsmen for which they can consistently charge a license (nonresident at least), thus taking the burden of protecting our game and fish off the general taxpayer.

I have the honor to be, very respectfully,

PAGE B. OTERO,
Game and Fish Warden.

REPORT OF THE ADJUTANT-GENERAL.

I have the honor to submit the following report of the operations of this department for the years 1903–4.

Having but recently been appointed adjutant-general the data for this report must necessarily be secured from records in this office, and not from a personal knowledge of the conditions as they existed prior to my appointment.

The aggregate strength of the National Guard in the month of June, 1903, was 398, made up by organizations stationed as follows, viz: Company A, Lascruces; Company D, Silver City; Company F, Santa Fe; Company G, Albuquerque; Company H, Socorro; Company K, Las Vegas; all of the First Regiment of Infantry, band First

Regiment of Infantry, regimental headquarters at Albuquerque; Troop A, First Squadron of Cavalry stationed at Las Vegas; band First Squadron of Cavalry stationed at Santa Fe; squadron headquarters at Las Vegas.

The several organizations of the National Guard were inspected by Capt. Kerby Walker, Fourteenth U. S. Cavalry, beginning at Santa Fe, May 18, and closing at Lascruces, May 22, 1903. The total number of officers and men present at inspection being 325, not including Company G, at Albuquerque, that company at the time being disorganized, discharges from various causes having reduced the strength of the company to about 15 men.

The inspections at Las Vegas and Silver City were made in the daytime, which made it difficult for the men to get away from their business affairs in order to be present. The attendance at both places under the circumstances was very commendable. The report of the inspector has not been furnished this office.

Applications were received from Deming and Portales for the organization of new companies, but, it being learned upon investigation that there w not a sufficient number of young men of eligible ages permanently residing at those places to maintain military organizations, it was decided not to organize them.

During the fall of this year the National Guard was armed with Springfield magazine rifles for the infantry and Springfield magazine carbines for the cavalry. In addition to the new arms, all organizations were equipped with new tentage, field ranges, etc., of the latest pattern. New targets and target material was also issued to the companies for their use in target practice.

The report of the annual inspection of the military institute at Roswell, which was conducted by my predecessor, Gen. W. H. Whiteman, during the latter part of March, is substantially as follows:

The annual inspection of the New Mexico Military Institute, required by law, was made on the 21st day of March, 1903, and the conditions of that institution were found to be in admirable shape. The inspection of the institute was thorough, and comprised an examination of the buildings, rooms, bedding, kitchen and dining departments, and arms and equipments. The students were questioned as to the treatment they received, and from all the same answer was received that they were entirely pleased with the institution and their instructors; that they had no complaints, and desired to return the next year.

The superintendent, Col. James W. Willson, and his corps of assistants seemed to be men of ability and character and well fitted for their work. The school is growing in popular favor, as is shown by the large attendance, which now has an enrollment beyond the capacity of the buildings and a larger number than can be cared for properly. All sorts of shifts have to be made to accommodate the students. Temporary quarters are found in some of the buildings erected for a gymnasium for some and in buildings erected for quarters for the officers for others, and it is very apparent that if the school is to retain its popularity additional buildings will have to be constructed for quarters for the students.

The honor graduates in the class of 1903 were Bradley Morris Thomas, of Santa Fe, and Bruno Totzek, of Chaves County, who received commissions as second lieutenants in the National Guard, as provided by law.

The condition of the National Guard, the field service performed by it, and inspections conducted during the year of 1904 was as follows: During the spring and summer of this year the National Guard consisted of 5 companies of infantry and band and 1 troop of cavalry and band, aggregating 365 officers and men, located as follows: Company A, Las Cruces; Company D, Silver City; Company E, Albuquerque; Company F, Santa Fe; Company G, Albuquerque; First Regiment band, Albuquerque; regimental headquarters, Albuquerque; Troop A, Las Vegas; squadron headquarters, Las Vegas; First Cavalry band, Santa Fe.

During the year all of the companies of infantry and the troop of cavalry were in good condition and growing in efficiency, with the exception of Company A, of Las Cruces. This company at the close of the year was in a partially disorganized condition, owing to the fact that the captain of the company had resigned and the second lieutenant had left the Territory and suitable officers had not been found to take their places.

During the month of October a company of infantry was mustered into the service at Roswell, which was designated Company B, and assigned to the First Regiment of Infantry.

An encampment was held near Las Vegas from August 8 to 15, in which the following organizations participated: Companies D, E, F, and G, First Regiment; the First Regiment band, and regimental headquarters; Troop A, First Squadron of Cavalry, and squadron headquarters.

The camp was a delightful one, and a better camp site would be difficult to find within the Territory. The health of officers and men was unusually good. The daily routine of camp duty, drill, and maneuvers was strenuous, and kept officers and men employed during the most of the day. The improvement made by the men in the short period of the encampment in drill and soldierly bearing was quite marked, and it was a matter of regret upon the part of everyone that the encampment could not have continued for one week longer. The infractions of discipline were few and of a minor character, and, considering that it was the first time the men had been brought under the strict military discipline of camp life, their conduct was remarkably good.

Capt. S. P. Vestal, Seventh U. S. Cavalry, represented the War Department at this camp, and the considerate judgment and good sense of this officer commended him to all. His attitude throughout was that of a patient, considerate instructor of officers and men in their military duties. He called attention to mistakes made in a way that gave no offense, and tactfully suggested the proper way, with explanations that carried to all the conviction of his accomplishments as a soldier and gentleman and that they had been benefited by his presence.

At the opening of the encampment there was on hand of the Territorial appropriation for the support of the National Guard about $60. The Government appropriation could only be used for the pay of officers and men, subsistence, and transportation. In mobilizing the different organizations of the National Guard in camp there are many little expenses incident thereto that could not be paid out of the allotment of the Government. This was managed in some manner without creating any indebtedness against the Territory.

The Government allowance for subsistence was 20 cents per day per man, but it appears that on the 8th of August some of the men en route to the encampment were delayed by washouts, and it was necessary to furnish them meals at eating houses along the way at an expense largely in excess of 20 cents per day. The report of Gen. W. H. Whiteman states that notwithstanding the unexpected expense of subsisting the men at eating houses it was thought that the total expense for subsistence would come within the allowance. This I believe proved true.

The several organizations of the National Guard were inspected by Capt. W. S. Valentine, Fifth U. S. Cavalry, from April 21 to 27. As I am unable to locate a copy of his report in the office, I am unable to state what the conditions were as found by him or to advise as regards his recommendations.

From the short time in which I have been in this position I have learned that the appropriation from the Territory for the support of its National Guard is wholly inadequate. The appropriation is made in two different funds—one for the support of the guard, the other for the payment of armory rents. The two funds placed together would not pay the armory rents alone. The fund for the support of the guard must be used to pay the running expenses of the adjutant-general's office, to pay freight charges for distributing stores to the different organizations of the National Guard (the stores being laid down in Santa Fe by the Government), to furnish lights and fuel for armories, and any other expenses which may come up outside of armory rent.

During my service in the National Guard of the Territory I am unable to recall a single instance in which there has been any money furnished for purchasing fuel for armories, for the reason that it has been absolutely impossible to use any money for this purpose on account of the fund being continually exhausted in paying other accounts charged against it.

The matter of postage alone in the adjutant-general's office is a considerable item. The large and increasing correspondence with the War Department, which in many cases requires writing letters to officers all over the Territory, draws very heavily upon this fund.

It is respectfully recommended that the appropriation for the National Guard be increased to at least $5,000 per year. Officers should not be asked to perform the large and increasing duties in maintaining their organizations unless some assistance is given them, and the least that could be done would be to pay for the rent of armories, the lights and fuel of the same, which under the appropriation at present is absolutely impossible.

Respectfully submitted.

A. P. TARKINGTON, *Adjutant-General.*

REPORT OF THE TERRITORIAL LIBRARIAN.

The law library has been added to until now it makes a very satisfactory working library. Of the more important additions during the past year are a set of New Hampshire Reports and a reprint of English Reports, which will be complete in

about 150 volumes. This will comprise a full set from the "Yearbooks" down to Law Reports (1865) and will furnish all that is necessary in that line of reports.

There are still lacking nearly full sets of North Carolina and Louisiana. The other sets of reports are quite complete, excepting rare volumes which are out of print and can not be obtained. The trustees will soon begin to purchase text-books, of which at present there is only a meager set of old editions of old books, most of which are not very useful to-day. However, the encyclopedias with their late editions coming out continuously fill a long-felt need of former years. The library is on the subscription lists of all the important encyclopedias that are now being published.

The total number of books in the law library proper is 6,954, embracing statutes, reports, and digests from every State in the Union, as well as various English and miscellaneous works.

Respectfully submitted.

ANITA J. CHAPMAN, *Territorial Librarian.*

REPORT OF THE CAPTAIN OF THE NEW MEXICO MOUNTED POLICE.

In compliance with your recent request for a report on the condition and doings of the Territorial mounted police force since their organization, I herewith respectfully beg to submit the following:

CREATION AND ORGANIZATION.

By an act of the thirty-sixth legislative assembly there was created a company of mounted police, to consist of 1 captain, 1 lieutenant, 1 sergeant, and 8 privates, whose duties have been to apprehend criminals of all kinds and fugitives from justice, and to in general keep careful watch over the peace and welfare of the Territory of New Mexico. Immediately after the passage of this act steps were taken looking toward organization, and careful selection was made in securing trustworthy, brave, active, and energetic men to do the actual work.

On my appointment from you, and after the members had been selected, pursuant to your direction, as provided under said act of creation, the men were assembled in Santa Fe and administered the oath of office, and equipment having been provided them they were in a very short time ready for active service. Little, however, was done for the first two or three months, owing to lack of means of transportation and the members not being thoroughly cognizant of the duties required of them. However, as hereinbelow given, you can note from the arrests detailed just about what has been done.

The men have been kept distributed in the various parts of the Territory where I have found that they could do the most good. They are now and have been for some time past kept extremely busy, and the results will speak for themselves. I have received letters from different parts of the Territory commenting on the benefit that has, even in this short time, resulted to the different communities wherein any of the members may have been stationed. Cattle and horse thieving is now less than previously; criminals have been apprehended—many, as far as I can ascertain, have left or are leaving the Territory through fear of capture. Fugitives have been caught, held, and returned; and while there is still much to be done it is practically impossible to have the men everywhere when they are needed, for the force is not sufficient at this time for the area they are required to cover.

REPORTING WHEREABOUTS.

Every member of the force is required to send in to headquarters at the end of each week a report from himself, stating the day of the month where he was, whether traveling or stationed, and what occurred, whether arrests were made, etc. This has been complied with to a great extent. However the men are days away from a post-office, railroad, or telegraph, and it therefore becomes impossible for them at times to forward their reports promptly.

STATEMENT OF ARRESTS.

There has been reported by the various members up to the present time the following arrests:

By Private Herbert McGrath: Charged with aiding and abetting unlawful entry of Chinamen into the United States, C. A. Wise, A. N. Howel, W. B. Aken, and J. Goddard; arrest of one Miguel Fierra; arrest of one Charles Durword, horse stealing; arrest of one Dean Lamb, horse stealing; arrest of one Fred. B. Malone, cattle stealing; arrest of one Lod Littleton, shooting up town of Hachita; arrest of one Francisco Aldazo, attempted murder.

By Private W. E. Dudley: Arrest of one Sam Ballard, larceny of stock; arrest of one L. Shylisky, insanity; arrest of one Hudson, alias Smith, for rape, fugitive from Kansas; one arrest in Lincoln County, party making complaint refused to prosecute.

By Private George Elkins: One arrest for forgery.

By Privates Meyers and Huber: One Miguel Fernandez, shooting at woman.

By Private C. R. Huber: One arrest and return of Casamiro Chacon, escaped convict; arrest of one Jose Cano, for horse stealing and murder; arrest of one Donaciano Quesnel, at Taos, by order of the governor.

By Private L. F. Avent: Arrest of one Robert Russie, house breaking; arrest of one for cow stealing; arrest of two for cattle stealing. These were caught red-handed and in the act of killing beef. A running fight ensued—there being five of the thieves—upward of twenty-five shots being fired.

By Lieutenant Baca and Sergeant Lewis: Arrest of two for kidnaping, afterwards discharged.

It often becomes necessary to detail one or more of the members on special detective work, in which case much time is spent with apparently no results, as the distance covered is at times large, the movements of the men secret, but the results obtained are very gratifying.

Stolen property has been recovered in many instances.

GENERAL REMARKS.

In one or two cases conflict with county peace officers has been noted; for instance, in one of the weekly reports a member makes the statement to the effect that he spent several days investigating a case wherein two individuals were arrested with meat in their posession supposed to have been stolen, and it was found that the arrested parties on a consideration of $20 each paid to the sheriff of the county were released from custody. There were witnesses to the transaction.

The men are kept constantly on the ride, and are covering the known bad portions of the Territory as fast as time and distance will permit. The greater part of their work has been along the line of apprehending cattle thieves, and in this direction the moral effect and influence of even the presence of a mounted police has been keenly felt.

Of the original members appointed, two, William Taylor and Francisco Apodaca, failed to qualify owing to various personal motives, and one other, George Elkins, resigned on July 1. This has served to a certain extent to retard the movements and final effectiveness of the force. All vacancies have, however, since been filled by C. R. Huber, L. F. Avent, and Robert G. Putman.

The duties of a mounted police are hard, and only men of staying qualities can withstand the hardships imposed on them, as they are required at times to ride practically all night, sleep in the open whenever necessary, and always "to keep their life in their hands."

It will be only a question of time when the mounted rangers of Texas and Arizona will work hand in hand with those of New Mexico after the sister State and Territory become aware of the fact that we are willing to accommodate and cooperate with them, and I predict that in a very short time cattle stealing and such similar crimes, as well as those of greater magnitude, will be reduced to a much lower degree than it is even at present, and no corner of New Mexico can be commented upon as being the favored resort for criminals who may congregate from all parts of the Union or be crowded out of Texas or Arizona.

The expenses of organization, which includes the cost of uniforms, firearms, stationery, printing, office expenses, etc., up to the 1st day of August, has amounted to $4,664.30, which also includes the payment of salaries of the members. An itemized statement of these expenses are as follows:

March, 1905	$54.00
April, 1905	1,014.60
May, 1905	501.01
June, 1905	993.94
July, 1905	2,100.75
Total	4,664.30

That there have been other arrests or captures by several of the members, I know to be a fact, but as I previously said, they are at such great distances from communication, that they have not as yet been able to make a report to headquarters.

Respectfully submitted.

JOHN F. FULLERTON,
Captain, New Mexico Mounted Police.

REPORT OF THE BOARD OF EQUALIZATION.

The board has held its regular semiannual meetings as provided by law in January and September.

At its September, 1904, meeting—the meeting designated by law, at which appeals taken by individuals from the action of boards of county commissioners or by the Territory on behalf of taxpayers are heard and determined—this body had but 13 appeals certified up from the several counties of the Territory and involved comparatively small amounts.

In 8 cases the board sustained the action of the county commissioners as against the taxpayer and in 5 instances the claims of appellants were allowed.

At the January, 1905, meeting the board fixed the valuations on different classes of property subject to taxation and the same were certified by the Territorial auditor to the several boards of county commissioners and assessors of the Territory.

With but few exceptions, valuations as fixed by this board have been adhered to by county assessors when making assessments and sustained by boards of county commissioners when passing upon and approving same, and this manner of procedure has had a tendency to equalize and systematize the returning of property of the Territory subject to taxation.

Following is a schedule of the values fixed at the January meeting and is the basis on which the assessment for the present year is being returned:

RAILROADS.

	Per mile.
On the Pecos Valley and Northeastern Railway Company main lines from its Carlsbad depot north	$3,500
From its Carlsbad depot south	3,000
On all its sidetracks and switches	1,000
On the New Mexico and Arizona Railway Company	4,500
On all its sidetracks and switches	1,000
On the Atchison, Topeka and Santa Fe Railway Company from the Albuquerque depot north	7,000
From its Albuquerque depot to Rincon	6,500
From Rincon to Deming	6,000
From Rincon to Texas line	6,000
From its Albuquerque depot west, per mile, the same as is fixed by act of Congress.	
On its Silver City branch	4,500
On its White Water spur	2,500
On its Lake Valley branch	3,000
On its Socorro and Magdalena branch	3,250
On its Santa Fe and Lamy branch	3,500
On its Cerrillos Coal Railroad	3,000
On its Las Vegas Hot Springs branch	3,000
On its Blossburg branch	3,500
On all its sidetracks and switches	1,000
On the Colorado-Southern Railway Company	5,000
On its Catskill branch	2,000
On all its sidetracks and switches	1,000
On the Southern Pacific Railway Company	7,000
On all its sidetracks and switches	1,000
On the El Paso and Northeastern Railway Company from its Alamogordo depot south to Texas line	6,000
On all its sidetracks and switches	1,000
On the Alamogordo and Sacramento Railroad Company	3,000
On all its sidetracks and switches	1,000
On the Denver and Rio Grande Railroad Company	3,000
On all its sidetracks and switches	800

And the calculations per mile above stated shall include and cover all rolling stock, locomotives, and cars of all descriptions, except sleeping cars.

Other values were fixed upon the property of the Atchison, Topeka and Santa Fe Railway Company, as follows:

On the Castenada Hotel, at Las Vegas	$14,000
On the passenger depot, at Las Vegas	3,000
On the superintendent's house, at Las Vegas	2,500
On the Alvarado Hotel, at Albuquerque	27,000

On the machine shops and all other property of the Atchison, Topeka and Santa Fe Railway Company, at Albuquerque, N. Mex	$50,000
On the lots and town property belonging to the Santa Fe Pacific Railroad Company, at Gallup, N. Mex	2,764.50

And the valuation upon all other property belonging to railroad companies doing business in the Territory of New Mexico, except main tracks, branches, side lines, switches, and rolling stock, is hereby fixed at the same valuation, as such property was assessed in the various counties in the year 1904, that class of property including buildings, roundhouses, repair, and machine shops, tools, implements, and supplies, and all other property not included in main lines, side lines, switches, branches, or rolling stock, and in case there is any additional property of this class which was not assessed in the year 1904, its valuation is hereby fixed and established at the same valuation as similar class of property was assessed in the year 1904.

	Per acre.
Agricultural land:	
In actual cultivation, with permanent water rights, not less than	$15.00
Actually in cultivation, without permanent water rights, not less than	7.50
Capable of cultivation, not in cultivation, but in artesian belt, under ditch or otherwise, not less than	5.00
Timber lands:	
Within 10 miles of any operated railroad	3.50
Not above specified	1.50
Coal lands:	
Within 10 miles of any operated railroad	20.00
More than 10 miles from a railroad	10.00
Mineral lands:	
Other than coal lands	20.00
Grazing lands:	
With stock water thereon, by wells or otherwise, so located or situated as to utilize privileges of grazing on Government land	1.25
So situated or located as to utilize grazing privileges on Government land, without stock water	1.00
Other than above specified	.30

Provided, however, that this shall not be construed to include Santa Fe Pacific Railroad lands, in alternate sections, which are fixed at 25 cents per acre.

Provided, further, that if any such lands are timber, mineral, agricultural, or coal lands they shall be assessed as such.

The values fixed upon agricultural, timber, coal, mineral, and grazing lands are intended to apply to and include all land grants; and the agricultural, timber, coal, mineral, and grazing lands on such grants shall be classified and assessed as such by the proper officer.

LIVE STOCK.

	Per head.
Stock horses	$7.50
Saddle horses	15.00
American horses	40.00
American mules	50.00
Mexican mules	15.00
Stock cattle north of the thirty-fifth parallel	10.00
Stock cattle south of the thirty-fifth parallel	9.00
Cattle, other than range stock	15.00
Common sheep	1.25
Graded sheep	1.50
Common goats	1.00
Improved angora goats	2.00
Burros	2.00
Swine	3.50

BANKS.

National and other banking stock and surplus at 60 per cent of its value, and all real estate and improvements belonging to such banks to be assessed as other property in building where any portion of its capital stock is invested in such building.

All other property on the same basis as properties above enumerated upon which values are fixed.

TELEGRAPH AND TELEPHONE LINES.

All telegraph lines carrying one wire	per mile	$50.00
For each additional wire	do	5.00
Local telephone companies in cities, towns, and villages, for each telephone instrument		10.00
For long-distance telephone companies charging rates not to exceed 50 cents per message, for one wire	per mile	20.00
For each additional wire	do	5.00
For long-distance telephone companies charging rates more than 50 cents per message, carrying one wire	per mile	50.00
For each additional wire	do	5.00

I have the honor to be, sir, your obedient servant,

VENCESLAO JARAMILLO, *Secretary.*

REPORT OF THE UNITED STATES LAND COMMISSION.

The United States land commission was provided for in the act of Congress of June 21, 1898, and consists of the governor of New Mexico, the United States surveyor-general, and the solicitor-general of the Territory.

Meetings have been held regularly on the first Monday of each month, also numerous special meetings held at call of chairman when business demanded.

The following amount of land has been selected and located on the ground in the several United States land districts, by Mr. David M. White, the locating agent of the commission, by direction of the commission, for the benefit of the different Territorial institutions since November 30, 1904:

Institution.	Date.	United States land district.	Acreage.
Public buildings at the capital	Dec. 1, 1902	Roswell	14,731.36
	Apr. 13, 1903	do	15,621.96
	Feb. 2, 1903	Clayton	160
	Oct. 3, 1904	do	440.59
			30,953.91
University of New Mexico	Dec. 1, 1902	Roswell	13,734.80
	Dec. 24, 1902	Lascruces	18,863.23
	Feb. 2, 1903	Clayton	1,040
	June 15, 1903	Roswell	[a]1,004.47
			34,642.50
Insane asylum	Feb. 2, 1903	Clayton	120
Agricultural College	Dec. 1, 1902	Roswell	14,458.90
	Dec. 24, 1902	Lascruces	1,962.79
	Feb. 2, 1903	Clayton	7,150.89
	Apr. 13, 1903	Roswell	400
	May 4, 1903	Lascruces	3,823.99
			27,796.57
School of Mines	Feb. 2, 1903	Clayton	880
Deaf and Dumb Asylum	do	do	2,840
Reform School	do	do	720
Normal schools	do	do	2,400
Miners' Hospital	do	do	2,600.23
Military Institute	do	do	1,080
Penitentiary	do	do	1,800

[a] Saline.

The following land was selected by this commission on requisition of the irrigation commission:

	Date.	United States land district.	Acreage.
Improvement of the Rio Grande in New Mexico...	Sept. 7, 1903	Roswell	33,712.20
	Jan. 4, 1904	Santa Fe	5,874.27
	June 6, 1904	do	1,040
			40,626.47
Water reservoirs for irrigating purposes	June 29, 1903	Lascruces	28,524.19
	Aug. 3, 1903	Roswell	19,993.41
	Nov. 2, 1903	Clayton	36,449.72
	Dec. 7, 1903	do	40,047.18
	Jan. 4, 1904	Roswell	20,001.32
	Feb. 1, 1904	do	33,451.46
	do	Clayton	6,032
	Apr. 4, 1904	do	18,879.69
	do	Roswell	2,720.67
	June 6, 1904	Clayton	280
	do	Santa Fe	2,672.90
	July 5, 1904	Clayton	12,318.44
			221,370.98

RECAPITULATION.

Land selected since November 30, 1902.

Institution.	Acreage.	Institution.	Acreage.
Public buildings at the capital	30,953.91	Military Institute	1,080
University of New Mexico	34,642.50	Penitentiary	1,800
Insane Asylum	120	Improvement of the Rio Grande in New Mexico	40,626.47
Agricultural College	27,796.57	Water reservoirs for irrigating purposes	221,370.98
School of Mines	880		
Deaf and Dumb Asylum	2,840		
Reform School	720		
Normal schools	2,400	Total	367,830.66
Miners' Hospital	2,600.23		

The character of this land is almost entirely dry grazing land, although there has been about 6,000 acres of timber land selected.

DISBURSEMENTS.

The following disbursements have been made from the contingent fund of the United States land commission since March 17, 1903, which were paid upon warrant of the Territorial auditor in accordance with council bill No. 113, approved March 17, 1903:

Allowance to Solicitor-General Bartlett for part payment of expense of 2 trips to Washington in interest of commission	$150.00
Allowance made to D. M. White, locating agent, toward office rent from April 1, 1903, to November 30, 1904	150.00
1 new No. 7 Remington typewriter	100.00
1 roll-top office desk	65.99
Freight on same	11.56
1 flat-top typewriter desk	28.50
Freight on same	4.93
Stamped envelopes, stationery, post-office box rent, and office supplies	101.40
Clerk's salary from April 13, 1903, to November 30, 1904	883.87
Total	1,496.25

Respectfully submitted.

A. A. KEEN,
Secretary and Clerk United States Land Commission.

REPORT OF THE IRRIGATION COMMISSION.

Since the date of the last report of this commission the legislative assembly of New Mexico passed an act entitled "An act to create the office of Territorial engineer, to promote irrigation development and conserve the waters of New Mexico for the irrigation of lands, and for other purposes." This act went into effect on the 16th day of March, 1905, and since said date this commission has organized and is now acting under said act.

Under the provisions of this act New Mexico is divided into six water divisions, as follows:

Division I shall be and include that portion of New Mexico within the watershed of the Rio Grande down to the third standard parallel north and the first guide meridian west.

Division II shall be and include that portion of New Mexico east of the watershed of the Rio Grande and north of the principal base line.

Division III shall be and include all that portion of New Mexico within the watershed of the Pecos River south of the principal base line.

Division IV shall be and include all that portion of New Mexico west of the watershed of the Pecos River east of the Oscura and San Andreas mountains and south of the principal base line to and all south of the line between townships 8 and 9 south, east of the Rio Grande; and all of the watershed of the Rio Grande which empties into said river on the south of Cowles Peak and the San Mateo Mountains, and all west of the Continental Divide south of the Datil Range.

Division V shall be and include all that portion of New Mexico within the watershed of the Rio Grande south of the third standard parallel north and west of the first guide meridian west; west of the Oscura and San Andreas mountains to and north of the line between townships 8 and 9 south, east of said Rio Grande, and all the watershed of the Rio Grande which empties into said river north of Cowles Peak and the San Mateo Mountains, and all west of the Continental Divide between Datil Range and watershed of the San Juan River.

Division VI shall be and include all that portion of New Mexico within the watershed of the San Juan River.

The personnel of this commission, as provided for in the above-mentioned act, consists of one irrigation commissioner for each water division, and who shall be a resident of the division for which he is appointed, and a Territorial irrigation engineer, the commissioner of public lands, under provision contained in chapter 111, Laws 1905, acting as ex-officio secretary.

Each irrigation commissioner is required to work in conjunction with the Territorial irrigation engineer, and has general supervision of irrigation matters in his division; also to meet in session on the first Monday of January, April, July, and October of each year as a board of control, as provided in this act.

Under chapter 111, Laws 1905, the board of control is authorized to cause investigations to be made by competent engineers for the purpose of developing artesian water, storage reservoirs, distributing canals, reservoir sites, and enter into contracts with persons or associations of persons for the purpose of constructing irrigation works, and may recommend to the United States land commission the selection and location of lands to be watered by such irrigation works, and when so selected the same shall be under the management of the commissioner of public lands.

Since the date of the last report of this commission it has recommended to the United States land commission for selection account of water reservoirs for irrigation purposes 65,599.65 acres, and for the improvement of the Rio Grande, in New Mexico, 4,880.21 acres.

The officers and members of this commission are as follows: Division No. 1, Arthur Seligman, Santa Fe, N. Mex.; division No. 2, Frank Springer, Las Vegas, N. Mex.; division No. 3, A. N. Pratt, Carlsbad, N. Mex.; division No. 4, Newton A. Bolich, Deming, N. Mex.; division No. 5, Higinio Chavez, Peralta, N. Mex.; division No. 6, J. E. McCarthy, Farmington, N. Mex.; A. N. Pratt, president; D. M. White, irrigation engineer; A. A. Keen, secretary.

Respectfully submitted.

A. A. KEEN, *Secretary.*

REPORT OF THE CATTLE SANITARY BOARD.

I have the honor to make the following report of the work of the cattle sanitary board during the year ending June 30, 1905, and also the conditions of the cattle industry during the same time:

FINANCIAL CONDITION OF THE BOARD.

It is with great satisfaction that I call attention to the fact that the report of one year ago made by me upon taking charge of the secretary's office showed the board in debt to the San Miguel National Bank, of Las Vegas, to the amount of $4,250. This amount has been entirely paid up, together with several large sums due from the board to other parties, and at the present writing the board does not owe a dollar to anyone and has a very satisfactory balance to its credit in the hands of the Territorial treasurer. This, too, without increasing the tax levy for board uses, the levy for the last year as well as the present year being the same as it has been for several years past.

An entirely new set of books has been opened and the records copied and arranged in a more businesslike manner.

The passage of the law requiring every person using a brand to have the same recorded has proved a very wise measure, while adding immensely to the work of the office force and necessitating the employment of additional help to properly handle it.

These applictaions are coming in at the rate of 600 per month and the daily stream of applications shows no signs of diminishing. To find proper brands—brands that do not conflict with other and already registered brands—is a task that takes time and requires great care and judgment.

Owners all desire small brands and characters so as not to disfigure the animals, and it is frequently necessary to write three or four letters to one person before a brand is found that is satisfactory and can be recorded.

The law is a most excellent one, and once all the brands are recorded, the complaints that used to be made about men who used unrecorded brands to the detriment and injury of their neighbors will be few and far between.

CATTLE SHIPMENTS.

During the fall of 1904, owing to the low cattle markets in the East, the shipments of cattle were much lighter than usual, but it has been more than made up by the heavy shipments of the first six months of 1905.

Probably never in the history of New Mexico have cattle been shipped out as they have since May 1.

Owing to the prime condition of the ranges all over the Territory cattle were in good shape to ship, and buyers were plenty, at prices which were very satisfactory to the cattlemen.

It is too early now to give an exact statement of the shipments, inspectors' reports not yet being all in, but they have been very heavy. Inspector Johnson, at Deming, inspected and passed 30,000 head from his district in May and quite as many in June. Inspector Stone, at Portales, and Inspector Ballard, at Roswell, have also had almost as heavy shipments during the same time.

HIDE INSPECTION.

The inspection of hides has also been very heavy. To date in 1905 over 40,000 hides have been tagged and inspected by our inspectors. Last year for the entire year we tagged only 33,000 hides, showing a very substantial increase. This increase, however, tells its own story of losses on the ranges during the past winter. The winter of 1904–5 will not soon be forgotten by the cowmen of New Mexico. The losses were heaviest in the northern and eastern counties, and in those districts fully 20 per cent of the range cattle perished, taking it as a whole.

The calf crop for 1905 will be a light one. It is early to etsimate it, but it is generally conceded that, taking the entire Territory over, the calf crop will not be much above 40 per cent. In some counties it will be better, but the average will not be much above this.

PRICES.

Prices have been good and are steadily improving. Early in the spring buyers contracted for many thousands of young steers at $11 for yearlings and $15 for 2-year-olds, while cows and calves were sold at $14. As the spring came on these

prices improved and to-day the general price on yearlings is from $12.50 to $14, 2-year-olds at from $17.50 to $20, and 3-year-olds $22 to $25. There is no lack of buyers at these prices, and but for delays in getting cars to load the shipments would have been much heavier.

CONDITION OF RANGES.

All over New Mexico the ranges are in first-class condition. Such a crop of weeds was never seen before and places that have been bare of grass for years are covered with a fine growth. Water is plentiful; the lakes and ponds are full, creeks running bank full, and springs that for some time have barely run are now flowing generously.

The losses in last winter's storms and the heavy shipments and small calf crop will doubtless make quite a serious shortage in the number of cattle returned for taxation. Just what that shortage will be is a serious question and an important one. By many well-posted men it is believed that the shortage will be sufficient to make a very marked and satisfactory rise in cattle values. This "shortage of cattle" cry has been heard, however, for so many years that cattlemen are very skeptical upon its coming.

However, it does seem as if, considering the heavy losses in the spring and summer of 1904 and no calf crop that year, with the winter losses of 1905 and no calf crop this year, and, further, that these same conditions have been had all over the western range country, one must be forced to admit that next year when the buyers come to look for steers they will find very few to buy down here in the southwest breeding grounds.

HEALTH OF THE CATTLE.

The subject of mange is one that bids fair to cause the cattlemen and the board no little trouble and expense. The Federal authorities, having pretty well cleaned up the disease among the sheep of New Mexico, have turned their attention to the cattle. While we have no great amount of this disease, still it is prevalent in a large portion of the range country. South and west of Las Vegas there is none of it, but north and east of that point, and especially along the border counties lying along the Texas line, it is pretty general. The stockmen, however, are taking active steps to suppress it by building dips and dipping their herds.

The board is doing all in its power to aid them, and a member of the board is especially empowered to visit the infected districts and advise with the owners as to the best means of stamping it out.

This is not going to be done in one year, but will take several years of care and watchfulness before the cattle of New Mexico are entirely free from the disease.

Dipping is the only measure that will clean it up, and the great difficulty is to get the cattle together to dip them. However, the board is working in perfect harmony with the United States officials, and it is thought that a very great deal of progress will be shown by the time winter sets in and dipping operations are suspended.

Respectfully submitted.

WM. C. BARNES, *Secretary.*

REPORT OF THE SHEEP SANITARY BOARD.

During the latter part of August, 1904, a plan of cooperation was submitted by the Bureau of Animal Industry and adopted by this board whereby all sheep were to be ordered into dipping places by inspectors of this board and dipped under the supervision of inspectors of the Bureau of Animal Industry, and at a meeting of the board held on the 23d day of August, 1904, the following order was made and copies in English and Spanish sent to all of the sheep growers throughout the Territory:

"The Department of Agriculture of the United States has notified the sheep sanitary board of this Territory that immediate and vigorous action must be taken by this board for the eradication of scab from the flocks in the Territory, and demands that all sheep within this Territory be dipped within the shortest practicable period of time, or otherwise New Mexico will be quarantined and no sheep permitted to enter or leave the same.

"It is ordered by this board, and sheep growers are notified, that all sheep within New Mexico having the disease of scabies must be dipped immediately

and a second dipping given ten days after the first, and that sheep which do not have scab must be dipped at least once between now and October 20, 1904; but only when sheep are dipped under the supervision of an inspector will the dipping be recognized as a compliance with this order. To insure the presence of an inspector at your place of dipping, you should give the secretary of the sheep sanitary board, at Albuquerque, as long a notice as possible of the time and place where you wish to dip, so that an inspector may be notified to be present. Owners of public dipping places are required, before opening the same for dipping, to make application to the secretary of this board and obtain a permit to open the same. United States Government inspectors will supervise all dippings, and only such dips or medicines as are approved by the Bureau of Animal Industry will be recognized.

"Our inspectors have been instructed strictly to enforce this order, and any failure to comply therewith will subject the owner of such sheep to a heavy fine."

At the time this order was adopted it was believed by the board and inspector in charge for the Bureau of Animal Industry in New Mexico that a sufficient force of inspectors for the supervising of all dipping would be immediately available. Unfortunately the Bureau did not have available a large enough force of inspectors, and the dipping was consequently somewhat delayed. This delay was augmented by severe floods throughout the Territory washing out the railroad tracks, which made it impossible for inspectors to get into the Territory, and the destroying of dipping plants. Delay was also occasioned by a scarcity of sulphur on account of the railroads being unable to run trains. Dipping was therefore so delayed that all sheep were not dipped by the time severe weather commenced, in the latter part of December, while a considerable number failed of the second dipping. A large per cent of the sheep in the Territory were, however, dipped under such supervision.

Some scab developed during the winter and spring, and the owners of such flocks were ordered to dip the same.

The board at its meting in December last passed a resolution thanking the Bureau of Animal Industry for its cooperation and urging that that department place in New Mexico a force of inspectors sufficiently large to supervise the dipping of all sheep during the coming summer and fall, which resolution was duly forwarded to the Bureau of Animal Industry. Some correspondence has been had with the Bureau regarding the placing of such force of inspectors in New Mexico this summer and fall, but we are informed that on account of insufficient funds it is not certain that the Bureau can comply with the request of the board during this year. The board is now waiting to hear further from the Department regarding this matter before general orders for dipping are issued for the present year.

Beginning with last August, we have had an abundance of rain, and grass is good, although it will take a number of years before the country will fully recover from the droughts of the past few years. In some parts of the Territory the losses during last winter on account of severe weather were very large and the per cent of lambs raised during the spring correspondingly small, while in other sections the losses were light and the per cent of lambs raised large.

With good prices now prevailing for wool and lambs the sheep growers of New Mexico are anticipating a very prosperous year.

Respectfully submitted.

SOLOMON LUNA, *President.*

REPORT OF THE BUREAU OF IMMIGRATION.

The membership of the bureau was increased by the thirty-sixth legislative assembly at its session in January and February last from five to six, and the organization at this date is as follows: President, Granville Pendleton, Aztec, San Juan County; vice-president, W. B. Bunker, Las Vegas, San Miguel County; treasurer, Joseph W. Bible, Hanover, Grant County; members, Alfred Grunsfeld, Albuquerque, Bernalillo County; W. E. Lindsey, Portales, Roosevelt County; Roman Armijo, Socorro, Socorro County; secretary, Max. Frost, Santa Fe, Santa Fe County.

The executive offices of the bureau are located in the capital.

The business of the bureau, of which the secretary is the executive officer, has greatly increased during the year past, and much more work than ever before in the shape of receiving and answering letters of inquiry concerning the Territory and its resources and in the preparation of bulletins, handbooks, news-

paper and magazine articles has been done. More personal visits to the bureau by tourists, health seekers, capitalists, and business men generally have occurred during the past year and increased during the entire period.

During the past year, for which this report is made, the following pamphlets and books have been published by this bureau:

A book of 303 pages, of which 150 are full-page illustrations, and entitled "To the Land of Sunshine." The edition of this publication was 6,000 copies, and was undertaken jointly by the bureau and the New Mexico board of managers of the Louisiana Purchase Exposition. Thirty-five hundred copies of this book were distributed at the New Mexico building at the Louisiana Purchase Exposition; 500 were sent for distribution to the Lewis and Clark Exposition in Portland, Oreg.; and 2,000 copies were distributed by the passenger and advertising departments of the Atchison, Topeka and Santa Fe Railway, of the Denver and Rio Grande Railroad, of the Chicago, Rock Island and Pacific Railway, of the Santa Fe Central Railway, of the El Paso and Northeastern Railway, of the Pecos Valley and Northeastern Railroad, and the Southern Pacific Railway.

Thirteen hundred copies of the book, Mines and Minerals of New Mexico, written by Prof. Fayette A. Jones, civil and mining engineer, containing over 300 pages, fully illustrated, were published jointly by the bureau of immigration and the New Mexico board of managers of the Louisiana Purchase Exposition. The copies of this work have also been distributed to the fullest extent. The editions of both books are now exhausted.

During the year editions of bulletins containing information of the 25 counties of the Territory, and printed in the fore part of 1904, were distributed as follows: Thirty thousand at the New Mexico building at the Louisiana Purchase Exposition in St. Louis, and 30,000 by the passenger and advertising departments of the several railroads, by citizens of New Mexico interested in inducing immigration to come to the Territory, and by the bureau, as well as by boards of trade and chambers of commerce of the larger towns. These bulletins contain from 40 to 60 pages of a size to be slipped into a No. 6½ envelope conveniently. They were fully illustrated, and contain all information possible to be gathered concerning the resources, conditions, climate, minerals, industries, stock raising, schools, people, towns, and settlements of these various counties.

That this extensive distribution of literature and the wholesale advertisement gained by it have done the Territory great good and have been the means of bringing thousands of immigrants, tourists, those in search of permanent homes, and health seekers to New Mexico can not be doubted, and it is not by those familiar with such matters. The passenger departments of the several railroads named would not have performed this labor were it not patent that it has done and is doing great good to all concerned—the Territory of New Mexico and the roads—and that it has brought and is bringing the results anticipated and expected, namely, an increase of the population of the Territory and of its business, a satisfactory development of its great natural resources, tourists, travelers, and health seekers to the "Sunshine Territory," as well as capital for the various channels of trade and for mining, irrigation, manufacturing, agricultural, and stock-raising enterprises.

During the past year the following banks have been organized:

National: State National, at Albuquerque; First National Bank, of Artesia; Hagerman National Bank, of Hagerman.

Private: The Citizens' Bank, at Aztec; the McKinley County Bank, at Gallup, and the Bank of Artesia, at Artesia.

In the four land districts in the Territory for this fiscal year the area of homestead entries on the public domain amounted to 320,000 acres. It is estimated that three-fourths of the citizens who made these homestead entries are newcomers and immigrants into the Territory. It is also estimated that the head of each family represents five persons therein on an average. Upon this calculation it is safe to assume that in the country precincts the population has increased during the past twelve months 7,500 persons—men, women, and children. In the cities, towns, and larger settlements, from the best data obtainable, especially the school census, it is estimated that the increase during the past twelve months of people arriving from the States or other Territories of the United States has been 8,500 persons. I therefore estimate the increase of the population of the Territory at this date to have been during the fiscal year just ended 16,000 persons and the entire population of the Territory at this time 300,000 persons, an increase of 114,690 over the figures given by the census of 1900, which were 195,310. This is certainly very gratifying, and indicates

that if it keeps up—and there is every reason to believe that it will not only keep up, but increase—that by the census year of 1910 New Mexico will have a population of 425,000 people. These estimates are based upon carefully computed and fairly reliable data, and reports are not believed to be excessive.

The vote cast at the November, 1904, election shows a considerable increase over the vote cast in November, 1902, election.

County.	1902.	1904.	County.	1902.	1904.
Bernalillo	4,239	3,415	Quay [b]	.....	649
Chaves	1,242	1,527	Rio Arriba	2,651	3,081
Colfax	2,477	2,803	Roosevelt [b]	.....	582
Donna Ana	1,690	1,850	Sandoval [b]	.....	1,151
Eddy	650	605	San Juan	736	835
Grant	1,727	1,768	San Miguel	4,778	4,884
Guadalupe	1,364	.....	Santa Fe	2,746	2,624
Leonard Wood [a]	.....	1,319	Sierra	805	815
Lincoln	1,442	1,303	Socorro	2,429	2,735
Luna	504	479	Taos	1,443	1,887
McKinley	564	628	Torrance [b]	.....	795
Mora	2,278	2,341	Union	1,443	1,673
Otero	1,166	1,414	Valencia	2,054	1,848

[a] Name changed to Guadalupe. [b] New counties.

The registration of the November, 1904, election was 64,422, and upon the basis of this multiplied by 4½, the usual figure used in estimating population, the population then and there was 290,000 people, which has steadily increased ever since.

On January 1, 1905, a new county was organized under the name of Torrance, with the county seat at Estancia. This town is but two years old, but contains now about 750 inhabitants, having polled at the November, 1904, election 101 votes out of a registration of 164. The county was created out of portions of Santa Fe, Valencia, Lincoln, and Guadalupe counties, and is rapidly settling with homesteaders, who hail mostly from western Texas and from Oklahoma. The name of the county of Leonard Wood was rechanged to Guadalupe, which has been the original name from the first creation of the county twenty years ago. This was done by the thirty-sixth legislative assembly February 23, last. Outside of the creation of Torrance and the change of name from Leonard Wood to Guadalupe County, there have been no geographical changes, with the exception of the transfer of some precincts from counties to counties with which they had better geographical and personal relations.

The 1,000 maps of New Mexico purchased in 1904 by the bureau from the General Land Office have been distributed, and at this time the bureau has no maps for distribution.

During the year closed 2,000 copies of the report of Governor M. A. Otero to the Secretary of the Interior for the year 1903 were distributed at the New Mexico Building of the Louisiana Purchase Exposition. Five hundred copies of the report of the governor to the Secretary of the Interior for the year 1904 were distributed by the bureau, as well as 1,000 copies of the report for 1903 to applicants for information and to the agencies of the passenger departments of the several railroads having mileage in the Territory.

The correspondence of the bureau has grown very much, and there have been days and days during which twenty and more letters were written and sent in answer to inquiries and applicants for information concerning New Mexico. The letters numbered into the thousands. Every letter received is carefully answered, all possible information given, and bulletins as well as Territorial newspapers have been sent to applicants in each case.

The duties required of the secretary have become so manifold and exacting that he has had to employ at his own expense, regularly during the year past, one stenographer steadily for each working day, on an average of from eight to nine hours, and another stenographer half a day during that time, at an average of four hours.

During the present fiscal year of the Territory, which ends November 30, the appropriation for the maintenance of the bureau is only $2,000, which is absolutely inadequate. This fact has prevented the bureau from extending its operations and increasing its usefulness, as is demanded by the exigencies of the times and the fact that New Mexico is in the public eye and attracting great attention.

The members of the bureau serve without fee or compensation. They receive but actual traveling expenses for attending the meetings of the bureau, and on account of the smallness of the appropriation but one meeting has been held during the year just closed, namely, the one for reorganization and the biennial election of officers, April 10, 1905.

The members individually do a great deal of work and help to advance the material interests of the Territory greatly by answering inquiries, mailing bulletins, handbooks, and other printed matter to applicants, entertain tourists and seekers for information, giving people who call on them personal information and putting in a good word for New Mexico whenever possible. President Granville Pendleton especially has done much work in these directions, and so has Judge W. E. Lindsey, of Portales. These two members are residents of counties into which immigration is going at a rapid rate. They are what is called "American" counties—that is, the preponderance of newcomers and immigrants is very great; in fact, in Roosevelt County the population consists of 29 out of 30 new settlers who have come into the county since the 1st of January, 1902. The precincts composing this county in November, 1902, cast 124 votes, while the same precincts in the county of Roosevelt in November, 1904, election cast 582 votes, showing a great increase in population in two years.

The members of the bureau are certainly entitled to fair consideration and the gratitude of the people of New Mexico for the unselfish, efficient, and constant work they have done during the past year in disseminating information, inducing immigration and capital to come to New Mexico, and doing everything in their power for the advancement and progress of the Territory. They have labored without the hope of fee or reward, except the consciousness of having performed their duties well and faithfully and having aided, in every respect, material, financial, moral, social, and business interests of the Territory of which they are such good and exemplary citizens.

Much of the time of the secretary during the year past has been taken up by visitors to the office of the bureau, in Santa Fe, by tourists, travelers, health seekers, and home seekers, who have called there and desired personal information concerning New Mexico and its several sections, as well as advice by the secretary where to go, how to invest money or engage in business, purchase of land, requirements of the United States land laws, how and where to make investments, information concerning wages, rents, prices of land and live stock, how to obtain work, and many other kindred subjects. All these were received with the greatest of courtesy, and all possible information was imparted to them. They were also supplied with the printed matter prepared by the bureau for this purpose. The records show that the past year has been the busiest since the establishment of the bureau, in 1880.

Very respectfully,

MAX. FROST, *Secretary of the Bureau.*

REPORT OF THE LOUISIANA PURCHASE EXPOSITION MANAGERS.

The general features of the display made by New Mexico at the Louisiana Purchase Exposition, held at St. Louis last year, have been referred to in previous reports, but I do not consider that a general résumé of the results accomplished would be inappropriate at this time.

The New Mexico exhibits were designed and collected for the central purpose of showing the desirability of the Territory for homes and investment, and it is universally conceded by the many thousands who saw the display that the effort was altogether successful and a credit to the entire Territory. The numerous and varied exhibits, which, to the surprise of even residents of the Territory, captured so many prizes, have proven a very successful advertisement for New Mexico.

The mineral exhibit was a complete exposition of the wonderful natural resources in that regard, and the beneficial results are already apparent in the large number of mining investors and engineers who became interested through the medium of the display and have since made personal investigation and investment.

The horticultural and agricultural products shown have convinced the farmers of the richest agricultural sections that New Mexico has superior advantages in these directions, and that with scientific irrigation and sunshine wonderful results in fruits, cereals, and vegetables are being obtained here, and that with great profit and benefit to those engaged in raising them. In the

direction of live stock, especially cattle, sheep, and angora goats, all interested have learned from actual observation that New Mexico is a superior breeding section for cattle and an ideal home for the raising of the highest grades of sheep and the finest angoras. The excellent education exhibit has demonstrated to prospective investors, home seekers, and farmers that the education of their children will not be neglected, but in many ways they will acquire more useful knowledge in New Mexico's schools and colleges than can be obtained in similar institutions elsewhere. This exhibit received a gold medal award.

In the ethnological exhibits the Harvey collection of Albuquerque captured the first gold medal. The Territory's ethnological exhibit filled an entire room in the anthropological building, 32 by 40 feet. From an artistic point of view it did not fail to interest all who delight in the beautiful, and that it was superior from a scientific standpoint is proven by the favorable attention given it by scientists from all parts of the world who are qualified to judge, and who pronounced it by far the best collection of its kind at the exposition and one of the best ever gathered.

The advertising of the resources of the Territory was studiously cared for. Thousands of copies of the handsomely illustrated and well-written handbook on New Mexico, containing 300 pages and printed under and by direction of the board of managers, were distributed to the many anxious to possess literature on New Mexico. These were so persistently sought after that the supply was quickly exhausted and double and treble the number could have been advantageously used. Much valuable aid in the advertising line was given to the board by the Bureau of Immigration, which sent to the New Mexico building over 60,000 illustrated bulletins containing information of the resources, conditions, climate, minerals, and industries of New Mexico, which were distributed by the employees at the New Mexico building as well as at the other exhibits. Correct official statistics describing the health-preserving climate of New Mexico and bulletins showing the entire Territory as one great health resort, especially for those suffering from pulmonary and bronchial affections, were furnished and distributed.

A fitting closing of the display was the observation of New Mexico day at St. Louis on Friday, November 18. October 17 had originally been designated for this occasion, but on account of the flood conditions prevailing in the Territory at such date it was found necessary to postpone the ceremonies until a month later. The ceremonies were dignified, timely, and interesting, and were participated in by Governor Otero and many prominent and leading citizens of the Territory. Addresses were made by the director-general of the exposition, Ex-Governor David R. Francis, of Missouri; by Governor Otero, of New Mexico, and Associate Justice John R. McFie, of the Territorial supreme court. The social features were carefully planned and were a complete success.

It is no exaggeration to state that the results attained by the participation of New Mexico in the Louisiana Purchase Exposition will prove to be great and very satisfactory. That very valuable and diversified advertising has been obtained for the Territory, and that it has been shown to thousands of visitors from every section of the United States and of the civilized world that this land of sunshine is not an arid, wild, and wooly waste, but, on the contrary, that in many sections it is a veritable garden; that it contains cultured, progressive, and energetic people, and that it is advancing with rapid strides toward becoming one of the great wealthy, prosperous, and energetic Commonwealths of the United States of America.

New Mexico and its exhibitors at the Louisiana Purchase Exposition were awarded 1 grand prize, 19 gold medals, 25 silver medals, and 43 bronze medals. These medals are distributed well over the Territory, showing the general superiority of New Mexico products.

A complete list of the official awards is as follows:

AGRICULTURE.

Group 84: Gold.—John Becker Company, Belen, wheat; Jose Rodriguez, San Miguel, peas, wheat; New Mexico Agricultural Experiment Station, wheat; J. J. Hagerman, Roswell, alfalfa, hay, and corn; D. J. Jones, Berino, alfalfa.

Group 84: Silver.—Alellan Growers' Association, Roswell, cantaloupes; Alvino Chamberilla, La Mesilla, wheat; L. Clapp, Hatch, wheat; W. N. Hager, Mesilla Park, wheat; Margarito Padillo, Lascruces, wheat; Catarino Rodriguez, San Miguel, wheat; O. C. Snow, Mesilla Park, Lascruces, alfalfa; Jesus Soles, Hatch, alfalfa; George M. Williams, Lascruces, wheat.

Group 84: Bronze.—Jose Baca, Lascruces, wheat; Clifton Chisholm, Roswell, Indian corn grown by irrigation; Chamber of Commerce, Roswell, cantaloupes; Anastacio Garcia, La Mesilla, wheat; Frank Knapp, Lascruces, barley; Felipe Lopez, La Mesilla, wheat; Jose Madrid, La Mesilla, wheat; Lebriro Ramico, San Miguel, wheat; Emilio Ramirez, San Miguel, wheat; J. E. Wilson, Roswell, potatoes.

Group 89: Bronze.—Mesilla Valley Canning Company, Lascruces, tomatoes, chili, peppers in cans.

Group 95: Gold.—Mrs. M. Armer, Kingston, wool; J. J. Jacobson, Faywood, roots.

Group 95: Silver.—H. Mertin, Rodey, wool; New Mexico Agricultural Experiment Station, 2 fleeces from Angora goats, Mesilla Park.

Group 95: Bronze.—Latham Brothers, Lake Valley, wool.

Group 96: Bronze.—J. R. Slease, Roswell, honey in comb and in jars; Mrs. Lucy C. Slease, Roswell, honey in jars.

HORTICULTURE.

Group 107: Gold.—Territory of New Mexico, collective exhibit of fruit; J. J. Hagerman, Roswell, fruit.

Group 107: Silver.—R. F. Barnett, Roswell, apples; Robert Beers, Roswell, fruit; Charles De Bremond, Roswell, fruit; Parker Earle Orchard Company, Roswell, plums; Ingleside Orchard, Roswell, peaches; E. Kimmick, Swartz, apples; Love Orchard, Carlsbad, peaches; L. F. D. Orchard, Roswell, apples; George Medley, Roswell, apples; F. G. Tracy, Carlsbad, peaches.

Group 107: Bronze.—Gen. R. S. Benson, Carlsbad, apples; Pickering Orchard, Roswell, fruit; Roswell Chamber of Commerce, Roswell, peaches; C. H. Sansel, Roswell, apples; Mrs. Goodwin Ellis, Lincoln County, apples; G. W. Stevens, Roswell, fruit.

MINES AND METALLURGY.

Group 116: Gold.—Territory of New Mexico, Santa Fe, mineral resources; New Mexico World's Fair Commission, Santa Fe, coal and ores.

Group 116: Silver.—New Mexico School of Mines, Socorro, zinc ores and minerals.

Group 116: Bronze.—C. H. Laidlow, Fairview, mineral specimens; A. B. Renehan, San Pedro, mineral paint; New Mexico Fuel and Iron Company, Santa Fe, bloedite and bituminous coal; Kelly mine, Kelly, zinc and lead ores; Graphic mine, Socorro, zinc ores and calcites; Mogollon Gold and Copper Company, Cooney, copper ores; C. B. Hickman, Pinos Altos, copper minerals; Central mining district, Hillsboro, native copper.

EDUCATION.

Group 1, elementary education: Silver medal.—New Mexico State Commission (collective).

Group 1: Bronze.—Gallup board of education, Roswell board of education, Las Vegas board of education, Santa Fe board of education.

Group 3: Bronze.—University of New Mexico, Albuquerque (general exhibit).

Group 5: Silver.—Department of horticulture, New Mexico College of Agriculture and Mechanic Arts, Mesilla Park, photographs and charts showing benefits from arsenical sprays against the codling moth and also the number of breeds of this insect.

Group 6: Gold.—New Mexico College of Agriculture and Mechanic Arts, Mesilla, student's work.

Group 6: Silver.—College of Agriculture and Mechanic Arts, Mesilla Park.

MANUFACTURES.

Group 56: Gold.—Richard Wetherill, Putnam, rare old blankets.

ANTHROPOLOGY (SECTION OF ETHNOLOGY).

Apache group: Chief Trucha Tafoya, leader, Dulce.

Acoma group: Juan Antonio Saracini, leader, Laguna.

Pueblo group: Antonio Chavez, leader, Santa Clara Reservation, Albuquerque.

Group 128, archæology: Grand prize.—New Mexico Territory, Santa Fe, aboriginal blanketry and basketry. Bronze medal to George Tietzel, collaborator, Albuquerque (collaborator with Fred Harvey).

Under the provisions of the act creating the board the life of the same would have expired on March 1, 1905. It became apparent, however, that owing to the multiplicity of matters remaining undisposed of the business could not be satisfactorily closed within such period. A showing to this effect was made to the members of the thirty-sixth legislative assembly, and authority was readily granted under the provisions of section 15, chapter 112, of the Laws of 1905, to extend the term until December 1, 1905, in order that the work already undertaken could be properly and systematically completed. Under the provisions of said act Governor Otero, on April 12, 1905, reappointed all the members of the board with the single exception of Hon. Eusebio Chacon, who had removed from the Territory to Colorado, and named in his place Hon. Jose D. Sena, of Santa Fe.

It had been the earnest desire and effort of the members to confine the expenses of the exhibit within the limits of the appropriation provided by the act creating the board, which was not to exceed the sum of $30,000. After the close of the exposition, however, claims were presented in excess of the amount appropriated, and it became necessary to request an additional appropriation from the legislature. This was given in the sum of $3,000. The business of the board is now practically closed with the exception of a very few minor matters, and the complete final report will shortly be submitted to the governor of the Territory, as required by law.

The total amount received from all sources to July 1, 1905, was $30,211.60; the total amount expended to July 1, 1905, was $30,181.01, leaving a balance on hand July 1, 1905, of $30.59. The board will not be compelled to expend the total amount of the deficiency appropriation, but will have a balance to return to the Territorial treasury.

A disappointment was experienced in the proceeds resulting from the sale of the building, $400 being the best price that could be obtained for the same. Another unfortunate situation arose regarding the payment of the original appropriaion, the same being raised by tax levy for the fiscal years 1903 and 1904, and the ready funds not being available. As a result the board had to expend a considerable sum for interest on borrowed money in order to carry forward the exhibit.

Respectfully submitted, W. B. Walton, *Secretary.*

REPORT OF THE BOARD OF HEALTH.

I have the honor to submit the following report of the transactions of the board of health for the fiscal year ending July 1, 1905:

Medical licenses:	
Issued by registration	50
Rejected—	
Not properly qualified	8
For unprofessional conduct, drug habit, etc	1
Undertakers' licenses:	
By registration of credentials	2

Respectfully submitted.

B. D. Black, *Secretary.*

REPORT OF THE BOARD OF OSTEOPATHY.

Pursuant to an act of the thirty-sixth legislative assembly, entitled "An act to license osteopathic physicians and surgeons to practice in the Territory of New Mexico, to establish a board of osteopathy, to regulate the practice of osteopathy, and to punish all persons violating the provisions of this act," approved March 14, 1905, Dr. C. H. Conner, of Albuquerque, Dr. A. M. King, of Roswell, and Dr. Charles A. Wheelon, of Santa Fe, were duly commissioned as members of the board of osteopathy, and each qualified for membership by filing his oath of office with the secretary of the Territory.

On Monday, April 3, 1905, Dr. C. H. Conner and Dr. Charles A. Wheelon met at the capitol building and organized the said board of osteopathy. The following officers were elected: Dr. C. H. Conner, Albuquerque, president; Dr. A. M. King, Roswell, vice-president; Dr. Charles A. Wheelon, Santa Fe, secretary and treasurer.

On April 18 five licenses to practice osteopathy were issued.

Receipts during the year were	$30.00
Expenditures	19.05
Balance on hand July 1, 1905	10.95

I have received numerous letters from practitioners in other States and Territories inquiring into the condition and laws governing the practice of osteopathy in New Mexico.

It is the intention of the board to maintain as high a standard of osteopathy in New Mexico as the profession enjoys in older and more populous Commonwealths.

I have the honor to be, your obedient servant,

CHAS. A. WHEELON,
Secretary Board of Osteopathy.

REPORT OF THE BOARD OF PHARMACY.

I respectfully report that on behalf of the board of pharmacy I visited the cities of Santa Rosa, Tucumcari, Portales, Roswell, Artesia, Dayton, and Carlsbad. I registered two applicants by examination at Roswell, one at Carlsbad, and one at Santa Rosa; and was obliged to prosecute Ed. J. Neer, at Portales, for violation of the poison and pharmacy law. The expenses of the trip amounted to $143, but owing to fees and fines collected was not such a severe strain on our small treasury.

I find that the trips which I have taken in the interest of the board of pharmacy—and in this conjunction will also say that Secretary Fischer made one to the northern counties—have had a wholesome effect and do away with the willful violation of the pharmacy law as formerly practiced.

Since last report the board has held two meetings, the first at Albuquerque, October 11 to 14, 1904, and the last at Santa Fe, March 8 and 9, 1905.

At the meeting held in Albuquerque there were present B. Ruppe, president, and A. J. Fischer, secretary (the floods preventing the other members from attending). The following applicants for registration presented themselves for examination: W. H. Frampton, George Wehrly, S. T. Vann, and W. H. Schofield. Messrs. Frampton and Wehrly having obtained the necessary 75 per cent, were granted registration, and S. T. Vann was granted a temporary certificate until the next meeting of the board.

The following expense bills were presented, allowed, and ordered paid: B. Ruppe, per diem and expenditures, $24.90; A. J. Fischer, mileage and per diem, $16.70.

At the meeting held in Santa Fe there were present B. Ruppe, president; P. Moreno, W. C. Porterfield, and A. J. Fischer, secretary.

Minutes of the last meeting were read and approved. The secretary presented his report of the proceedings of the national boards of pharmacy meeting at Kansas City and his expense account, which were approved and the expense account ordered paid.

Mr. S. T. Vann presented himself for reexamination and passed. Having obtained more than the required 75 per cent, he was granted registration.

The following bills were presented, allowed, and ordered paid:

A. J. Fischer, expense to Kansas City	$65.55
A. J. Fischer, per diem and postage	20.00
W. C. Porterfield, mileage and per diem	48.40
P. Moreno, mileage and per diem	44.50
B. Ruppe, mileage and per diem	22.20

Attached are the financial report and the membership report:

FINANCIAL REPORT.

Balance on hand last report	$237.40
Received since last report, registrations and renewals	683.00
Total	920.40
Disbursements	542.55
Balance on hand July 15, 1905	377.85

MEMBERSHIP REPORT.

Registered pharmacists in good standing last report	120
Registered since last report	27
	147
Failed to renew registration to this date	62
Registered pharmacists in good standing at this date	85

There are undoubtedly a number of those who have failed to renew their registration so far who will renew in the near future, so that the number given above, 147, represents the actual number of registered pharmacists in the Territory.

Respectfully submitted.

B. RUPPE,
President Territorial Board of Pharmacy.
A. J. FISCHER, *Secretary.*

REPORT OF THE DENTAL EXAMINERS.

The twelfth annual meeting of the board of dental examiners was called to order at the office of the secretary in Santa Fe, May 22 and 23, 1905, all members being present. Minutes of the last meeting read and approved.

Under an amendment to our law, approved March 9, 1905, which provides that all applicants to practice dentistry in the Territory of New Mexico must be examined, three candidates presented themselves, all of whom successfully passed the required examination. H. C. Correll, of Roswell, N. Mex., who had previously been granted a permit to practice until the regular meeting for examination, failing to appear for the examination, was denied a license.

Dr. A. A. Bearup and Dr. C. N. Lord were elected delegates to the National Association of Dental Examiners to be held at Buffalo, N. Y., July 25, 1905.

Permanent certificates were issued to 10 candidates, 3 as above, upon examination, and 7 to dentists who had made the requisite application and met the requirements previous to the passage of the amendment of March 9, 1905.

It was voted to hold hereafter two meetings of the board per annum for the examination of candidates, the next meeting to be held at Las Vegas, N. Mex., October 5 and 6, 1905.

No prosecutions for violation of law have been found necessary.

Cash on hand from last report	$25.50
Received during year	153.00
Total	178.50
Expenditures during year	151.60
Balance on hand	26.90

All of which is respectfully submitted.

CHAS. N. LORD, *Secretary.*

REPORT OF THE BOARD OF EXAMINERS IN OPTOMETRY.

Applications have been received from the 18 optometrists of New Mexico for registration under section 6.

No applications for examinations have been received up to this date.

The optometrists in New Mexico seem to be in harmony with the optometry law and the board, and we believe that we shall have nothing but favorable comment to report, as very little business has been transacted, owing to the fact that the law allowed optometrists six months in which to comply with its requirements. This time expires September 16, 1905.

It will be seen that we have hardly had time as yet to fully demonstrate what the law will do for us.

Very respectfully,

S. T. VANN, *President.*
O. G. MYHRE, *Secretary and Treasurer.*

REPORT OF THE PRESIDENT OF THE UNIVERSITY OF NEW MEXICO.

The commencement exercises of May 12, 1905, closed a very satisfactory year in the history of the university. The enrollment for the year was very satisfactory. The total enrollment in all the departments, not including members of

the Chorus and Treble Cleff Club of the School of Music, numbered 175. Three years ago there was not a student of college grade, but during the school year 1904–5, in spite of the fact that two years ago the preparatory course was lengthened from three to four years, there were 26 students of college rank distributed through the four years of the college course. While this fact is most encouraging, it will be apparent that the addition of these college classes has greatly increased the duties of the teachers, and some departments, notably those of Latin and Greek, modern languages, physics, and mathematics must be assisted at an early date.

There were 14 graduates from the several departments, distributed as follows:

Preparatory school	7
Normal school	3
Commercial school	2
College of letters and science	1
Music school	1

The character of the work done by the students was maintained at a high standard by the faculty, and was pursued in a most satisfactory way. The relations between the students and the faculty were most pleasant and harmonious.

Assembly exercises have been held regularly for a half hour every day during the year. These exercises on Mondays and Fridays consisted of the rhetorical work of the students. On Wednesdays the assembly was occupied by the general instruction in music, under the direction of Prof. T. L. Krebs. Tuesdays and Thursdays were given to lectures by members of the faculty and persons of note from the outside.

The college paper, the U. N. M. Weekly, was issued regularly by the students and was a credit to the editorial staff and represented well the literary and journalistic attainments of the student body. It will compare favorably with the weekly papers of many institutions of learning which have many times the number of students.

Several gifts and prizes of minor value were presented to the university during the year. While these do not aggregate any great sum, they nevertheless serve to show that the university has many friends interested in its welfare and in that of the young men and women who are here obtaining their education. The work of the class room is most important, but the research done in the scientific laboratories has received a substantial recognition beyond the borders of the Territory.

BUILDINGS.

The material equipment of the university has not been enlarged during the year. The present buildings include the administration hall, which is a large commodious four-story brick building. The first floor contains the executive office or reading room, the library and three large and well-furnished recitation rooms. The second floor contains four recitation rooms and two offices. The third floor is occupied by a large assembly room. The basement contains the heating and ventilating plants, janitor's rooms, and two large rooms now being used as ladies' and gentlemen's lunch rooms.

The Hadley climatological labratory serves as the home for the science work of the university, and, as you are already aware from former reports, was presented to the university as a gift, largely contributed by Mrs. Walter Hadley, and was established for the exact purpose of investigating the climate of the arid plateau of New Mexico in relation to disease. A broad view is taken of the scope of this work, and many correlated subjects are under consideration. This laboratory occupies a unique position in the field of science, as it is the only one in the country having this special object in view in its founding. That the work done in the laboratory is meeting the expectations of men of science at large and calling attention to the special advantages offered by the healthful climatic conditions of New Mexico, is manifest. Through the labors of Prof. John Weinzirl, the vice-director, the trustees of the Elizabeth Thompson science fund of Boston have been so attracted to this field of work, which is of such far-reaching importance to the whole human race, that they have awarded two gifts to the labratory, of $125 each, for the years 1903 and 1904, to be used in the investigation under way.

The gymnasium is a substantial building 30 by 50 feet. It is provided with the best of apparatus, which has been added in the past year. Provision is made for physical measurements and record. The physical-culture work is under expert

supervision, both for the young men and the young women. Outdoor athletics are encouraged within the bounds of moderation.

The ladies' cottage, which was formerly the residence of the custodian, served during the year as a general boarding hall, and for the accommodation of a few young ladies.

LIBRARY.

The library contains about 6,000 bound volumes and about 1,000 pamphlets. The Dewey system of cataloguing is used, and the reading table in connection with the library has upon it a good supply of the best current periodicals and papers.

UNIVERSITY GEOLOGICAL SURVEY.

Following the plans pursued for many years, considerable field work in geology has been done during the past year at private expense and in connection with the field instruction of the classes in geology, but, for lack of funds, the results of the work have not as yet been published. This work was largely confined to the Sandia and San Pedro mining districts, the vicinity of the Albuquerque volcanoes and adjacent mesas, and the saline lands of the Pecos Valley and the white sands region near Alamogordo. Some very interesting results have been secured.

COURSES OF STUDY.

It will be noted from the catalogue of the university for 1904–5, which is a part of this report, and from former reports, that from the time of the organization of the university up to the present there has been a rapid increase in the amount and variety of the studies offered and in the standard of entrance requirements. This year has been a substantial advance along these lines. The requirements for admission to the preparatory school have been brought up to those of the best academies and high schools of the country. No students are now admitted who have not completed the work of the eighth grade of the public school of recognized standing. The preparatory course, which was three years in duration, was two years ago increased by action of the board of regents, on recommendation of the faculty, to four years. Students who complete the preparatory course are now prepared to enter the freshman class of this or any university in this country. The commercial and normal courses have been also strengthened.

The college course embraces four years of work, as heretofore, but the plan of studies has been so changed that a greater freedom of selection within prescribed limits is granted to the students, thereby tending to adapt the course of study more nearly to the individual characteristics and needs of the student.

The standard of work done in four years in the preparatory school and four years in the college places this university alongside of the State universities in the land. Your special attention is called to the effect which the constant raising of the standard of the work has had on the attendance of the school in point of members. It is a well-recognized fact that the per cent of scholars who remain in school steadily decreases from the primary grades to the high school, and the same law holds good for the higher work of the college. It is therefore a source of congratulation to the people of this Territory that with the increasing standard of requirements the university has maintained about the same average attendance of students. Now that the work is up to the recognized standard of the land, it may confidently be expected that the next few years will see a very substantial increase in the number of students enrolling in the university. It is believed that the regents have shown their wisdom in constantly developing their curriculum at the expense of large numbers, until now the university stands where it was intended by its wise founders that it should stand—at the head of the system of public instruction of the Territory, leading directly on from the last year of the high school through college. At the same time it has been found necessary to maintain the preparatory school to meet the demands of large numbers of our youth of both sexes, who are not so favorably located that they may have the advantages of a high school training.

FACULTY.

The faculty for the school year 1904–5 included William G. Tight, Ph. D., president, professor of geology; Josephine S. Parsons, principal of commercial department; Charles E. Hodgin, B. Pd. dean, professor of education; John

Weinzirl, M. S., director of Hadley climatological laboratory and professor of chemistry and biology; Ethel A. Hickey, A. B., professor of English; Rupert F. Asplund, A. B., professor of Latin and Greek; Aurelio M. Espinosa, Ph. B., professor of Romanic languages; Walter E. Rowe, B. S., professor of physics and mathematics; Julia D. Brown, A. B., librarian and instructor in history; Mabel S. Himoe, professor of piano and musical history; T. L. Krebs, B. A., professor of voice and harmony; Elizabeth Powers, instructor of piano; John H. Crum, instructor in expression and physical culture; Olivia M. Birtwell, B. D., instructor in musical kindergarten; Lillian G. Huggett, student assistant; Kate Cunningham, stenographer, and Kate Kelley, matron of ladies' cottage.

The following changes were made in the faculty for the year 1905–6: Julia D. Brown, resigned; Walter E. Rowe, resigned; M. F. Angell, elected professor of physics and mathematics; Della Sisler, elected librarian and instructor in history; Lena Faber, stenographer.

I take pleasure in saying that the professors are persons of high training, and, with but few exceptions, have had large experience in university work in older institutions. With such a competent faculty in our Territorial university, there is little need of our people sending their children to distant schools, where, as a matter of fact, they often come under the instruction of less qualified teachers.

IMPROVEMENTS.

During the year a large amount of general repair work was done, including outside painting and inside finishing. A complete water plant has been installed, and a well sunk to the depth of 250 feet, where a large vein of excellent water was struck. A large-sized aerometer windmill is used to lift the water. This plant gives to the university a largely increased water supply and greater fire protection. During the year 15 new hydrants, with the necessary piping, were placed to facilitate the irrigation. In compliance with the governor's proclamation, Arbor Day was celebrated by our students, and about 100 trees were set out upon the campus and provision made for their irrigation.

NEEDS.

But little progress has been made in meeting the needs of the university in its growth since my last report to you, and I therefore would repeat my statement of these needs, which are even more pressing than last year.

In pursuance of the instructions of the board of regents, during the summer of 1902, several rooms in the administration hall were furnished for the accommodation of young men, and the cottage which was vacated by the resignation of Mr. Custers as custodian, in June, 1902, was fitted up for use as a dining hall, and a few rooms on its second floor were furnished for young women. These arrangements were also maintained during the past year.

The rooms given up for this purpose are very greatly needed for recitation rooms, and it is essential that this arrangement be only temporary. All the available rooms for both young men and women are taken, and the dining room is crowded beyond its capacity, about 30 boarders being accommodated at the present time. The success of this experiment is certainly added evidence of the very great need at this school of suitable dormitory quarters.

With the opening of the present school year the demands for enlarged recitation facilities were so imperative that it was found necessary to remove the young men from the room occupied as dormitory quarters in the main building. A large private house near the grounds was leased, and is now occupied by the young men as a dormitory. This very inadequately supplies the needed room.

Many parents who would gladly avail themselves of the advantages which the university offers their children for higher education, refuse to send them here, where they would be exposed to the temptations of city life, preferring to send them to other schools outside of the Territory where they will be under the full charge of the university authorities. The present arrangement only partially meets this need, and it is earnestly hoped that larger provision can be made by the opening of the next school year.

The university geological survey, as has already been stated, has done some work in this line during the year, but it is earnestly hoped that means may be provided whereby this branch of the university, so important to the development of the Territory, may be carried forward and the results published for distribution.

EQUIPMENT.

The Hadley climatological laboratory furnishes a most admirable home for the science work in the university, but the laboratories are very greatly in need of added equipment for more thorough instruction. The basement of the building should be furnished at once, and with a comparatively small outlay a fair equipment of apparatus could be provided to meet the present needs. This want is most felt in the physical and electric lines, where the demand for more thorough and extended laboratory instruction is imperative. This is of the utmost importance, and, in view of the great part which electricity will undoubtedly play in the future development of our Territory, it is highly desirable that provision should at once be made for such work in the university.

The limited means available during the past two years for the conduct of the work of the university has greatly hampered its growth and development. The revenue derived from the present mill tax is not adequate, and it is most highly desirable—in fact, it is imperative—if the university is to grow to meet the demands of our rapidly increasing and more exacting population, that the regular income of the university be enlarged.

Permit me to say, in closing, that I consider the work of the university during the past two years has been most gratifying, and that the prospects for the near future are very promising. The university is certainly a credit to the Territory, and should be the pride of every citizen who assists in its maintenance.

Very sincerely,

W. G. TIGHT, *President.*

REPORT OF THE PRESIDENT OF THE NEW MEXICO COLLEGE OF AGRICULTURE AND MECHANIC ARTS.

The only change that occurred in the board of regents during the year was caused by the removal from the Territory of Rev. W. A. Cooper, who sent in his resignation to take effect the 1st of September. He was deeply interested in industrial education and had proven a very valuable member of the board. The board at present consists of the following members: Granville A. Richardson, of Roswell, president, whose term expires in 1905; Herbert B. Holt, of Lascruces, secretary and treasurer, whose term expires in 1908; Seaman Field, of Deming, whose term expires in 1906; Jose Lucero, of Lascruces, whose term expires in 1907; J. M. Webster, of Hillsboro, whose term expires in 1909. Ex-officio members: Miguel A. Otero, governor, Santa Fe, and Hiram Hadley, superintendent of public instruction, Santa Fe.

FACULTY.

With a single exception, the faculty of instruction remained the same throughout the year. Prof. Charles Mills, who had been connected with the institution for more than ten years, resigned his position as head of the mechanical engineering department at the close of the first term on account of the continued ill health of his wife. After this change the faculty was composed of the following members: Luther Foster, president and professor of political economy and psychology; Clarence T. Hagerty, professor of mathematics and astronomy; Elmer O. Wooton, professor of biology and in charge of geology; Francis E. Lester, registrar, and principal of the department of stenography; John D. Tinsley, professor of physics; Alice Horning, professor of domestic science, dean of women, and matron of the women's hall; John J. Vernon, professor of agriculture and superintendent of grounds; D. M. Richards, principal of the preparatory school; Merritt L. Hoblit, professor of Spanish and Latin; Raleigh F. Hare, professor of chemistry; John R. Macarthur, professor of English and history; Fabian Garcia, professor of horticulture; Eaton A. Edwards, professor of military science and tactics; Charles E. Paul, professor of mechanical engineering and superintendent of buildings.

OTHER OFFICERS.

During the fore part of the year vacancies occurred in the following positions: Mr. Frank O. Woodruff resigned his position in the chemical department to accept work with the United States Agricultural Department; Mr. Amos E. Lovett discontinued the work as assistant in irrigation to accept a position in the Indian service; and a vacancy was created in the department of vocal music by the death of Miss Honora Murphy. These vacancies were filled as early as

practicable, and for the rest of the year the instructors, assistants, and other officers were composed of the following membership: Geraldine Combs, assistant in the preparatory department; Archibald B. Sage, assistant professor in mechanical engineering department; Charlotte A. Baker, librarian and assistant in English; Frances E. Blakesley, assistant in preparatory department; John O. Miller, assistant to the registrar and in the department of stenography and typewriting; Elizabeth E. Shimer, assistant in preparatory department; Pinckney Ford, assistant in the department of stenography, and college stenographer; John M. Scott, assistant in animal husbandry; Florence J. Foster, instructor in domestic art; Elmer I. Chute, assistant in mechanical engineering; S. Reynolds Mitchell, assistant in the chemical department; Martha A. Bennett, instructor in piano music; Maud Morrison, instructor in vocal music; Margaret Mackenzie, housekeeper of women's hall; Thos. B. Green, assistant in irrigation.

YEAR'S WORK.

Notwithstanding the adverse conditions in the Territory last summer, resulting from a general drought over the Southwest, and consequent scarcity of money, the attendance was greater than for any previous year since the organization of the institution. The total enrollment reached 237 students. Their average age was 18 years, and they represented 14 counties of New Mexico and 14 States, Territories, and foreign countries. Seventy per cent of these students came from beyond the immediate vicinity of the college, and a very much larger per cent than formerly entered advanced classes. Both in the character of the work and the amount accomplished decided progress was made.

As now organized, this institution offers a four years' preparatory course, which prepares for any one of the four regular college courses. All of these courses require four years for their completion. In addition to these, short courses are offered in agriculture and mechanic arts, and in stenography there are three courses—English stenography, advanced English stenography, and Spanish stenography. Degrees are conferred and diplomas are given only to those who complete one of the full four-year courses. Last year 6 students were graduated with the degree of bachelor of science, and the degree of master of science was conferred upon 1. Of the 6, 3 pursued the agricultural course, 2 the general course, and 1 the mechanical engineering course. As indicating the demand that exists for graduates from institutions of this character 5 of the 6 who completed the courses were offered positions in their own institution, either in fellowships or positions of assistants, and only 3 accepted, the other 2 having something better in view. Sixteen students finished the four-year preparatory course and will enter the regular college courses at the beginning of the next term. Eleven students completed the stenography course, and all of them now have positions in that line of work. The graduates of the stenography department are in great demand. Its students are filling positions in 16 States, Territories, and foreign countries.

The following is a brief synopsis of the work carried on in the various college departments during the year: Thirty-three students were enrolled for studies in the agricultural department. Of these, 29 were regular and 4 special. Instruction was given in the following subjects: In animal husbandry there were classes in breeds of live stock, principles of stock feeding, principles of stock breeding, dairying, and diseases of live stock. In agronomy the following subjects were considered: Elementary agriculture, soils and crops, rural engineering, rural economics, and practical agriculture.

The work of instruction in the horticultural department was very heavy, considering the fact that it was all given by one professor. The work, however, was very satisfactory, the one drawback met with being the lack of suitable laboratory room. The following is a list of the subjects taught: Floriculture, consisting of the theory and practice in taking care of house plants, mixing soils, potting, repotting, taking cuttings, and arranging flowers in bouquets. Greenhouse management, in which students were taught the principles underlying greenhouse and cold-frame work and their practical application. Pomology, which included all the subjects relating to fruit growing, such as pruning, spraying, and judging and describing fruit. Economic entomology, in which special attention was given to injurious insects and the means of destroying them. Elementary horticulture, in which only the elementary principles and more simple laboratory operations were taught. Greenhouse construction, in which special attention was given to the principles of greenhouse, hot-bed, and cold-frame construction, their limitations and adaptations to this region. Plant

breeding, in which the following topics were investigated: Selection, crossbreeding, variations, and the influence of environment. Advanced horticulture, which made strong features of the following subjects: Seedage, layerage, cuttage, and graftage. Forestry, covering the following subjects: Wind-breaks, home planting, and utility of forest plantations. Olericulture, which embraced the general principles underlying vegetable culture, practical work in planning and laying out vegetable gardens, preparing seed beds, planting, transplanting, and irrigation. Landscape gardening, in which the laying out and planting of home grounds was the chief consideration. In these various classes 33 students were enrolled, 4 special and the rest regular students.

The work of instruction in the department of biology and geology included the following subjects: Zoology during the first two terms, in which two hours per week were given to lectures and six hours to laboratory exercises. In this subject the principal topics considered were elementary principles of life, the cell, its parts and functions, types of vertebrate and invertebrate animals, their gross anatomy, and comparative morphology. Geology, in which one term was devoted to general structural and dynamic geology and one to historical geology. Advanced botany, in which the morphology of plants was studied by means of representative types. Elementary botany, which included a general treatment of flowering plants, their structures, functions of parts, simpler classification, distribution, and economic uses. Bacteriology covered the subjects of bacteria of water, air, soil, and foods, and those causing fermentation and disease, and the preparation of culture media and cultures. Plant physiology, in which the subjects taken up were relations of plants to their environment, composition of the plant body, its changes, constructive and destructive. Advanced human physiology included lectures, demonstrations, and recitation on the anatomy, histology, and physiology of the human body. The total number of students enrolled in the work of this department was 45, all of whom were regular.

In the department of physics 10 students were enrolled, and instruction was given in the following subjects: In general physics, covering the properties of matter, mechanics of soils and liquids, sound and light, electricity and magnetism. Soil physics, covering origin and physical character of soils, with laboratory and field practice in soil sampling, determination of moisture and salt content, water-holding power, mechanical analysis, classification, and mapping. Meteorology, including the structure and uses of meteorological instruments and the phenomena having most direct bearing on agriculture.

Thirty-three students were instructed in the different branches of the chemical department. The subjects pursued were as follows: Elementary and general chemistry; organic chemistry; agricultural chemistry, in which such subjects as animal nutrition, plant food, and fertilizers were studied, and the composition of agricultural products, waters and soils determined; advanced inorganic chemistry; mineralogy, special attention being given to the ores and other minerals of commercial value, and metallurgy.

In the department of domestic science and art, instruction was given in all the subjects offered in the regular course, besides in a few additional special lines of work. The following is a synopsis of the work done in domestic science: Cooking—this included the cooking of vegetables, meats, eggs, breakfast and starchy foods, proteids, and cooking for and serving the sick, the making of bread and cake, hot breads, desserts, salads, etc.; special physiology and hygiene, dietetics, canning and preserving fruits and the principles underlying it; jelly, pickles, and catsup making. Home sanitation, covering the subjects of heating, lighting, and ventilation; the chemistry of foods and chafing dish cookery. Domestic art students were engaged in the following work: Sewing, which included all kinds of stitching, mending, darning, making of garments, and the use of a machine and its attachments; drafting by the Jewel tailor system; art needlework, including all kinds of embroidery, drawnwork, and lace making; dressmaking, covering the subjects of designing, cutting, fitting, and finishing.

In the department of English and history 97 students received instruction. The subjects pursued were as follows: Literature, which included the discussion of literary principles and a careful study of masterpieces of noted authors, and the English drama, English poetry and fiction; composition and rhetoric, embracing a thorough drill and practice in composition, special stress having been laid on the form, style, and thought of the writer; classification, including use of books and library work, bibliography in both assigned and selected subjects, and commercial English for students of stenography; general history,

in which histories of Greece and Rome, England, and the Middle Ages were studied; history of civilization, in which a study of European civilization and the elements that have influenced existing civilization was made.

In mathematics and astronomy classes were organized in the following subjects: Elementary and higher algebra, plane and solid geometry, plane trigonometry, analytical geometry, general astronomy, in which regular observations were made by the use of the equatorial telescope and the engineer's transit, provided with solar attachments; surveying, with regular field practice; and calculus. Eighty students were enrolled in the various classes.

The mechanical engineering department enrolled 51 students in its various classes, and in the shops instruction was given in wood turning, pattern making, carpentry, blacksmithing, bench work in iron, and machine work; in the drawing room there were classes in free-hand and mechanical drawing, descriptive geometry, and machine design; in the recitation room instruction was given to classes in elementary mechanics, steam boilers, engineering structures, descriptive geometry, applied mechanics, hydraulics, steam engines, mechanism, analytical mechanics, and electrical engineering; in the engineering laboratories classes were instructed in testing strength of materials, steam and electrical apparatus.

Thirteen students were enrolled in political economy, and they were made sufficiently acquainted with the economic conditions affecting public questions of the day to judge of them intelligently. Six took the work in psychology, which gave a general knowledge of the elements of this subject.

The popularity of Spanish was shown by the fact that 61 students were enrolled in the various classes last year. These included elementary Spanish, which gave practice in translation, theme writing, and conversation; novels, poetry, and drama, to equip the student for rapid and appreciative reading; and commercial Spanish, the aim of which is purely practical. It is especially intended for the assistance of Spanish stenography students. Instruction was also given in first and second year Latin.

The military department was in active operation during the school year. A new military officer, E. A. Edwards, lieutenant-colonel, United States Army, retired, was, by direction of the President of the United States, detailed as military instructor, and reported for duty September 28, 1904. The prescribed military course of three hours of practical instruction and one of theoretical instruction for each week for all physically qualified male students, except those of the junior, senior, and post-graduate classes, was followed. Attendance and discipline was good throughout the year, and fair interest was shown. The cadets gained a respectable amount of skill in the execution of the various military exercises and ceremonies, besides showing marked improvement in acquiring a military carriage and bearing. The instruction was progressive, and during the last term included target firing at 100, 200, and 300 yards, in which much interest was taken and satisfactory progress made. One hundred and fifty students received military instruction.

The work accomplished in the stenography department during the past year has been quite satisfactory. While the enrollment was not as large as that of previous years, perhaps due to less advertising, still it has been encouraging. Twenty-one students have taken the work in the department, the greater part of whom satisfactorily completed the year's work. It becomes increasingly evident that the advantages offered by the department in training stenographers in both English and Spanish are much sought after, and it would appear to be worth giving more attention to advertising these advantages.

In the preparatory department instruction was given in the subjects of the four years' preparatory course, which is intended to fit students for entrance to regular college work. The work of the lowest class of this department was discontinued at the close of the year, raising the grade of entrance to the institution by that amount. It is hoped that within the next few years the work of the preparatory department may be gradually decreased until a two years' course is all that it will be necessary to offer in this department.

The institution now supports a department of both instrumental and vocal music and offers consecutive courses of instruction in each. At present there is only one instructor in each line of work, but during the past year they had as many students enrolled as they could consistently undertake to instruct. 24 being enrolled in the instrumental department and 15 in the vocal. In addition, the vocal teacher gave instruction to a choral class numbering 40 and to two classes of the preparatory department numbering 50 each.

WHAT THE COLLEGE HAS DONE.

The agricultural college has trained upward of 1,000 young men and young women to be better citizens of the Territory; it has given them not a classical but a practical education, that has fitted them to take active part in the industrial life of the Territory. It has trained more of the native-born young men and women of New Mexico than all the other higher educational institutions of the Territory combined. During the first ten years in the work of the college the proportion of the native-born students was 7½ per cent; in the last five years it has been nearly 26 per cent.

It has aided the farmers and stock growers of New Mexico in a hundred different ways. It has answered literally thousands of inquiries from all over the Territory, asking for valuable information in regard to crops, natural conditions, etc. It has demonstrated new and economical methods of pumping for irrigation throughout the Rio Grande Valley and other locations. It has aided in the installation of many pumping plants. It has pointed the way to increased revenues from the land for the farmer. It has shown that $500 an acre profit can be made in the cultivation of onions. It has tested hundreds of varieties of cereals, fruits, and vegetables, and has furnished the farmer with information that has saved him much time and money.

It has shown by practical results what are the most effective methods of fighting the apple worm, the San Jose scale, the melon beetle, and other pests. It has pointed out the dangers in the destruction of the cattle range and recommended methods for its preservation and restoration. It has aided the farmer and the settler by advising him as to the quality of his soil and what it is best suited for. It has analyzed hundreds of samples of waters in the Territory and shown their fitness or unfitness for special purposes.

It has issued 55 regular bulletins of from 10 to 40 pages each and 105 press bulletins, and has distributed them free of charge to all citizens of the Territory who desired them. The bulletins are on the most vital and practical subjects of interest to the farmer and to the Territory's development.

It has conducted farmers' institutes in various parts of the Territory, at which subjects of vital importance to the farmer have been intelligently discussed by competent authorities. It has advertised New Mexico. It has attracted immigration by showing the advantages of the Territory for certain enterprises. It has paved the way for the settler by giving him facts and results which have saved him years of labor and thousands of dollars.

The agricultural college has helped all of New Mexico and not one part of it alone. It has published, for example, a bulletin on definite results achieved in San Juan County; it has carried out valuable experiments in soil drainage and the removal of alkali in the Pecos Valley; it has shown conclusively that sugar beets raised in San Juan and Santa Fe counties are as rich in sugar as any grown in the United States, and has pointed to these localities as the best in the Territory for the establishment of beet-sugar factories. The college is not a local institution.

By the work it is doing and by the close touch into which its work is brought with the people and the industries of our Territory, the agricultural college is justly entitled to be known as the people's institution.

EXPERIMENT STATION.

The year has been one of general success in all departments of the station, the only interference with the work being caused by the scarcity of water in the Rio Grande and the resignation of some of the assistants to accept better positions. The station is gradually coming into closer contact with the farmers and the agricultural and stock-growing interests of the Territory generally. Its helpfulness to them is apparent on every hand in suggesting better methods, a greater variety of crops and those more remunerative, and in leading to the better understanding of the soils and the relation of the different classes of the soils to the different special crops best suited to them.

STATION STAFF.

The force of investigators connected with the experiment station is also engaged in the work of instruction in connection with the college, and this double duty requires their presence at the institution constantly, the work differing in this respect from that of those who give their time and attention to teaching only and have the three months' vacation for improvement, rest, and

recreation. These investigators are all capable and energetic, and are accomplishing much important work for the Territory in their respective departments.

The fact that our assistants are called to positions paying higher salaries indicates that they are worthy and capable, and that no mistake was made by this institution in their selection as members of its force. Still, every change results in loss of time in the experiments under the assistant's charge, and it is very desirable that men who prove satisfactory be retained as long as possible; but I realize the fact that our institution is not in a position financially to meet the salaries offered by many of the older, better-endowed stations, nor can it compete with the Bureaus of the United States Agricultural Department.

PROGRESS AND DEVELOPMENT.

Since the establishment of the station in 1890 its development has been brought about entirely without any financial aid from the Territory. On this account its growth has been very gradual. From a small beginning, with a few indefinite, unsettled lines of work, it has expanded to important fields of research, carried on under fixed policies, with skillful direction and management. Its income has not kept pace with its development. That has remained the same since its organization. Had the Territory been able to add a fair amount annually to the national fund, the more important lines of investigation could have been developed much more rapidly, and decisive conclusions could have been reached in a much shorter period. It is only recently that the scope of the station work is becoming generally known and understood, and the results of its investigations appreciated. The station has become an essential factor in agricultural practice and farmers look to it more and more for information as to methods to follow in crop production, stock growing, or for the solution of the various difficult problems with which they are continually confronted.

The progress and development of the station is shown in numerous ways. First, by the increased interest of farmers all over the Territory, as well as outside of it, in the work, as shown by the increased correspondence in all departments, indicating a tendency among farmers to make a greater use of the station. Second, by the increased amount of material resulting from investigations for publication. Three years ago it was difficult to secure enough matter of legitimate character for the required four bulletins; now we have so much good material, resulting from original work, that it is difficult to find time to satisfactorily write it up and to secure money for its publication. Third, by the increased demand for bulletins, which makes an enlarged issue imperative. Other points that may be mentioned are the more complete equipment for investigation, the necessity of adding more assistants, the better organization and systematizing of the work, giving to each individual fewer lines to pursue and making the teaching less burdensome, all of which makes it possible to do more and better work; that is, we are concentrating the energies of the station and making the work more definite.

INVESTIGATIONS INAUGURATED.

Among the investigations recently inaugurated may be mentioned the duty of well as compared with river water; cost of pumping on different crops; effects of temperature of irrigation waters upon crops; fertilizer experiments, in which the chemist and the agriculturist and the chemist and the horticulturist cooperate; tests of various native grasses and other forage plants, for use as pasture grasses, for range improvement; test of germination of seeds of native grasses; determination of available seeds in the commercial seeds as bought; tests of various native decorative plants; collection of negatives of native plants of economic value, as well as of range conditions, weeds, etc.; investigations in regard to the grape crown gall have been carried on to ascertain the source of disease and its fatality; testing the Wallace power sprayer; cultural methods of potato growing; forcing tomatoes, cucumbers, and cantaloupes out in the field.

RESEARCH AND INSTRUCTION.

The union of the experiment station with the agricultural college is mutually beneficial to both. The principles and facts obtained as results of investigations in the station are at once made use of by the instructor in his college classes, or the student himself may take part in the research work and make the new discovery for himself. Any college in which instruction in the sciences is made prominent will have its work strengthened by the addition of original

research to which the principles learned in the sciences may be applied. Students of science are peculiarly fortunate who have the opportunity to pursue their studies in a combination institution of this character, where instruction and experimentation go hand in hand.

FARMERS' INSTITUTES.

The farmers' institute is an essential adjunct of the agricultural college and experiment station, since only through it can the results and work of the station be made known and thoroughly understood by the farmer, and since only by this means can the station workers become familiar with the perplexing problems that confront the farmer and be enabled to assist in their solution. The institute should be made the farmer's school through which he learns new methods new principles, and facts, brought to light by the experiment station, and their application to practical agriculture. The work in this Territory has been limited by the lack of funds. Meetings have been held in only a few of the more important agricultural districts. The work could be very profitably extended at a small cost to the Territory, and the legislature should be induced to make a special appropriation for the extension of these institutes, at least one meeting of two or three days' duration should be held at some central point in every county of the Territory where agriculture and stock growing constitute the chief industries. Station workers, stock growers, and farmers are brought together at such meetings and the interchange of ideas proves of much benefit to all. The station worker learns of the farmer's needs and can thereafter more satisfactorily serve him, and the farmer receives directly from the experimenter the results of the work already done. Since at least two-fifths of the population of the Territory are engaged in agricultural pursuits, every advantage possible should be afforded them to assist in bringing their work up to the highest standard of excellence. They should not only be given the full benefits of the work of the experiment station, but they should also have an opportunity to profit from the experiences and views of each other. The farmers' institute brings them together, they compare notes, and the work of the following season is made better as a result.

LINES OF WORK.

The botanist carried on a series of cultivation experiments to determine what of our native grasses promises most for purposes of cultivation, either as hay or pasture grasses, and tested a number of native plants which are believed to have decorative value. During the summer months he made an overland trip up the west side of the Territory and returned through the central part, examining the ranges, collecting data as to their condition, carrying capacity, and collecting native cacti for chemical analysis in cooperation with the Division of Agrostology, United States Department of Agriculture. He also collected data on the distribution and character of our forest resources, and made tests of the seeds of numerous western species of grasses, which indicates that they differ greatly in vitality and that in some species much of the material sold as seed is in reality chaff.

In the department of soils and physics, the principal work was the study of soil moisture, its amount and distribution, its relations to the amount of water applied to the soil, and the yields of wheat and alfalfa. With wheat, the chief objects were to determine the effects on the yield of different numbers of irrigations and amounts of water applied after heading, the relations between the amount of water applied and soil moisture, and the depth to which the water penetrated. One object of the work with alfalfa was to determine the advisability of heavy irrigations in the spring, sufficient to thoroughly moisten the soil before the crop growth begins. This department made a detailed study of the physical character of the soil of a set of alfalfa plats. These studies embraced the weight per cubic foot, water capacity, mechanical analysis, specific gravity, apparent specific gravity, and porosity to a depth of 6 feet, and the plan of stratification of the soil. It also conducted a series of experiments on the colorimetric method of determining nitrates in the soil, introducing modifications which will enable it to take up the study of nitrates in the soil, which has not been previously studied here. The usual meteorological observations were also made, recorded, and reported.

The following is a brief statement of the experiments carried on in the agricultural department: In irrigation, the duty of water on the following crops—alfalfa, wheat, corn, and sweet potatoes; the cost of pumping for irrigation on

the same crops; the study of the effects of well water on alfalfa; a test of wells, in which a 6-inch well was compared with a 12-inch one as to the effect on the water table when pumping from 1,000 gallons to 1,800 gallons per minute, also as to the effect when pumping different amounts from the same well and on pumping from both wells at the same time; a test of the following pumps—Root's rotary, Hart's 12-inch pitless centrifugal, the Van Wie 6-inch centrifugal, and the Byron-Jackson 6-inch centrifugal. Other investigations included a variety test of wheat to determine those best suited to the climate; a pig-feeding experiment, conducted for the purpose of determining the best proportions of alfalfa hay and corn to use in fattening pigs for the local market; a stock-breeding experiment to show what may be done to improve a herd by the use of males of known merit and by rigid selection.

In the chemical department a number of miscellaneous analyses have been made of such substances as soils, waters, bat guanos, ores, and other materials; but by far the greater part of the time has been devoted to the curing, preparation, and analysis of nearly 200 samples of cacti. The cactus is coming to be used pretty extensively as a forage plant in certain sections of the Southwest, and the object of this investigation is to determine the most nutritious and, at the same time, the most suitable varieties to be used in certain sections. The cattlemen in some places rely largely on this plant now to carry them over dry seasons, and many of them, as well as the scientific world, are looking forward to the results of this work with considerable interest.

In horticulture experiments in fruit growing included the following: Observations on the blooming and ripening periods of varieties of orchard fruits; methods of pruning peach trees for best results in bearing; a variety test of foreign grapes, and a comparison of the trellis method of training vines with that ordinarily in use; an investigation in cooperation with the Bureau of Plant Pathology to determine what varieties of grapes will best resist the crown-gall disease. With vegetables, onion experiments were completed, and the results of three years' work published in both English and Spanish bulletins; an experiment in the use of commercial fertilizers on onions was started; the forcing of tomatoes in field cold frames gave encouraging results, and the work in chili culture was enlarged; experiments in Irish and sweet potato growing were continued, and tests were begun with peanuts, beans, and celery; special attention being given in the latter case to methods of germinating the celery seed. In forestry, a new plantation was made, which includes numerous varieties not before tested. Experiments with ornamental trees, shrubs, and flowers were continued.

EQUIPMENT.

The station is now well equipped in all of its departments for successful work. Among recent additions are a 40-horsepower steam boiler and engine, a 22-horsepower crude-oil engine, and the following makes of pumps: Roots's rotary, Hart's 12-inch pitless centrifugal, Van Wie centrifugal, Byron-Jackson centrifugal, Wood's centrifugal, Fairbanks-Morse centrifugal, Johnson rotary, and Kingsford centrifugal, for use in the experiments of pumping for irrigation; a farm of 240 acres secured for the purpose of extending the irrigation investigations, and to provide pasture for the stock used in class work; 23 acres of land for the special use of the horticultural department for the extension of experiments in truck gardening, small-fruit culture, and orcharding. In all departments numerous additions have been made to the apparatus of the laboratories and to the libraries. The herbarium has been largely increased. It now consists of 12,000 mounted specimens of ferns and flowering plants and 2,000 fungi. It is the intention to make this herbarium as complete a collection of the plants of the Territory as possible, particular attention being given to making the representation of the grasses and forage plants very complete.

PUBLICATIONS.

The demand for the station bulletins and reports steadily increases. They are now sent to ranchmen and newspapers in every county of the Territory. They also go to all agricultural papers and agricultural colleges in the United States, and to many foreign stations and public libraries, but their special value lies in their application to the practical farm and range problems of New Mexico, and to the Southwest in general. The publications for the year were as follows: The fifteenth annual report, by the director; Bulletin No. 52, Onion Culture (English and Spanish), by Fabian Garcia; Bulletin No. 53, Pumping for Irrigation, A Fuel Test of Crude Oil, Kerosene, and Gasoline, by John J. Vernon,

Francis E. Lester, and Henry C. McLallen; Bulletin No. 54, Soil Moisture Investigations for the Season of 1904, by J. D. Tinsley and John J. Vernon; Bulletin No. 55, Tuberculosis in Cattle and Tuberculin Tests of the Station Herd, by John M. Scott. Press bulletins: A Practical Bulletin on Stock Feeding, by John J. Vernon; Regarding Bulletin 51, by E. O. Wooton; Irrigation Problems, by J. D. Tinsley; Pumping for Irrigation, Relative Value of Fuels, by John J. Vernon; Cold Frames, by Fabian Garcia; The Poultry Industry in New Mexico, by John J. Vernon; Classes of Poultry, by John J. Vernon; The Improvement of the Scrub Hen, by John J. Vernon; Dairying in New Mexico, by John M. Scott; Feeds and Feeding for Egg Production, by John J. Vernon; Relation of Frosts and Air Drainage to Fruit Growing (English and Spanish), by Fabian Garcia; The Movement of Underground Water in the Mesilla Valley, by J. D. Tinsley; Starting Celery Seed, by Fabian Garcia; Poultry Diseases and Insect Pests, by John J. Vernon; Poultry Bibliography, by John J. Vernon.

Very respectfully, yours,

LUTHER FOSTER, *President.*

REPORT OF THE PRESIDENT OF THE NEW MEXICO STATE SCHOOL OF MINES.

The school year just closed has been the most satisfactory one in the history of this institution. In the internal organization of the school there has been substantial growth. All departments have been brought into closer accord than ever before. The school's influence outside has been greatly extended. Plans have been devised by which the institution will be kept in close touch with the various mining interests of the region. There has been a rapidly growing appreciation among all grades of schools of New Mexico for the work of the mining school and the exceptional advantages that it now offers. Particularly gratifying has been the notice the institution has received from nearly every section of the Union and even abroad.

As stated last year, a number of additional practical features were beginning to be incorporated in the work of instruction. Owing to a number of unusual features in equipment, some novel departures in the matter of instruction, and exceptionally favorable conditions in environment the mining school has attracted wide attention throughout the land. This is well shown by the numerous public press notices, letters of inquiry, and especially by the large number of students desiring to avail themselves of the special opportunities now offered by New Mexico. The last-named feature is most gratifying. When the people of the country can turn to New Mexico for superior advantages in education, with the older institutions of the East in active competition, it is, indeed, a consideration, the contemplation of which gives rise to feelings akin to those of pride.

POSITION OF THE SCHOOL OF MINES IN THE STATE EDUCATIONAL SYSTEM.

The position which the school of mines holds among higher educational institutions is unique. From the intrinsic character of its work, and the high standard that it must necessarily hold to before it can rank with other similar schools of the country, the requirements for matriculation in regular courses are far in advance of what is ordinarily necessary in high school and college work. The regular student begins somewhat in advance of standard college admission. The schedule of studies is more exacting, the amount of work much greater. Practical experience is an important and necessary acquirement. Ability of the graduate to do independent and original investigation is a desideratum. The course of instruction is adapted largely to individual tendencies.

As an institution of learning the school of mines, in its field of instruction, is commonly considered to be entirely outside of the ordinary college and university. Indeed, it expects to draw upon the graduates of these institutions for the principal part of its student body. The school of mines is thus a strictly professional institution, comparable to the school of laws or the school of medicine. The field which the mining school occupies is, from a technical standpoint, a most important one. In a mining State, such as New Mexico, the mining school must always remain a leading educational institution.

In the training offered by the school there is noteworthy concentration of effort. There are many advantages in the direction of effort along few lines.

In contrast with the many diversions that necessarily exist in most technical institutions of learning, where all practical branches are equally represented, singleness of purpose is a leading feature in the New Mexico School of Mines. The student body in all its parts becomes immensely more sympathetic. The workings are more perfectly harmonious. Instruction is more advantageously given.

CHARACTER OF THE ATTENDANCE.

The total enrollment of regularly matriculated students in the technical courses during the past year has been by far the largest in the history of the institution. With the raising of the standard of requirements there has been a corresponding improvement in the intellectual character of the applicants for admission. The results arising from this change have been noteworthy. The good effect upon the student body has been a matter of congratulation.

The marked increase in the attendance of technical students has a greater significance than the number itself might at first glance indicate. The previous training of the applicants for admission has been more thorough and far more extensive than in any previous year. Among those enrolling were a number who were already college graduates.

RAISING OF THE REQUIREMENTS FOR MATRICULATION.

In the complete reorganization of the institution two years ago a number of radical changes had to be made in the schedule of studies. Some fifty new courses were added. A considerable number of the old courses were abolished. Those that were retained were greatly modified. Along with these alterations came decided changes in the entrance requirements and the requirements for graduation. These modifications in the courses of instruction could not all be accomplished at once. There was a necessary gradual fitting on of the new plan to the old one. The features of the latter were eliminated as rapidly as possible. The new year starts out with all of the old features entirely done away with.

The standard of work now demanded by the New Mexico School of Mines is the same in all essential features as that found in the best mining schools of the world.

The main requirement for matriculation in the New Mexico School of Mines is a satisfactory demonstration that the candidate is amply prepared to profitably carry on the courses which he desires to select. Perusal of the outlines of courses offered soon gives an adequate idea of what is necessary in each case. Formal examinations may be held. The necessary preparation is afforded by the training received in the best high schools of the country. The ordinary requirements for entrance to colleges of acknowledged standing admit also to this institution. Special attention is called to the mathematics. Thorough preparation is of prime importance, in order that the student may secure the full benefits of his studies. In the school of mines the time of the student is fully occupied. There is little time to make up deficiencies.

Admission to advanced standing is based upon similar grounds. In case the demonstration of fitness to undertake advanced work is not satisfactory, examinations may be given in any or all subjects below those in the courses to be pursued. Undergraduates of other colleges may receive credits for the work already done, so far as it can be made equivalent to that required in this institution, in the courses specified. The applicant's knowledge of mathematics will determine his class rank, conditions being allowed in other subjects. College graduates intending to take up professional courses will be admitted as regular students of advanced standing, and at first credits will be given provisionally for work already done along the lines of professional courses.

In several of the departments of study the opportunities afforded by New Mexico for college graduates to undertake original investigations and follow special lines of work are so exceptional that the school encourages efforts of this kind in every way possible. Whether or not the student intends to become a candidate for the higher academic degrees in this or other institutions, the same care will be taken to give him every facility to further his work.

Admission as a student in the special courses offered has only a single test in each case—that of furnishing satisfactory evidence that the applicant is qualified to follow the chosen course.

Teachers and persons of mature age engaged in technical pursuits are offered every opportunity of the lecture room and the laboratory.

THREE PRINCIPAL BRANCHES OF MINING ENGINEERING.

In its most complete development the profession of mining engineering must have specializing features. Besides having broad general culture, a mining engineer must be par excellence a mining engineer, and besides being a mining engineer he ought to know more about some particular branch of mining engineering than anyone else. This clearly alludes to the professional character of the occupation. With this plan in mind the courses in the New Mexico School of Mines are so planned that the student in his training may choose any one of three special branches of the subject. He may develop his talents along the mechanical side of mining engineering, along the metallurgical side, or along the geological side. All are equally important in modern mining, and the demands for specialists along each are rapidly becoming urgent among the large mining companies.

INSTRUCTION IN MINING ENGINEERING PROPER.

As outlined previously the mechanical side of mining engineering is emphasized somewhat more in this institution than it is possible to do when general courses are given covering imperfectly the whole field of the subject. The course in mining engineering aims to so symmetrically develop and train the student that he may be able to enter at once into the spirit of a mining enterprise, formulate complete plans for it, and see that the entire work is carried successfully to completion. The selection and articulation of the various studies are believed to be such as to properly adjust them to the main theme. It is believed that very nearly the due proportions of time are given to the theoretical aspects of the subject, laboratory demonstrations, field practice, and actual work in and about the mines.

The several departments of the school are drawn upon, each according to its relative importance in mining operations. The courses of study offered by each department are quite complete as a connected and dependent sequence on a given subject. But in the schedule for mining engineering, for example, only certain ones in each department are essential as bearing directly upon the mining profession. The laws and principles laid down by mathematics, mechanics, and physics form the foundation upon which the superstructure of the professional training is built. The natural sciences of mineralogy, geology, chemistry, metallurgy, and biology furnish indispensable data. Mechanical, civil, and electrical engineering subjects contribute largely to a complete mining course. Business capacity and a knowledge of men are necessary to a successful career in mining engineering.

During the entire period of his training the fact is impressed upon the student that intelligent mining is strictly a business operation; that mining is to-day as capable of being put on a secure business foundation as any manufacturing enterprise; that from start to finish it is a proposition akin to all the great business workings, such as enable the railroad train or the ocean liner to run with certainty and dispatch; that while "lucky finds" will continue to be made, mining as a business is no longer a vast lottery, ever developing to their fullest extent the gambling propensities of mankind.

By constant association with men entirely engaged in the mining industry the student is soon introduced to the practical features of his training, and long before he has finished his training at school he will have acquired from actual experience a rather broad knowledge of the requirements and opportunities of the mining engineer.

The exceptionally favorable environment of the school being such as to fit it to a preeminent degree for a mining institution, special stress is laid upon the value of practical work in the mines and about the smelters. To this end the summer practice is emphasized. The student goes into the mines and becomes thoroughly familiar with their operation, the problems coming up for solution, and the special mechanical devices which have been built to meet the local difficulties. In order to make this work particularly impressive and valuable arrangements are made with mine operators and managers whereby remunerative employment is given for a longer or shorter period to such students. It is expected that arrangements may be effected by means of which provision may be made for all students who wish to avail themselves of these exceptional opportunities.

INSTRUCTION IN METALLURGICAL ENGINEERING.

The second great branch of mining engineering is that which has to do with the treatment of the ores after they have been won from the caves of earth, by which they are made to give up their metallic contents for the use of mankind.

All of the work of the metallurgical engineering course is permeated by the strictly engineering spirit. In the general plan the wide, practical experience of a large number of managers and superintendents of plants in the metallurgical industries has been taken into account and the work arranged with a view of overcoming as much as possible many of the defects in the commercial training of technical men. The oft-repeated assertion that chemical manufacturers prefer a good engineer with no knowledge of chemistry to a good chemist with no knowledge of engineering is not so much gross exaggeration as most of us are apt to believe. The engineering bearing of every aspect of the work in this course is emphasized.

Another practical feature of this course is the research work insisted upon. The solution of practical problems is given a prominent place. The student in his third year is first required to repeat several pieces of investigation and to suggest any improvements that may occur to him. In his fourth year he is given actual problems that have not been worked out. From his various efforts he may choose one for his thesis, developing the whole subject and treating it exhaustively.

Students showing a special aptitude for research work are further encouraged by being assigned to work on the problems constantly being submitted to the officers of the school by mine operators and managers. Except when the problem is manifestly too intricate and difficult, this work is carried on under the immediate direction of the school and with the assistance of the mine superintendent. As a rule these problems are satisfactorily treated, and often important results obtained.

INSTRUCTION IN THE NEW BRANCH OF MINING GEOLOGY.

The mining man of to-day is deeply indebted to the geologist. It has been largely through the untiring efforts of the geologist that modern mining has been made as certain as any manufacturing enterprise. This is what may be included under the title of mining geology, or geology of mineral deposits. The important fact developed during the past decade among mining men is that a mining enterprise to be most successfully carried out is dependent as much upon the proper knowledge of the geological structure and nature of the district as it is upon the construction of the most carefully planned equipment.

In following out this branch a divergence from the regular engineering course begins early in the second year. A considerable knowledge of practical geology is necessary, and of the methods of field work and the principles underlying independent investigations. Besides the subjects acquired up to this time in mining engineering, a good knowledge of mineralogy and an ability to use the petrographical microscope are desirable.

In the field work required up to the second year special effort is made to put the student into contact with geological features with which he is afterwards most likely to meet in studying mineral deposits, their genesis, structure, and geological relations. He is then called upon to repeat some piece of good work, and is afterwards put upon original investigation. In many cases the latter is, as in the metallurgical courses, often suggested by problems submitted by mining companies. Moreover, the companies often employ members of the school for just this work, in which case the student is doubly repaid.

The thesis must show special merit along geological and strictly engineering lines, and must be published. New Mexico has a large number of problems suitable for this kind of work which are now awaiting solution.

THE FACULTY.

During the past year a number of changes have taken place in the personnel of the faculty. On the whole, the faculty has been considerably strengthened by the changes. This is especially true of the geological and mineralogical department and the department of chemistry. In the first-mentioned department the institution was fortunate in obtaining the services of Doctor Gordon, a gentleman of wide experience in educational work and a recognized authority in his chosen field. In the chemical department Professor Noble was called to take charge from the Armour Institute at Chicago. This gentleman brings with him a wide experience as a teacher in technical schools and a broad practical experience in chemical engineering and chemical technology generally.

Doctor Magnusson severed his connection with the institution to take charge of the physics department in the Washington State University. His post was fortunately filled by Professor Crenshaw, who has had wide experience in mechanical engineering.

As stated elsewhere, the faculty of the school of mines had in a previous year been brought up to a high state of proficiency, and a continued strengthening is a matter of congratulation and satisfaction.

MINERAL EXHIBIT AT ST. LOUIS.

The major part of the New Mexico mineral exhibit at the Louisiana Purchase Exposition at St. Louis consisted of the collections prepared by the school of mines. The display occupied a prominent place near the center of the palace of mines and metallurgy. As the only exhibit of the kind made by a mining school it attracted wide attention.

The display was planned to center around a large colored relief model of New Mexico on a scale of half an inch to the mile, or nearly 20 feet square. On this model was shown all the mineral resources. It was accompanied by a large colored section of the geological formations.

Arranged in a score or more of large glass cases were the leading mineral products of New Mexico, selected with special care as to value and beauty. Included were a number of cases of remarkably rare and showy zinc and copper minerals and ores. A special series consisted of zinc carbonate minerals, which for variety, delicacy of coloration, and beauty have never been surpassed. Two immense pyramids of showy crystalline ores were embraced in the display.

Four large special collections were of particular interest. These consisted of (1) the largest variety of zinc and copper minerals and ores from a single locality, (2) a collection of rare zinc and copper ores, (3) a unique collection of showy crystals of zinc and copper minerals, and (4) a complete smelting proposition from a single mine.

For these displays and several others gold and silver medals were awarded.

All the collections have been returned to Socorro and now form a prominent feature in the mining museum of the school of mines.

ESTABLISHMENT OF A STATE MUSEUM OF MINING.

A rather comprehensive plan for a complete museum of mining has been formulated. It includes a separate fireproof building, especially adapted for museum purposes, with large display halls on the first and second floors, around which are arranged smaller rooms for special collections, and for research work, and with workrooms and storerooms in the basement.

The collections will aim to illustrate as fully as possible the following departments: Ores and ore genesis, constructional materials, rocks and minerals, geological structures, models of mines, mining engineering constructions, materials illustrating the history of mining, metallurgical products, the mineral resources of New Mexico and the southwestern United States, and models of mining machinery. Accompanying these exhibits will be a full series of maps, charts, plans, and photographs as further illustrations.

Temporarily the collections of ores, rocks, minerals, and other illustrative material are housed in the east wing of the chemical building. The scheme is to exhibit as completely as possible:

(1) Mineral resources of New Mexico.
(2) Natural resources of southwestern United States.
(3) Typical mineral deposits of North America.
(4) Selected mineral examples from the classic localities of the world.

The collections are divided into (*a*) an exhibition series, which is arranged in glass display cases, and (*b*) study series, which are placed chiefly in tiers of shallow trays. Of necessity by far the greater portion of the specimens are not for public display.

PROGRESS OF THE GEOLOGICAL SURVEY OF NEW MEXICO.

For several years past there has been going on in connection with the school of mines regularly organized work of a geological survey of New Mexico. The funds for carrying on the investigation were provided from various sources. During the past winter the legislature recognizing the great importance of this work made special provision for conducting and extending the inquiries of the

geological survey of New Mexico, and placed the expenditure of the appropriations under the direction of the board of trustees of the New Mexico School of Mines.

The organization of the geological survey was effected for the express purpose of (1) obtaining valuable data relating to the mineral resources of New Mexico, (2) disseminating this useful information among those interested in our greatest industry, and (3) training students in systematic investigations of mineral wealth according to the most modern methods.

The mineral treasures which are constantly coming to light in the neighboring States and other parts of the country give us every reason to believe that we have not as yet availed ourselves to the extent that we might of the natural riches which nature has bestowed upon us, and suggests the expedience of a more thorough examination than has hitherto been made. There is now a general feeling prevading our Commonwealth that great benefits would be derived from an economical investigation of the natural resources of our domain. Such an accurate geological and mineralogical survey by practical and scientific men leads to important discoveries. Not only are the advantages immediate, but the results of this series of researches have a lasting effect in aiding individual efforts for many years to come. At the present time more labor and money is wasted annually in the region in fruitless searches for mineral wealth than would support a liberal survey for years.

The geological character of a district indicates its features of relief, its agricultural capabilities, its mineral wealth; and a geological map serves every citizen as a faithful guide, giving him reliable information concerning his property, and effectually protecting him against the wiles of nomadic speculators.

Already much valuable information has been accumulated by the various members of the geological corps. A preliminary geological map of New Mexico is rapidly approaching completion. A number of reports on various mineral deposits are in course of preparation. Several of these reports are soon to be presented. Both the economic and scientific aspects of the various questions are discussed.

Another purpose of the geological survey is to give the student practice in the administrative features of public scientific work, and the methods of correlated work.

Powers are also given the New Mexico Geological Survey to cooperate with the United States Geological Survey. According to the present plans it is expected that these organizations will be mutually benefited.

A number of reports are in various stages of preparation, and will be published in the order given below. Part I of the first volume is already in press, Part II is ready for the printer, and Part III is well advanced. These reports are:

Volume I. Geology of Underground Water Supplies.
Volume II. Geological Formations of New Mexico.
Volume III. Annual Report of the Director, and accompanying papers.
Volume IV. Coal Deposits of New Mexico.
Volume V. Areal Geology.
Volume VI. Conditions of Ore Depositions.

These reports will be followed by others on the various mineral deposits, the mining conditions, and kindred information of practical value.

In conducting the investigations of the geological survey exceptional opportunities are offered for working out geological problems of wide interest and publishing the results. The number of problems already formulated and awaiting solution is large.

ACQUIREMENT OF THE POWELL GEOLOGICAL AND MINING LIBRARY.

The school has recently come into possession of the private library of the late Maj. John W. Powell, of Washington, D. C., who for many years was director of the United States Geological Survey. The collection embraces several thousand titles. The volumes are chiefly works on mining, geology, and philosophy, many of which are rare, and all are of great practical value. Especially well represented is the literature relating to the Rocky Mountain region and the great Southwest. It was in these fields that Major Powell did most of his work, which has had such an important influence on the development of the mining industry. It therefore seems particularly fitting that the library of this famous man who had been so long identified with this western country should find a permanent home in New Mexico.

The libraries of the New Mexico School of Mines consist of a general library and department libraries.

In the main library are the works of reference, the encyclopedias, dictionaries, journals, magazines, proceedings of the learned societies, laboratory publications, periodical issues of other colleges; reports of Federal, State, and foreign surveys; official maps, plats, and atlases; a complete set of the publications of the school, and volumes on history, travel, and philosophy.

Libraries are located in the several departments of the school. These are essentially working libraries. They consist of carefully chosen treatises, textbooks, monographs, special contributions, and author's separates, pertaining to the respective divisions. Each department is under the direct supervision of the professor in charge, and is open under certain regulations at all reasonable times.

The general library is in charge of the librarian, who also supervises the purchase of books, the cataloguing of all the books, the issuing of those works not withheld from general circulation, directs the distribution of the school publications, and arranges for the exchanges. The librarian also is in charge of the general reading room, where the current periodical literature is to be found upon convenient tables.

The libraries are growing rapidly. During the past year many valuable additions have been made, including some complete sets of publications of technical institutions. Additional bookcases have been installed. An entire rearrangement of the books is going on. An elaborate and elastic scheme of cataloguing on the card system has been devised, so that the libraries will be thoroughly adapted not only for reference, but as working libraries.

Every effort is being made to make the files of the various technical journals, the transactions of engineering societies, and the scientific periodicals as full as possible.

Very truly, yours, CHARLES R. KEYES, *President.*

REPORT OF THE SUPERINTENDENT OF THE NEW MEXICO MILITARY INSTITUTE.

The New Mexico Military Institute is owned and partially supported by the Territory of New Mexico. It was first opened to students September 6, 1898, and has from the very first prospered beyond all expectations.

The seventh session was closed May 24, 1905, at which time 12 young men were awarded diplomas as graduates. Although the corps of cadets was no larger during the last session than the year before, every room was occupied, and the school work greatly improved. On account of limited living quarters only 120 cadets can be accommodated at one time. This limitation caused many applicants to be rejected last session, especially during the second term.

While the growth of the institute is greatly hindered on this account, it affords many advantages. It renders the school more independent and enables those in authority to select their students, to refuse admission to objectionable material, and to raise the standard of the institute. It is of advantage in arranging and planning for the coming session, as the number of cadets to be admitted is practically an assured fact; all preliminaries can be attended to during the summer vacation. When a cadet reports for duty he finds his quarters ready and takes up his military and academic work without the slightest delay.

The institute has fully demonstrated its worth, and the prospects for the future are bright. Its advancement in favor, merit, and usefulness has been steady and solid, assuring permanent success. The graduates of the institute are recognized and received by the various colleges and universities of the country. They are also well trained as soldiers and officers and prepared to engage in the great battle of life.

Twenty-seven young men have received their diplomas and gone forth as graduates of the New Mexico Military Institute, all of whom are doing an excellent grade of work. Several of these young men have received desirable Government appointments; others have entered universities and are making rapid progress as students. All of them are meeting with great success and commanding the highest respect in the various avocations of business and social life.

During the session just closed the academic instruction has been maintained at its usual high standard of thoroughness, and in many instances it has been greatly improved. The institute offers special advantages in the study of English, mathematics, science, Latin, and Spanish, and lays great stress upon these branches. These studies run through the entire collegiate course, and care is taken that the student is well grounded in them. The course in science

has been especially improved during the year by the addition of two new laboratories. Two large rooms in the basement of the main building have been devoted to chemistry and are provided with the usual tables and lockers for individual students. A full supply of all apparatus requisite in this course has been secured, and this will be added to as need arises. Especial attention will be devoted to elementary metallurgy, on account of its practical value in this section of the country. In another part of the basement a physical laboratory has been fitted up with the latest apparatus for all branches of physics and will add materially to the advantages of the study. With the apparatus at hand, the instruction in physics will be largely by the laboratory method.

A much larger room has been set apart and devoted to the use of the library, and during the session a great number of valuable books were received, some being donated by friends of the institute, while over 200 volumes were purchased by the school. Especial attention is given to the building up of this department of the institute. The departments of history, fiction, general literature, and lexicons are especially well filled, and are widely used by cadets and officers. Each year the library is becoming more valuable and is being used to a far greater extent by the cadets, who have free access to the room at all times. Here they find the best magazines and daily and weekly papers.

For the care of the sick an improvement was made by the equipment and comfortable arrangement of the new cadet hospital. This building consists of five large rooms, a modern bath, toilet, and lavatory, and two verandas. It is connected with the main sewer, but is so located that it can be isolated from the other buildings should there be cases of an infectious disease. A surgeon is employed by the session to look after the health of the cadets, and a nurse resides in the hospital, where all sick cadets are carefully attended to.

The health of the cadets has continued excellent throughout the past session. There have been no serious accidents, and no epidemics of any sort have occurred. Their carefully regulated duties, together with the quality of their food and their hygienic surroundings in other respects, all tend to promote the health and the development of vigor in both mind and body. Varied military exercises of not too long duration are alternated with the hours devoted to study, and serve to increase the ability for academic work, while the opportunities afforded for pleasure and the encouragement given to outdoor athletic games, baseball, football, and tennis, furnish necessary relaxation from the tension of drill and study.

By the greatest economy in cutting down of expenses the regents managed to save enough money for the erection of a new mess hall, which was opened at the beginning of last session. The building is of pressed brick and consists of a dining room 84 feet long by 36 feet in width, and has the capacity of seating 300 cadets. This is one of the best buildings on the grounds, is heated by a furnace and lighted by gas, and is a decided comfort to the cadets and of great assistance in maintaining the subsistence department.

The buildings now consist of seven, two of which are brick, and while the others are frame, they are well built and carefully arranged for the purposes of the school. Two men are constantly at work, improving, carpentering, painting, patching, and working on the grounds and buildings. Much attention has been given to the care of the grounds, and the general condition is excellent. During the winter a new pumping plant and storage reservoir, for the purpose of irrigating the grounds, was installed, at a cost of over $1,200. The grounds, buildings, and general improvements are now valued at over $80,000.

The discipline of the corps of cadets is steadily improving and has been excellent throughout the session. All cadets are required to live in barracks, under the immediate care of the commandant and his assistants. They are organized into a battalion of three companies and a band. Regular garrison duty is enforced at all times, and frequent inspections of quarters are made by the officers in charge of the institute to see that all is in perfect condition.

The athletics of the institute are on a sane and healthy basis. Instructors are employed to coach and promote the outdoor exercises, which renders the various games indulged in beneficial to mind and body.

Following is the table of receipts and disbursements from June 30, 1904, to June 30, 1905. All original bills are required to be itemized and receipted, are carefully filed and preserved, and are subject to inspection at any time.

RECEIPTS.

Balance on hand June 30, 1904:		
Land sales and leases fund		$3,798.81
Levy fund		582.11
Tuition fund		5,735.80
Received from Territorial auditor from June 30, 1904, to June 30, 1905:		
Proceeds land sales and leases		3,484.86
Proceeds levy		12,227.99
Received for tuition, board, etc., from June 30, 1904, to June 30, 1905		19,282.00
Total		45,111.57

DISBURSEMENTS.

Refunded		$807.50
Tuition, maintenance, and supplies		27,270.92
Advertising	$482.15	
Athletic supplies	140.75	
Commissary	7,752.31	
Expense	807.07	
Fuel	1,814.51	
Hospital	140.43	
Insurance	950.10	
Laboratory supplies	91.05	
Laundry	1,532.43	
Light	1,083.98	
Military supplies	85.80	
Office	290.00	
Repairs	425.78	
Salaries	7,063.64	
Stable	296.42	
Wages	3,472.32	
School supplies	842.18	
Property		10,091.39
Buildings	4,193.98	
Gas plant	140.00	
Fencing	12.00	
Furniture and fixtures	1,745.31	
Improvements	1,496.63	
Library	61.03	
Movables	110.00	
Sewer	383.65	
Tools	88.81	
Water works	1,372.54	
Laboratory fixtures	487.44	
Balance on hand June 30, 1905:		
Land sales and leases fund		2,454.53
Levy fund		55.71
Tuition fund		4,431.52
Total		45,111.57

Yours, respectfully,

JAS. W. WILLSON, *Superintendent.*

REPORT OF THE PRESIDENT OF THE NEW MEXICO NORMAL UNIVERSITY.

The seventh academic year of the normal school closed June 9, 1905, at which time 9 students were graduated; 3 from the advanced normal course, 2 from the elementary normal, and 4 from the academic.

The total enrollment for the year was 202, representing fourteen different counties. In this connection we desire to call especial attention to the fact that the number of students enrolled from ouside of this city increased during this period over 200 per cent.

The number of students who pursued studies designed especially for preparation as teachers increased 180 per cent. The number of counties represented in the enrollment increased from 3 to 13, and the attendance from localities not offering satisfactory local advantages increased nearly double.

The institution is now offering three distinct courses of study, namely:

The elementary normal course: This course consists of two years of work calculated to prepare for teachers in the country or rural schools requiring at least a second-grade certificate.

The advanced normal course: This course is designed to meet the needs of those who wish a full course in professional instruction and training. This is the distinctive work of the normal university, and in performing this duty it must fulfill two functions in fitting youth to assume the duties of worthy and competent teachers. Three years of the academic course are required to enter upon the work of this course.

The academic course: This course is designed to meet the needs of the following classes of students: Those who wish to take the advanced normal course, for which the first three years of this course is a prerequisite; those who wish to prepare for a college or university or who wish to enter a technical school; those who wish to take a thorough and systematic secondary course for general purposes.

This course is the full equivalent of the courses offered by the best preparatory schools of the East. To complete it in regular time requires that the student take four studies each semester, and attain a credit standing of at least 75 for each quarter's work. Regular studies in manual training, art, music, as well as public speaking and word study, are also required.

The board feels very much encouraged with the increased interest taken in work of the institution and in its attendance. The courses now offered and the special attention given to those desiring to avail themselves of the facilities at hand have proven that there is a decided demand for better educational work.

The summer school just closed has been a great success, showing an increase in attendance over last year of nearly 100 per cent. Some 64 country teachers were in attendance at the last session and were very earnest in the work and loud in their appreciation of the work offered.

Respectfully submitted.

CHAS. ILFELD,
President of the Board of Regents, New Mexico University.

REPORT OF THE PRINCIPAL OF THE NEW MEXICO NORMAL SCHOOL.

The work of the school on every hand, as manifested by the interest of its pupils and patrons, has been highly satisfactory to the management. The list of pupils taking the regular professional course and the number of promotions at the close of the year are greater than any previous year. One hundred and eighty-seven pupils were enrolled and 10 were graduated. The number of instructors is 10. There are about 4,000 volumes in the library and more than 500 geological, mineralogical, and archæological specimens in the museum. Our educational exhibit at the St. Louis World's Fair has been returned, and will be a permanent feature of the school museum hereafter. The apparatus may be valued at $5,000, the buildings and grounds at $55,000.

The school, like most normal schools of this country, maintains two departments—the academic and the professional. College graduates may complete the professional course in one year, graduates of accredited high schools in two years, regular students in four years. Until this last legislative assembly New Mexico did not recognize the professional teacher by law. As a consequence, normal graduates from the professional course had no special privileges over those of the academic department, either of this or other institutions of the Territory. But we now have a law authorizing the Territorial board of education to issue to normal graduates certificates which are honored by the public school authorities throughout the Territory. It is a rule of this board that normal students upon graduation shall receive a five-year certificate to teach, and after having five years of successful teaching experience within New Mexico, including their training school work, shall receive a life certificate. With this incentive the normal schools ought more nearly to perform their proper function, the education of teachers professionally for the Commonwealth.

Professional recognition now having been secured, the next problem in the interest of fitting teachers for our schools is that of reducing the expenses of such pupils. Those who desire to qualify themselves for teaching generally come from the ranks of those whose means are limited, and whose sons and daughters must be educated at a minimum cost. For such the usual rate of board and lodging is too high. They must club together for self-boarding, but by this scheme there is generally no older person to look after them. The dormitory plan is generally conceded to be the only successful method of dealing

with the situation. Realizing this, our board of regents sought to erect a dormitory building at a cost of $11,000, which was reported to be in the hands of the Territorial treasurer at the time. After expending about $8,000 of this amount, the regents received notice that the remainder of this amount had been transferred to another fund. This left the building uncompleted, and we sought to get a special appropriation from the legislature, but we failed in this. Rather than allow the building to be damaged by the weather, we shall attempt to finish it by using a portion of the general fund of the school, designed for current support. We have accordingly sought to lessen the expenses of the school by reducing the number of teachers in the faculty. This will somewhat curtail the scope of our efforts, but it seemed to be the only way out of the difficulty.

With this dormitory completed and a full corps of efficient teachers, we shall have a proposition to offer young ladies and gentlemen who wish to make themselves competent teachers. The authorities of the school thus hope to do all in their power to educate professional teachers for our schools, inducing them, if possible, to come from every locality in the Territory.

C. M. LIGHT, *Principal.*

REPORT OF THE SECRETARY OF THE NEW MEXICO ASYLUM FOR THE DEAF AND DUMB.

During the past fiscal year but little has been done by the board beyond the final payment to the contractor of the building. The building is now complete and ready for use, with the exception of the finishing of the third story. The property of the institution has been fenced, and work is now in progress for the proper irrigation of the grounds.

Arrangements have been made by the board for the opening of the school on the 18th day of September of the present year, and the board hopes to be able hereafter to continue the school open for a good part each year.

I have the honor to be, your obedient servant,

FRANCISCO DELGADO, *Secretary.*

REPORT OF THE SECRETARY OF THE ORPHAN CHILDREN'S HOME.

The present officers are as follows: Hon. Solomon Luna, president; John Becker, esq., vice-president; Paul B. Dalies, secretary and treasurer.

We would respectfully state that owing to the limited amount of the appropriation which the board had at its disposal, provided by the act of the legislative assembly approved February 24, 1903, creating the institution, it was compelled to greatly curtail the expenditures in carrying out the original designs and plans of our building. We felt, however, perfectly assured that an application and petition to the legislative assembly of 1905 for a further appropriation of sufficient funds to enable us to make such further additions and improvements to the present building as would increase its usefulness and efficiency in meeting the demands of the worthy object for which it was intended would be granted. Therefore, in the adoption of a plan for building we made such provisions as would enable us to enlarge its dimensions, at the same time preserving the beauty and symmetry of the architecture.

This assurance we are pleased to report was most favorably realized as our application for a further appropriation to the legislative assembly of 1905 was most generously granted, as shown by the liberal appropriation to the institution for the next two years, not only for the necessary enlargement and improvement of the building, but for its maintenance and the purchase of permanent fixtures and required equipments.

With this appropriation the board is now in a position to perfect its plans for the contemplated changes, which, when completed, will add to the building more than double its present capacity. The architect in charge of these improvements is now preparing the plans and specifications and we hope to let the contracts for the work during the present year.

These improvements will make the building two stories in height, its outside appearance greatly beautified, and the grounds graded.

Since our last report, of December 10, 1904, there has been no change in our financial condition.

The board has not yet received any funds appropriated by the legislative assembly of 1905.

Very respectfully, yours,

PAUL B. DALIES,
Secretary Board of Regents for the Orphan Children's Home.

REPORT OF THE PRESIDENT OF THE INSTITUTE FOR THE BLIND.

The trustees for the New Mexico Institute for the Blind beg to submit herewith report of said institution for the past year. Since the last report the construction of the building proceeded without serious delay or interruption, and on June 30, 1905, the contractors delivered it to the trustees.

The following is the itemized cost of the blind-institute building:

Advertising for bids	$25.00
Engineer, staking building	5.00
Advertising for hardware	6.50
Hardware	146.20
Caples, lumber and freight	33.37
Architect, for plans and traveling expenses	1,114.80
Pelphrey, glass and doors	71.00
Grading	6.00
George Warnock, lettering tablet	5.00
Switching cars of lumber	22.00
Eight downspouts for porch	54.00
Piping for fire protection	31.50
Arbitrator	10.00
Paid contractors	16,590.90
Total	18,121.27
Credit by lumber and brick on hand	176.75
Actual cost of building	17,944.52
Contract price of the building	17,500.00
Extra work and changes	357.07
Total amount due contractors	17,857.07
Amount paid to contractors	16,590.90
Difference	1,266.17

Which is the amount the trustees saved the Territory by furnishing lumber and brick to contractors at specific prices.

The board of trustees hereby acknowledges its indebtedness to Hon. H. O. Bursum, warden of the penitentiary, and to Mr. J. E. Bachtel, manager of the Alamogordo Lumber Company, for courtesies extended in making reduced prices on material; also to Hon. W. A. Hawkins for his assistance in securing reduced railroad rates, which favors have enabled the board to promptly meet the bills for the above items.

At a meeting of the board of trustees, held at Alamogordo July 6, 1905, there being no funds available, and the trustees not wishing to create further indebtedness, the trustees determined to defer fencing and grading the grounds and furnishing and equipping the building until the latter part of December, when part of the appropriation made by the last legislature becomes available, and, if possible, to open the institution for reception of pupils during January, 1906.

This report is given to represent the action of the board of trustees of the New Mexico Institute for the Blind during the past year.

Respectfully submitted.

A. J. KING,
President of the Board of Trustees.

REPORT OF THE SECRETARY-TREASURER OF THE NEW MEXICO REFORM-SCHOOL BOARD.

The board of trustees from time to time have held meetings and have determined matters that have come up in connection with the building of the New Mexico Reform School. The administration building is now under roof, and within the next two months will be ready for occupancy. It is built of concrete material and is of a gray color. It is an imposing structure, 45 feet wide and 90 feet long, and lies in the middle of a 20-acre tract of land that was donated to the Territory for this purpose.

The board of trustees, as reported to you before, had a well dug in front of what is now the administration building. This well is 54 feet deep and 14 feet square. At the present time the lowest calculation is that it has 20,000 gallons of water. It is the intention of the board of trustees to put a tank or two on

the attic of the administration building and pump this water up there by means of a gasoline pump that the board has furnished for the use of the institution, and by this means the water will be furnished for the inside of the building at a very small expense, also being a great protection in case of fire.

During the time that the building has been in course of construction the board of trustees has had insurance on it to the amount of $5,000. Half of the premium is paid by the architect and the other half by the board. More insurance is already necessary on the building, and no doubt the board at its next meeting will provide for such protection.

During our term of office I have received from the Territorial auditor $17,844.61, of which amount I have paid out to date $14,182.25 and have a balance on hand of $3,662.36.

Respectfully submitted.

VENCESLAO JARAMILLO,
Secretary and Treasurer New Mexico Reform-School Board.

REPORT OF THE SUPERINTENDENT OF THE NEW MEXICO INSANE ASYLUM.

I beg leave to submit the following report for the year ending June 30, 1905, showing the condition of the hospital and the improvements inaugurated since the last annual report:

Movement of population.

	Male.	Female.	Total.
Remaining in hospital July 1, 1904	65	49	114
Admitted from July 1, 1904, to July 1, 1905	30	21	51
Total number treated during the year	95	70	165
Of this number there have been discharged:			
Recovered	3	4	7
Unimproved	1	1	2
Died	13	3	16
Total	17	8	25
Remaining in hospital July 1, 1905	78	62	140

During the year just past the general health of the inmates has been very satisfactory. At no time in the history of the institution has there been less acute illness originating in the hospital. This, in a great measure, has been due to improvement in discipline and more intelligent care of the food and drinking water, as well as to the better observance of other hygienic precautions. This improved health condition has greatly increased the amount and value of voluntary service rendered by the patients.

Every effort has been made to insure kind and considerate treatment of the unfortunates intrusted to our care, insisting that no effort be spared on the part of nurses and attendants for the attainment of this object.

Very neat and suitable uniforms for our attendants have been adopted. This, we believe, is a step in the right direction. It has the approval of visitors to the institution, renders distinction to their position, and enables them to be observed and give more acceptable service to the patients. In aiming to secure better care of our sick an effort has been made to introduce a merit system, which will doubtless bring good results. No feature in the care of the insane is more important than the character and ability of nurses and attendants, who are constantly with them and who have it within their power to do so much to make them happy or unhappy. The highest moral qualities and best physical health are required for the proper discharge of the very difficult duties of these positions, and a fair remuneration must be offered if a suitable class of men and women are to be secured. An advance in the wages of these employees is made from time to time, reaching a maximum after two years, each increase being contingent upon efficiency and value of service.

IMPROVEMENTS.

Many improvements have been completed since my last annual report, which has enabled us to receive more patients and give them better care. In March of this year we began to occupy the then recently finished two-story brick structure, 230 by 48 feet, containing 55 rooms. On each floor a wide, well-ventilated, and thoroughly lighted corridor extends through the entire length of the build-

ing. Ample provisions have been made for bath, toilet, linen, bucket, and broom rooms. A two-story sunning porch has also been built, which has added to the comfort and enjoyment especially of the weaker invalids.

The completion of this building has made it possible to remove a good number of the insane from the county jails, as well as to furnish quarters for those who were being cared for in their homes. We now have a capacity of about 180 beds. The hospital is being filled rapidly, and we fully expect to have all available room occupied very soon.

SEWERAGE.

The old sewer, which had been in use for more than six years, has been found insufficient for our needs, and the importance of correcting this defect in the plant had been brought so forcibly to our notice that provisions were made and about 1,000 feet of 18-inch sewer main was put in and is now in successful operation.

ADDITIONAL WATER SUPPLY.

We have just completed the boring of a 520-foot 6-inch well, and placed a steam pump over same, which, after many weeks' pumping, proved to have a very satisfactory and unfailing supply of good water.

RECOMMENDATIONS.

Two new dining rooms are much needed, the old quarters being insufficient to accommodate the rapid increase in number of patients.

More room for patients.—The two new wards completed last spring will be filled very soon, leaving many unfortunates unprovided for. The construction of at least two new wards should be begun not later than the spring of 1906.

New heating and lighting plant.—Extensive renovations and additions have been made to our old boiler house, but it is very inadequate for our needs, and the building of a new one, with provisions for an electric-light plant, is an imperative need.

More land.—While we have enlarged our farm by various purchases during the past eight years, and the investment has furnished healthful and most profitable exercise to many of our patients, the amount of acreage is insufficient for a growing institution. More land should be secured.

PATHOLOGICAL WORK.

A good microscope and other accessories have been purchased for the examination of sputa, blood, excretions, and tissues. Further provisions should be made from time to time so that more and better work may be done in this most important field. This will enable the physician to be more accurate in diagnosis, rendering it possible to give better treatment and obtain more satisfactory results.

CHANGE OF NAME.

Again a most earnest appeal should be made to our legislature for a change in the unfortunate name of this institution. The words "insane asylum" are the cause of much pain and humiliation to both the patients and their friends. Though it may be said "there is nothing in a name," no good American would deliberately select the infamous name Benedict Arnold for his newly born son. Much harm has resulted to both the unfortunate sick as well as to the taxpayer from the unreasonable conservatism in retaining this harsh title. Relatives and friends quite often waste much valuable time before bringing their loved ones to the hospital, where special attention is given to the care of those bereft of reason, the delay often being prolonged until the case becomes hopelessly chronic, this result being due to a name which has not the slightest reasonable claim for being. The recovery of patients in this institution, I am convinced, is often delayed by the same cause. After the recovery and discharge of a patient his opportunities for earning a livelihood and of making social alliances are greatly lessened by the cruel and undeserved stigma always attached to the fact of having been an inmate of an "insane asylum." A respectful protest is hereby filed against the continuance of this thoughtlessness shown those who by their misfortune are practically barred from making an appeal for relief from such unjust treatment.

APPROPRIATIONS.

Before closing this report we wish to express our appreciation of the thoughtful provision made by our last legislature for the issuing of bonds to the amount

of $75,000 for new buildings. While the sum will not be sufficient to meet all our needs, much can be done to greatly improve our plant and enlarge its usefulness.

In conclusion, we wish to express our gratitude for the loyal cooperation of the board of directors, who have made it possible to accomplish more in the year just past than has ever been done in any similar period in the history of the institution.

Very respectfully, W. R. TIPTON, M. D.,
Superintendent.

CHARITABLE INSTITUTIONS RECEIVING TERRITORIAL AID.

ST. VINCENT HOSPITAL AND ORPHANAGE.

We have the honor to submit herewith report of work accomplished by St. Vincent Hospital and St. Vincent Orphanage during the year ending June 30, 1905.

ST. VINCENT HOSPITAL.

Patients in hospital June 30, 1904	14
Patients received during the year	101
Patients discharged	86
Patients died	10
Patients in hospital June 30, 1905	19

Financial statement.

Territorial appropriation	$3,350.03
Expenditures	3,499.42

ST. VINCENT ORPHANAGE.

Children in orphanage June 30, 1904	76
Children received during the year	50
Children taken out by parents or guardians	46
Children in orphanage June 30, 1905	80

Financial statement.

Territorial appropriation	$5,357.92
Expenditures	5,377.38

Respectfully, SISTERS OF CHARITY.

ST. JOSEPH'S HOSPITAL AT ALBUQUERQUE.

We inclose statement of our work for the past year, and wish to thank you sincerely for the aid we have received from the Territory, without which we could not carry on our work for our poor sick ones.

Statement of St. Joseph's Hospital from July 1, 1904, to July 1, 1905.

Receipts from Territory	$2,222.71
Expenditures	2,222.71
Number of patients in hospital July 1, 1904	40
Pay patients (8,923 hospital days)	404
Free patients (7,902 hospital days)	221
Total (16,825 hospital days)	625
Dismissed	559
Died	68
In hospital	38
Total	665

Very gratefully,

SISTER ALEXANDRINE, *Superior.*

ST. JOSEPH'S HOSPITAL AT SILVER CITY.

Inclosed find our annual statement as per your request.

RECEIPTS.

Total number of patients treated	45
Total number of days treatment	916
Total number of patients discharged	37
Total number of deaths	5
Total number still in hospital	3
Received from Territory of New Mexico for the year ending June 30, 1905	$1,175.92
Total expenditure for the year ending June 30, 1905	$1,359.37
Due from Territory for two months ending July 5	$183.45

EXPENDITURES.

Meat and eggs	$454.82
Groceries	395.85
Light	148.05
Washing	72.00
Water	58.50
Wood	75.00
Milk	152.15
Telephone	3.00
Total	1,359.37

Thanking you very much for your kind interest, we are, very sincerely,

SISTERS OF MERCY.

GRANT COUNTY CHARITY HOSPITAL.

RECEIPTS.

From Territory	$1,967.77
From pay patients	3,034.60
From other sources	65.95
Total	5,068.32

DISBURSEMENTS.

Groceries	$553.23
Meat	933.40
Drugs	138.90
Fuel and light	405.34
Laundry	238.70
Milk	322.00
Fruit and vegetables	151.65
Matron's fund	51.15
House furnishing and repairing	762.30
Telephone service	36.00
Insurance	30.00
Salaries	1,260.00
Printing	17.00
Ice	68.20
By balance	100.45
Total	5,068.32

PAY PATIENTS.

Number treated	84
Number discharged	70
Number died	9
Number days treated	1,511

CHARITY PATIENTS.

Number treated	60
Number discharged	19
Number died	5
Number days treated	1,150

MARY J. BROWN, *President.*
OLIVE W. BELL, *Secretary.*

LADIES' HOSPITAL AT DEMING.

I take pleasure in submitting the inclosed report of the Ladies' Hospital, Deming, N. Mex., as per request.

FINANCIAL STATEMENT.

1904.			
June 30.	Balance on hand		$588.07
Oct. 1.	Received from Territorial auditor, warrant No. 10636	$573.96	
Dec. 1.	Received from secretary of hospital	360.00	
1905.			
Mar. 14.	Received from Territorial auditor, warrant No. 11094	765.22	
June 3.	Received from Territorial auditor, warrant No. 11293	145.17	
	Total amount received		1,844.35
			2,432.42
	Paid out from June 30, 1904, to June 30, 1905, as per 93 warrants on treasurer of Ladies' Hospital, numbered from 534 to 627, inclusive, signed by the secretary and president		1,953.54
1905.			
June 30.	Balance on hand		478.88
Patients treated			46
Patients died			3
Patients discharged			42
Patients in hospital			1

STATEMENT OF BUILDING FUND.

1904.		
June 30.	Balance on hand	$1,370
	Amount received (contributions)	804
1905.		
June 30.	Total in hands of trustee	2,175

LOU H. BROWN.

Respectfully, Mrs. KATE E. MOIR, *Secretary.*

GALLUP HOSPITAL.

I have the honor to submit herewith report of the Gallup Hospital for the year ending June 30, 1905:

INCOME.

Warrants from Territorial auditor	$499.06
Do	323.30
Do	587.80
Do	1,166.53
Refund by patients	40.50
Total	2,617.19

EXPENDITURES.

Water rents	$9.75	
Fuel	28.00	
Rent	133.00	
Medical services and medicines	429.95	
Nurses	290.45	
Laundry work	19.53	
Food and meals for patients	112.07	
		$1,022.75
Balance cash on hand		1,594.44

Very respectfully,

F. W. MEYERS, *Clerk to Board.*

LADIES' RELIEF SOCIETY OF LAS VEGAS.

I have the honor to transmit herewith my annual report of the Ladies' Relief Society for the year ending June 30, 1905:

Charity patients in hospital June 30, 1904	22
Charity patients received during year	90
Total	112
Charity patients, days treated	4,857
Pay patients in hospital June 30	2
Pay patients received during the year	43
Pay patients, days treated	990
Deaths during the year	23
Patients dismisssed	102

Financial statement for the year ending June 30, 1905.

RECEIPTS.

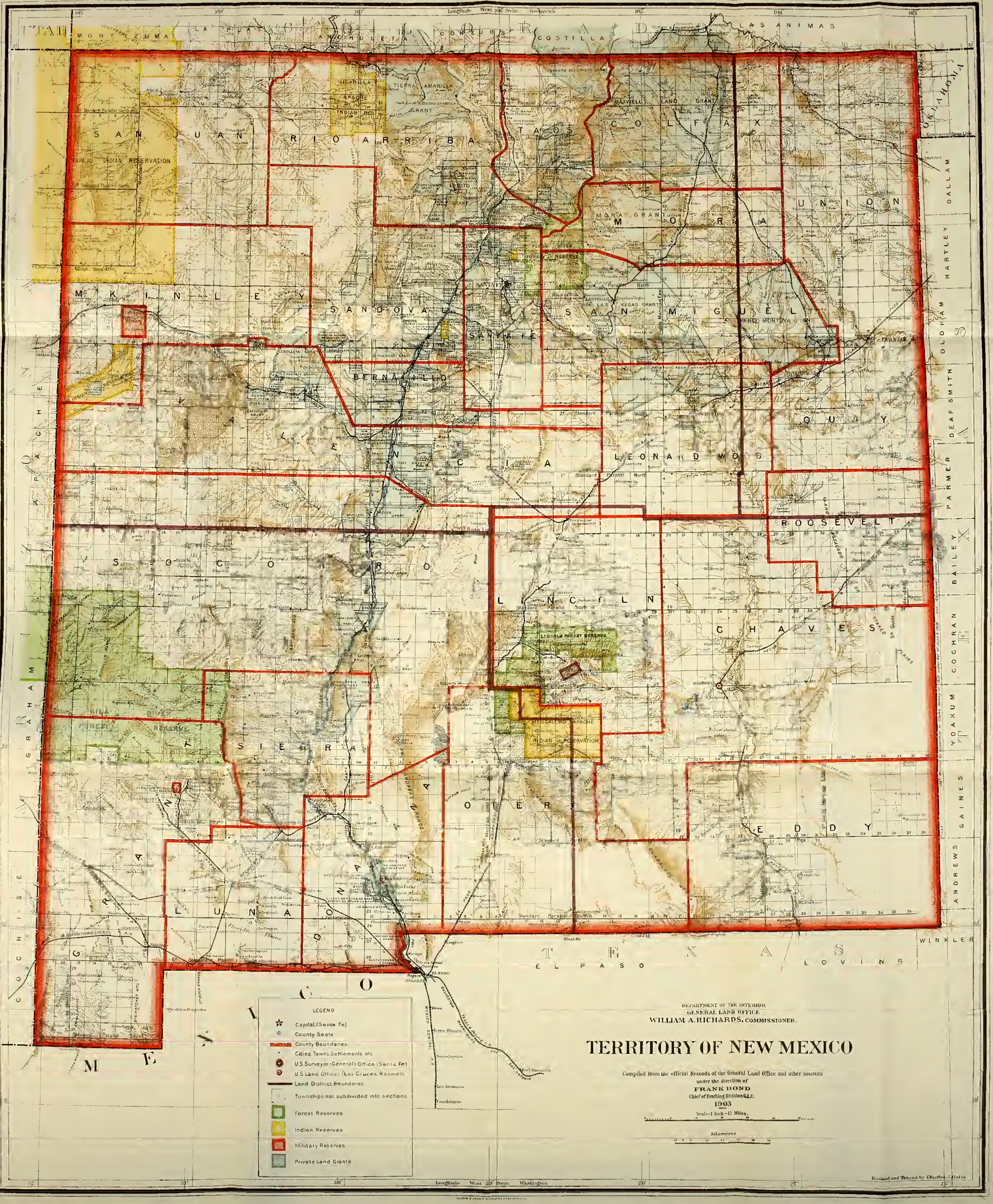
Balance in bank June 30, 1904	$8.00
Board	1,928.77
Donations	832.77
Dues	46.00
Territorial warrants	2,222.71
Borrowed from bank	300.00
Total receipts	5,338.25

TOTAL EXPENSES.

July, 1904	371.36
August, 1904	292.83
September, 1904	255.65
October, 1904	389.29
November, 1904	503.51
December, 1904	155.20
January, 1905	1,062.14
February, 1905	427.78
March, 1905	769.81
April, 1905	590.98
May, 1905	314.80
June, 1905	124.20
Total expenses	5,257.05
Balance in bank June 30, 1905	81.20
Total	5,338.25

Respectfully submitted.

ANNIE HARTMAN, *Secretary.*



DEPARTMENT OF THE INTERIOR
GENERAL LAND OFFICE
WILLIAM A. RICHARDS, COMMISSIONER.
TERRITORY OF NEW MEXICO
Compiled from the official Records of the General Land Office and other sources
under the direction of
FRANK BOND
Chief of Drafting Division G.L.O.
1903
Scale: 1 Inch - 12 Miles.
Kilometres
Revised and Traced by Charles J. Helm
LEGEND
Capital, (Santa Fe)
County Seats
County Boundaries
Cities, Towns, Settlements etc
U.S. Surveyor-General's Office (Santa Fe)
U.S. Land Offices (Las Cruces, Roswell)
Land District Boundaries
Townships not subdivided into sections
Forest Reserves
Indian Reserves
Military Reserves
Private Land Grants
Longitude West 106° from Greenwich
Longitude West 29° from Washington
UTAH
MONTEZUMA
LA PLATA
ARCHULETA
CONEJOS
COSTILLA
LAS ANIMAS
COLORADO
OKLAHOMA
SAN JUAN
RIO ARRIBA
TAOS
COLFAX
UNION
MORA
SAN MIGUEL
SANTA FE
SANDOVAL
BERNALILLO
McKINLEY
VALENCIA
LEONARD WOOD
QUAY
ROOSEVELT
SOCORRO
LINCOLN
CHAVES
SIERRA
GRANT
LUNA
DONA ANA
OTERO
EDDY
NAVAJO INDIAN RESERVATION
JICARILLA APACHE INDIAN RES.
MAXWELL LAND GRANT
MORA GRANT
LAS VEGAS GRANT
LINCOLN FOREST RESERVE
MESCALERO APACHE INDIAN RESERVATION
GILA FOREST RESERVE
TIERRA AMARILLA GRANT
DALLAM
HARTLEY
OLDHAM
DEAF SMITH
PARMER
BAILEY
COCHRAN
YOAKUM
GAINES
ANDREWS
WINKLER
LOVING
EL PASO
TEXAS
MEXICO
APACHE
GRAHAM
ARIZONA
COCHISE
ROSWELL
EL PASO
JUAREZ
SOUTHWESTERN R.R.

REPORT OF THE MINE INSPECTOR FOR NEW MEXICO.

REPORT OF THE UNITED STATES MINE INSPECTOR FOR THE TERRITORY OF NEW MEXICO.

SILVER CITY, N. MEX., *September 5, 1905.*

SIR: In compliance with section 3 of an act of Congress approved March 3, 1891, entitled "An act for the protection of the lives of miners in the Territories," I beg leave to submit herewith the thirteenth annual report of this office, covering the fiscal year ending June 30, 1905.

JO E. SHERIDAN,
U. S. Mine Inspector for the Territory of New Mexico.

Hon. ETHAN ALLEN HITCHCOCK,
Secretary of the Interior, Washington, D. C.

PRESENT CONDITIONS AND FUTURE PROSPECTS OF THE COAL-MINING INDUSTRY IN NEW MEXICO.

The coal-mining industry in New Mexico during the past fiscal year has shown less progress than usual, if judged solely by the increase of tonnage produced. During the two preceding fiscal years the ratio of increase was approximately 20 per cent, while the past fiscal year has shown a decrease of net product of 122,482 tons. But this sudden cessation of increase of production does not by any means indicate lack of progress. The lessened production for the fiscal year ending June 30, 1905, was largely due to lack of railroad transportation facilities during the months of September, October, and November, 1904, during the greater portion of which months the railroads of New Mexico could not furnish facilities for transportation of the product of the mines on account of hundreds of miles of railroad track and roadbed being washed out. These washouts occurred during the season when winter stocks of coal are being stored by the coal dealers and when railroads replenish their reserves of coal for winter service.

It may be very reasonably assumed that the production was diminished fully 20 per cent from this cause alone. The demand during May and June, 1905, exhibited a healthy increase over the demand in those two months in former years, and there is every indication that the general demand for New Mexico coal will continue to increase at fully as great or greater ratio in the future as it has in the three preceding fiscal years. Indeed, the developments in the various phases of coal mining in New Mexico during the past six months have been fraught with incidents portentous of great immediate success and permanent progress for future years.

In Colfax County, especially, the enormous areas of coking coal have

attracted the attention of eastern capitalists and manufacturers. The St. Louis, Rocky Mountain and Pacific Company was recently incorporated and has acquired title to the coal areas of the Maxwell land grant. The magnitude of this single coal field may be realized when compared with the great coal fields of Pennsylvania. The area of this single ownership is fully 50 per cent greater than the combined area of all the anthracite coal fields of Pennsylvania, and five times as large as the entire Connellsville basin. It is the largest body of coal land under one ownership in the United States.

The St. Louis Rocky Mountain and Pacific Company intends building a line of railroad, 120 miles in length, to connect with the Colorado and Southern at Des Moines, N. Mex., 80 miles to the east, and to extend west from the mines 40 miles to the gold-mining camps in the vicinity of Elizabethtown, N. Mex. As the operated mines of this company at Van Houten and Blossburg, N. Mex., now have railroad connections with the Atchison, Topeka and Santa Fe Railroad, the new railroad will form another outlet for the product of these mines and place the miners in touch with new markets. In anticipation of an increased demand for coke from these mines 80 additional coke ovens are being built, which, with 84 now in use, will make 164 ovens in commission within a few months, and it is contemplated continuing the work of building coke ovens until a total number of 300 are erected. This increase in oven capacity will necessitate doubling or trebling the washery capacity at these mines.

At Raton, N. Mex., in the coal area adjoining the Maxwell land grant on the northeast, the Raton Fuel Company is making preparation for extensive development. A railroad company has been incorporated, under the name of the Santa Fe, Raton and Eastern Railroad Company; several miles of railroad have already been built by this company, to connect with the coal mines of the Raton Fuel Company and other coal mines on Barela and Johnson mesas.

The great Dawson coal field, embracing about 40,000 acres of coal land, lying to the south of the Van Houten mines, has changed ownership within the past six months, together with the El Paso and Northeastern Railroad, and the Dawson Railway, the lines over which the coal is transported to market.

It is very reliably reported that the great copper-mining company known as the Phelps-Dodge Company is the controlling factor in the new ownership. The names of the corporations owning the Dawson mines and railroads named have not been changed. The Phelps-Dodge Company owns extensive copper mines at Nacosari, Mexico, and at Bisbee, Globe, and Morenci, Ariz., together with large smelters at Nacosari, Mexico; and Douglas, Globe, and Morenci, Ariz. The estimated consumption of coke at these smelters is about 25,000 tons per month, all of which will probably be produced from the Dawson mines. Three hundred new coke ovens are now in course of construction, in addition to the 125 ovens now in operation at Dawson, and it is highly probable that the number of ovens at the Dawson mines will be increased to at least 500. Already a survey has been made for a new line of railroad from Dawson, N. Mex., to Santa Rosa, N. Mex., via Las Vegas, N. Mex., which will shorten the distance 50 miles between the mines and the El Paso, Tex., market and the Arizona smelters.

Litigation over right of way for the railroad between San Antonio, N. Mex., and the Carthage mines has delayed the development of these mines in Socorro County. It is probable that this litigation will be decided ere another fiscal year elapses, and these mines will add to the production of the Territory. Taken all in all, the prospects for a greatly increased development of the coal industry in the Territory is exceedingly bright.

It is a pleasure to report that while the tonnage produced from the coal mines of the Territory has been nearly as great as in any preceding fiscal year, yet the fatal accidents have been less than in any year previous. There were 2,043 men and 89 boys, or a total of 2,132 persons, employed at the coal mines of New Mexico, and there were 5 fatal accidents during the year—equal to 2.34 lives lost for each 1,000 persons employed. This record compares favorably with some of the older mining States, where systems for prevention of accidents have been improved upon for many years. For this good showing great credit is due to the managers of the larger corporations and coal mining companies operating the mines of New Mexico. The officials of these companies have extended the most earnest and willing cooperation to the United States mine inspector and done everything in their power to guard against dangers to their employees.

Coal mining is destined to become one of the chief industries of New Mexico, and it is safe to say that within the next five years it will have made a strong race for first place as to value of production. At the present time fuel oil from the oil wells of California and Texas is replacing coal upon the railroads of California, Arizona, New Mexico, Texas, and Mexico to the almost complete exclusion of coal upon the railroads and to a great extent for domestic and manufacturing purposes. The demand for New Mexico coal has thus been lessened to the extent of 1,000,000 tons per annum, approximately. On the other hand, the mines have not been fully equipped and developed, nor have the transportation facilities been adequate to supply the demand during the fall and winter months. Coke from Eastern States and from England has been used at the smelters of Arizona and Mexico, because of the lack of facilities for production of coke at the mines of New Mexico. All these obstacles and hindrances now seem certain of being remedied within a few years upon the completion of new railroad connections and the construction of the many new coke ovens now under way. The manufacture of coke will largely increase the output from the coal mines and give employment to many more people.

In McKinley County the producing capacity of the mines is far in excess of the demand. It is in this county that the competition of fuel oil is most felt. The cheap fuel oil of California has been substituted for coal upon the Santa Fe Pacific Railroad from San Francisco, Cal., to Seligman, Ariz., a length of 770 miles of road, and also upon the branch from Los Angeles to Barstow, Cal., 141 miles, and upon other coast lines where New Mexico coal was used, and oil is also used in many industries and for domestic purposes in many localities of California where coal was formerly used. And yet with this formidable competitor in the field of consumers the production of coal from McKinley County shows a very slight decrease, and had transportation facilities been available during the winter months to

supply the California markets the production of McKinley County would have shown a gain for the past fiscal year. This indicates that the settlement of the Territories of Arizona and New Mexico and development of their resources has created a demand which at present compensates for the lost markets to the railroads and in California, and which will in the near future furnish a home market for a large proportion of New Mexico's coal production. The development of the vast mining resources of Arizona and old Mexico are largely dependent upon the cheap coal of New Mexico.

Fuel oil has been substituted for coal in Texas, New Mexico, and Arizona, territory tributary to the El Paso, Tex., coal market, curtailing the demand by fully 30,000 tons per month, which means an equal diminution of production from the Colfax County coal mines. Thus the demand for New Mexico coal has been lessened to the amount of 1,000,000 tons per annum. Continued development of the resources of California and the Pacific Coast States, as well as New Mexico, Arizona, and old Mexico, will insure an increased demand and permanent market for New Mexico coal on a scale of greater magnitude than most people foresee. Nor can the influence of the Panama Canal, when completed, be overlooked. Through the harbors of California vast tonnage will be transported via the canal, and the New Mexico fields will furnish the nearest available coal supply for the vessels engaged in this traffic.

During the past two years many shipments of coal were made from the Colfax County, N. Mex., mines to various points in Oklahoma and Kansas, the New Mexico coal being preferred to the product of mines closer to these markets, and New Mexico coal commanded a sufficiently higher price to compensate for the difference in cost of transportation on the longer haul from New Mexico mines. This will indicate a good future market in that direction for the coal from this Territory. Favored by location, near the markets of old Mexico, Texas, Arizona, and California, as well as the local demand, in all of which markets New Mexico coal is protected from competitors by reason of distance of other mines from these markets, New Mexico is thus assured of a good market for its great coal resources.

For extent in area, thickness of coal seams, good roof and floor, absence of gas, freedom from heaving bottom, absence of water, which, if present, would necessitate powerful pumps; in fact, for all favorable conditions which go to make up a desirable coal-producing field, New Mexico is far ahead of any State or Territory in America, and consequently the coal fields can be more profitably operated. The extent of the areas underlaid by coal in the Territory of New Mexico can not be fully estimated until a geological survey is made. New localities are attracting notice each year, as it is demonstrated by development that profitable coal fields exist therein.

Within the past two years there has been added to the known coal areas of New Mexico, by development, about 550 square miles. One of the fields is in Santa Fe County, and comprises the Hagan mines, now opened to a depth of over 1,000 feet, and showing three workable coal seams of good quality of coal, the veins being from $3\frac{1}{2}$ to $4\frac{1}{2}$ feet in thickness. In this field are also found the Coyote mines and the Pinavititos extensions of the Hagan mines to the northwest, the outcrop showing for a distance of 5 miles or more. About 10,000

acres of the coal lands in this field have been filed upon, and a large part of it purchased from the Government.

In Ts. 18 and 19 W., Rs. 4 and 5 N., in the southwestern portion of Valencia County and northwestern section of Socorro County, a large area has been proven to contain good workable seams of coal 4 to 5 feet in thickness. About 20,000 acres of the coal lands in this field have been filed upon.

In Rio Arriba County several thousand acres have been filed upon during the past two years.

On the line of Bernalillo and Valencia counties, on the Antonio Sedillo grant, a considerable area is underlaid by coal.

With new coal fields of such great extent being developed each year, it is evident that it will require many years ere the full extent of the coal areas of New Mexico becomes definitely known, unless the United States Government shall have a geological survey made.

Herein below will be found a brief description of the Coal Measures in the various counties of the Territory.

The McKinley and San Juan County coal fields comprise an area extending from the Zuni buttes on the south to La Plata, on the Colorado line, 125 miles in a straight line. In width it will average 10 miles, giving a total area of 1,250 square miles, or 800,000 acres. This area is underlaid by several coal seams of good workable thickness, ranging from 3½ to 40 feet in thickness.

In the Gallup coal field, McKinley County, there are two series of coal seams known as the "upper" and "lower" Coal Measures. These Coal Measures are separated by about 400 feet of sandstone, slates, shale, and clays.

In the upper Coal Measures six coal veins have been exploited, and five of these proven to be valuable producing seams. Commencing with No. 1 vein, which outcrops near the Gallup and Weaver mines, the coal seam is found with varying depth of cover as due to the accidents of erosion. This vein is 6 feet in thickness, but mixed with bands of shale and bone, rendering it of little value in the immediate locality where exposed.

Passing down through 21 feet 5 inches of sandstone, fire clay, and shale we encounter No. 2 vein. This vein is from 3 to 5 feet in thickness, is clean coal, and has a good sandstone top. Between this vein and the next below is 36 feet of sandstone, fire clay, and shale. This seam, known as No. 3 vein, is never less than 4 feet in thickness, and frequently attains a thickness of 6 feet. The coal of this seam is of good, clean character, free from bone, and with a good sandstone roof and floor. This floor of hard sandstone is 6 feet in thickness and below it lies No. 3½ vein. This vein is from 5 to 9 feet in thickness. In the Weaver mine this vein has been worked extensively and has a good sandstone roof and floor.

Sixteen feet of sandstone intervenes between No. 3½ seam and No. 4 vein below. No. 4 vein has a thickness of 3 to 5 feet of coal of good, clean quality, and has a good sandstone roof.

Below No. 4 vein 21 feet of sandstone, shale, and fire clay is passed through, when No. 5 vein, the bottom coal seam of the upper Coal Measures of the Gallup district, is found. This vein, where opened in the workings of the Gallup mine, is never less than 5 feet in thickness, and in many places in the mine reaches 7 to 8 feet in thickness.

The Clark Coal Company's mine is also located upon these upper Coal Measures, but only one of the coal seams has thus far been exploited in this mine.

Between the upper and lower Coal Measures of the Gallup district there occurs about 400 feet of sandstones and fire clays, with a few small seams of coal. The first or top vein of the lower series is known as the "Crown Point" vein. This vein is from 2½ to 6 feet in thickness, and has been developed in several different mines, embracing several miles of area. It has been worked in the Crown Point, Thatcher, Otero, and Catalpa mines. The coal is of good quality and is clean.

The Thatcher, or No. 2 vein of the lower measures, lies next below the Crown Point vein and at varying distances from the vein above. In one part of the Catalpa mine the Crown Point and Thatcher coal veins lie close one upon top of the other, so that the parting can scarcely be distinguished. Six or 7 miles to the north, in the Thatcher and Otero mines, the same coal seams are about 35 feet apart. The Thatcher coal seam is from 4½ to 6 feet thick and a good quality of coal. It has been worked in several mines of the district.

The Black Diamond, or No. 3 vein of the lower Coal Measures, lies about 40 feet below the Thatcher seam. It was worked extensively in the Black Diamond and Sunshine slopes, and is worked in parts of the Thatcher. This vein is from 5 to 7 feet in thickness and produces an excellent quality of coal.

The Otero, or No. 4 vein of the lower measures, is found at a depth of about 35 feet below the Black Diamond coal seam. It has been extensively worked in the slopes of the Otero and Rocky Cliff mines. It is from 3 to 6 feet in thickness and furnishes a good grade of coal.

The Gallup and Weaver mines and the Clark Coal Company's mine are opened in the upper Coal Measures, and all of the workable seams of both the upper and lower Coal Measures will be found in the areas controlled by these properties, but it will be centuries hence ere the vast reserves of coal in the upper measures will be exhausted and it will become necessary to tap the lower Coal Measures in these mines.

There is considerable difference of opinion among local coal operators at to the identification of the several coal seams of the lower measures as found in the different mines, but from all the data obtainable the foregoing is probably a close approximate to the relative positions of the various coal seams.

Of course, it must be taken into consideration that the coal seam as found in the one mine may be of contemporaneous origin with the coal seam that is called by the same name in another mine, and yet it may not be continuous between these mines, but may be segregated bodies of coal of identical age and origin.

It must be remembered that the basins or swamps in which these vast bodies of carbonaceous material were deposited, while on a scale of greater magnitude than the swamps of to-day, yet they were subject to like conditions of higher and lower ground or basins, and yet there was sufficient high ground to cut these several depressions off from each other and thus segregate the different portions of what would have been one vast and continuous coal seam. This, together with such rolls and faults as are incident to the movements which have occurred in the earth's crust, would render positive identification

of the several coal seams quite difficult in openings considerable distances apart in the different mines except by an expert geologist, who might be able to determine their relationship by some fossil or fossils peculiar to that seam alone and belonging in no other coal seam.

Hereinabove has been described the existence, and demonstration by development and production, of eight workable seams of coal of the most economical thickness for production of cheap coal, as seams having a thickness of 5 to 6½ feet have been proven to be the most profitable to operate. Still below these at least one coal seam has been shown by diamond-drill boring to have a thickness of 5 feet. Borings show 17 seams in all the upper and lower Coal Measures, 9 of which are proven to be above 3½ feet in thickness and some reaching a thickness of 7 to 8 feet. When the market demands the product all nine of the coal seams mentioned can undoubtedly be profitably worked. In fact, eight of them are now, or were recently, being operated as the demand required, and it is highly probable that some of the remaining eight coal seams in this field will prove to be of workable thickness. But, basing our estimates upon only one workable coal seam of an average of 5 feet in thickness, and assuming that the other veins will offset the area to be deducted for eroded canyons, faulted and broken ground, calculating 100 tons per acre for each inch in thickness of the vein, or 6,000 tons per acre, the number of tons of coal in this field would be 4,800,000,000.

The Colfax County coal field embraces an area commencing in T. 28 N., R. 19 E., and running thence northeast to T. 31 N., R. 26 E., a total length of about 45 miles, with an average width of 12 miles, or an area of 540 square miles—345,600 acres. There are several coal seams in this field, two of which have been exploited and show an average thickness of 6 feet each. Basing the estimate of coal in the field upon one vein only, and offsetting the other by faults, rolls, and erosions, which may be encountered in the other seam, calculating 100 tons per acre for each inch in thickness of one of these veins, we have as a result, for one vein of 72 inches covering the acreage above stated, a total of 2,488,320,000 tons. Colfax County holds first place among the coal-producing counties of New Mexico, having produced 880,087 tons net during the past fiscal year; 59.784 per cent of the total net product of the Territory. The coals of Colfax County are all excellent coking coals. The mines of this county are supplied with better transportation facilities than those in other counties of the Territory, there being two competing railroads into this section of New Mexico, and two other railroads will soon be built.

The Santa Fe County coal field is much disturbed, broken, and faulted by igneous uplifts, overflows, and intrusions. Hence it is difficult to make even a close approximation of the workable area in this field. Commencing near the northern base of the Sandia Mountains, in Bernalillo County, running thence north about 20° east, passing through disturbed and broken country, with segregated patches of coal lands for a distance of 25 miles, we reach the more compact, yet somewhat disturbed, section, where are located the mines of Madrid and Waldo, generally known as the Cerrillos mines. Within this area is included the coal fields of Sandoval County. Along this course, as well as at Madrid and vicinity, are found isolated areas of an excellent quality of anthracite coal, much of it equal to

the best Pennsylvania anthracite. These are sometimes of considerable extent, as at Madrid, where the Lucas mine, now known as the Cerrillos Anthracite, has been producing steadily for fifteen years, the product of this mine during the past fiscal year being 24,682 tons. At a depth of 2,600 feet in the slope the near approach of the igneous sheet, together with the action of the thermal waters, rendered the coal worthless, but a half mile farther east a drill hole has discovered what is in all probability a continuation of the same anthracite seam, the coal being of excellent quality and a thickness of 50 inches.

The slope pillars are now being drawn in the Cerrillos anthracite mine and ere another year has elapsed it is probable that the mine will be abandoned. The abandonment of this mine will leave New Mexico without a producing anthracite coal mine. It is anticipated, however, that the closing of this mine will leave an unsupplied demand for anthracite coal in the Southwest, and the market maintaining a good price for the article demanded will be an inducement for some person to open some of the several segregated bodies of anthracite coal in this vicinity. The topography of this immediate vicinity would indicate that there is here an area of 2 miles square of unbroken and undisturbed ground in which would be found a valuable body of anthracite, containing, in all probability, at least a million tons. As the anthraciting of this coal is due to the near approach of the intrusive igneous sheet, and as the course of the intrusive is relatively erratic as to the distance maintained from the coal seam, the metamorphism has occurred in segregated sections, as the lava sheet intruded more closely to the coal seam. A reasonable calculation of the aggregate tonnage of anthracite coal which can be profitably mined from these sections would be 4,000,000 tons. Continuing our course, from the present center of operation of these measures, we find the field interrupted for a distance of about 15 miles by the uplift of the Glorieta range of mountains.

In T. 16 N., R. 12 E., the coal is again found, extending through an area of 15 miles in length and 6 miles in width, but considerably broken.

Estimating the distance from the north end of the Sandia Mountains, in Bernalillo County, thence across Santa Fe County in a northeasterly direction to Porvenir, in San Miguel County, we have a total length of 50 miles, from which, deducting the interruption of the Glorieta Mountain Range, there remains 35 miles in length by 4 miles in width, or 140 square miles. Allowing for the uncertain and broken condition of 70 per cent of this territory as unavailable for profitable mining, there is yet 42 square miles of available coal lands. There are several coal seams underlying the major part of this area. At least two of these veins are of sufficient thickness to be profitably operated, having a thickness of from 3 to $4\frac{1}{2}$ feet, with an average thickness of about 40 inches each. Again basing the estimate upon only one vein of 40 inches, the amount of available coal underlying this 42 square miles, or 26,880 acres, at 4,000 tons per acre, equals 107,520,000 tons. In such broken ground a positive and definite determination as to quantity can not be made, but it is certain that the above approximation is conservative. During the past ten years over 1,000,000 tons have been produced from an area one-half mile square of this field at Madrid, and from only one of the coal seams, the other being untouched.

The topography and geological features of the Coal Measures of Lincoln County are of such character that the boundaries of the field are difficult to define. The country is broken and faulted, cut by igneous dikes, and in places the coal altered by action of lava sheets. While the area is quite extensive in which coal is known to lie, yet the ground is so very badly broken and disturbed that much of it can not be profitably mined until prices are much higher and coal more scarce in other fields. It is uncertain at best—any estimate which can be made of the available coal in these measures—but the tonnage may be safely placed at 1,000,000 tons.

Development upon the mines at Coalora, or Capitan, as the camp is more generally known, has shown such serious disturbances of the Coal Measures as to preclude mining of the coal at a price low enough to compete with other coals in the market. Only one mine is being operated, and that only worked to supply the local demand. The White Oaks mines will probably prove more permanent than have the Capitan mines, but at present there is no transportation facilities and only one mine is operated, and that on a small scale for local consumption.

The coal fields of Rio Arriba County embrace an area commencing at Azotea, a station on the Denver and Rio Grande Railroad, on the east and extending west along the Colorado line to the San Juan River, which forms the northern portion of the western boundary line of the county, a distance of 40 miles in length by an average width of at least 12 miles south of the Colorado line. Uplifted areas at intervals to the south have interrupted the continuity of the Coal Measures in this direction, but prominent outcrops of coal appear from 30 to 50 miles south of Monero and to the east and southeast 25 miles distant from Monero upon the Tierra Amarilla grant. The coals of Rio Arriba County, where developed along the line of the Denver and Rio Grande Railroad, have proven to be of an excellent coking character, producing a strong coke with good cellular structure.

From a casual inspection of the formation it appears that these coal fields might be classed as an eastern division of the San Juan County Coal Measures, and are probably of contemporaneous origin. There are three coal seams in these fields, which are, respectively, 48 inches, 40 inches, and 36 inches in thickness. The 48-inch vein and the 40-inch vein have been worked to a depth of 1,200 feet and 600 feet on slope, respectively. Operation of the thicker seam was suspended because creeping of the floor rendered it expensive to keep entries open. Only the 40-inch seam is now worked. Computing the total area at 400 square miles, allowing one-fourth of area for interruption of formation by uplifts or dikes, there would be 300 square miles, or 192,000 acres. Basing calculation upon the one seam now operated, 40 inches in thickness, or 4,000 tons per acre, would show an available body of 768,000,000 tons.

Socorro County has heretofore been credited with a coal-bearing area of 1,000 acres only, but a very much larger area of coal land has been developed in southern Valencia County and northern Socorro County. This area is estimated at 20 miles in length by 10 miles in width, or 200 square miles, about half in each of the counties named. The thickness of the coal seam developed runs from 48 to 66 inches.

At Carthage, near San Antonio station, on the Atchison, Topeka and Santa Fe Railroad, there are four producing mines in operation.

The area of this field, as far as developed, is about 1,000 acres; thickness of seam, 50 inches; quantity of coal that can be mined, 5,000,000 tons. Add to this the field above mentioned, adjoining Valencia County, amounting to 100 square miles, or 64,000 acres, with an average thickness of one coal seam of 50 inches, or 5,000 tons per acre, which would give 320,000,000 tons, making together with the Carthage field of 5,000,000 tons, a total of 325,000,000 tons. As in the other fields adjacent to the Socorro-Valencia County fields, it is far more than probable that there are several workable coal seams in this area.

On top of the Caballo Mountain Range, a few miles west of Engle station, in Socorro County are some patches of coal, but of little or no value, except as an indication that coal may underlie the extensive valley at the eastern base of the mountains. The coal here found is probably a continuation of the Carthage coal seams, and other parcels of coal land of valuable dimensions may be found in the intervening space.

Near Engle station and upon Salado Creek are found isolated patches of coal, but thus far no producing mines have been developed.

For many years it has been current rumor throughout New Mexico that there were valuable coal fields in Valencia County, but it was only recently that the value of these coal lands has been demonstrated. From reliable information obtained there are 100 square miles of valuable coal lands, being a part of the coal field and similar in every respect to that described above as extending south into Socorro County. This would give Valencia County an available supply of 320,000,000 tons. There are said to be other valuable coal areas as yet untouched in Valencia County. Many thousand acres of this land have been filed upon as coal lands at the United States land office during the past two years.

Coal areas of New Mexico and available tonnage of coal which can be profitably mined.

Field.	Area.	Thickness of coal seam.	Tonnage available.
	Acres.	*Inches*	
McKinley and San Juan counties	800,000	60	4,800,000,000
Colfax County	345,600	72	2,488,320,000
Santa Fe County	26,880	40	107,520,000
Lincoln County			1,000,000
Rio Arriba County	192,000	40	768,000,000
Socorro County	65,000	50	325,000,000
Valencia County	64,000	50	320,000,000
Total	1,493,480		8,809,840,000

In addition to the coal fields above named, there are several isolated areas of coal lands, but of undetermined extent. In the vicinity of the village of Cebolleta and Chavez Mesa, in Valencia County, there are two workable seams of coal, one 4 feet and the other 5 feet in thickness. Thousands of acres of coal lands have been located along the boundaries of Santa Fe and Bernalillo counties, and much of it entered at the land office at Santa Fe, but this is probably the area already credited to the Santa Fe County coal field. There is a

reported discovery of coal about 30 miles from Las Cruces, in Donna Ana County, near the Otero County line.

The coals of New Mexico all occur in the Cretaceous system. Prof. J. F. Kemp, of Columbia University, has assigned them the following geological order in his new work, "Kemp's Non-Metallic Minerals," for the advance sheets of which the writer acknowledges his obligation:

System.	Series.	Stage.	Fields.
Cretaceous	Laramie	Laramie	Raton; Mora; Jarillosa?; Carthage?; Whiteoaks in part.[a]
	Montana	Fox Hills	Cerillos; Tejon?; Whiteoaks in part;[a] probably also La Plata; Mount Taylor; Gallup. They are Montana.
		Pierre	No coal.

[a] A lower seam at Whiteoaks, N. Mex., is believed to be Fox Hills.

The Coal Measures of New Mexico are in many places uplifted, tilted, and broken by igneous dikes, intrusive sheets, and by disturbing influences of the more recent action of volcanoes, which has covered the Coal Measures with extrusive sheets of lava, as on the Johnson and Barela mesas in Colfax County. But the larger proportion of the coal areas of New Mexico are comparatively undisturbed and have every condition favorable to profitable coal mining.

As shown hereinabove, present development would certainly indicate a total area of 1,493,480 acres of coal land in New Mexico, with a total available tonnage of 8,809,840,000 tons. Situated as these vast coal reserves are, near the median line between the diversified industries of the east and west coasts, it is quite apparent that they will soon play an important part in the commercial economies of the nation.

The industries of both coasts will be dependent upon New Mexico coal supplies for cheap transportation, which is necessary to the interchange of products between these aforementioned sections.

COLFAX COUNTY.

Colfax County is distancing all other coal-producing counties of New Mexico, and is again first, with a net production of more than 880,087 tons for the fiscal year, an increase of 58,820 tons over the preceding fiscal year. Thus Colfax is the first county in New Mexico in coal production. In addition to the coal shipped from the mines of this county, 76,737 tons of coke were produced, an increase of 40,937 tons over the preceding fiscal year.

The prospects for increased production during the ensuing year are exceedingly bright. A railroad is now in course of construction to connect the mines of Johnson Mesa and Barela Mesa with the Atchison, Topeka and Santa Fe Railroad at Raton. The work of construction on this spur, to the mines mentioned, is now nearing completion. In addition to this line two other railroads are projected, one from the vicinity of Raton, to connect with the Chicago, Rock Island and Pacific, and the other from Dawson to connect with the El Paso and Northeastern Railroad. These railroads are to be built with the primary object of transporting the immense tonnage of coal

and coke which it is anticipated, and reasonably assured, will be produced from the mines of Colfax County within the next few years and continued for centuries hence.

Contracts have already been let for a large number of coke ovens at Blossburg, and at Dawson; it is probable that within the ensuing fiscal year 500 to 1,000 additional coke ovens will be erected.

The mines at Dawson, together with the Dawson Railway and the El Paso and Northeastern Railroad, over which lines the coal is shipped, have recently been purchased by some of the great financiers of the Eastern States. The Phelps-Dodge Company conducted the negotiations for purchase and is said to be the principal owner.

It is reliably reported that the vast coal fields of the Maxwell land grant have recently changed ownership and that greater transportation facilities will be constructed, viz, one of the projected railroads heretofore cited will be built for that purpose. Colfax County has within its limits one of the greatest fields of coking coal, if not the greatest, to be found in the United States. Demand for coke in the smelting industries of the Southwest will furnish the market for the product of these mines, and the many new railroads, as well as the settlement of the Territories of Arizona and New Mexico, will supply the necessary market for coal.

DAWSON MINES NOS. 1, 2, AND 3.

[Dawson Fuel Company, owner and operator.]

The Dawson mines are located in secs. 1 and 2, T. 29 N., R. 20 E., New Mexico principal base and meridian. The mines are situated about 35 miles southwest from Raton, Colfax County, N. Mex., and are owned and operated by the Dawson Fuel Company. The Dawson Railway, a railroad built for the transportation of coal from these mines, connects with the Rock Island Railroad at Tucumcari, N. Mex., the distance being 168 miles. This railroad crosses the Atchison, Topeka and Santa Fe Railroad at French station, 18 miles east of Dawson. Connection can also be made with the Atchison, Topeka and Santa Fe Railroad at this point, but at present there are no hotel accommodations for passengers who have to remain at French station awaiting trains on either of the railroads mentioned while en route to or from Dawson. A passenger coach is run upon the trains upon the Dawson Railway between Dawson and Tucumcari; from the latter station there is first-class accommodation either east or west.

There are known to be three coal seams of workable thickness in the Dawson Coal Measures. Only one seam is now worked, the thickness of which varies from 6 to 11 feet, with a thickness of 8 to 9 feet predominating. The thickness of vein in No. 1 mine is 11 feet; in No. 2 mine, 8 feet. In No. 2 mine there is a shale parting 2 inches in thickness at about 2 feet from bottom of vein. The thickness of vein in No. 3 mine is the same as in No. 2, with similar conditions as to shale parting.

The coal lies nearly horizontal, with little, if any, broken ground or disturbance of the formation. It is safe to presume that these workings are upon the same coal seam that is being operated by the Raton Coal and Coke Company, in Spring Gulch, 12 miles north.

The Dawson Fuel Company owns 35,000 acres of land in the intervening space between the Dawson mines and the Willow mines underlaid by this great coal vein, as well as many other seams, some of them being of good workable thickness. The system of working is by triple main, drift entries, double-cross entries, room, and pillar. The main adits into each of the mines Nos. 1 and 2, No. 3 have attained a length of 2,000 feet and 2,400 feet, respectively.

The mines are at present ventilated by means of two 24-foot Vulcan fans, with a capacity of 235,000 cubic feet of air per minute each. Electricity is used for motor haulage inside the mines and from the mines to partings outside. The haulage from the mines to the tipple is done by three 30-horsepower Porter locomotives. Six steam engines are in use upon the property, with a total capacity of 1,000 horsepower, as follows: Generator engine, 350; washer, 300; box-car loader, 100; screw, 25; electric light, 25; fans, 150; pumps, 50.

Between Nos. 1 and 2 is located the electric power house. The building is frame, 60 by 30 feet in dimensions. The plant consists of three General Electric Company direct-connection generators; combined efficiency, 360 kilowatts; voltage 250, 1,320 amperes. Electric power is used to operate the coal-cutting machines, of which two Jeffrey machines are used for driving entries. Four Jeffrey and one Westinghouse motor are in use for haulage from the mines to the partings outside; total capacity of five motors, 2,500 tons per day. In capacity, improved appliances, and economical methods this plant is unsurpassed by any in the West, and only in capacity can it be considered as second to any coal-mining plant either East or West. To enumerate a part of these improvements and equipments the following are the more important: A double trestle, with two tipples and two chutes for loading railroad cars. In connection with the tipples there are stationary and shaking screens for sizing coal for domestic and other purposes; also moving slate-picking table. Alongside the tipples and chutes is located the washery, where slack or other coal is automatically transferred from the screens and chutes, washed, and loaded into the lorries to be dumped in the coke ovens, situated within a distance of a few hundred yards from the washery. The washery has a capacity of 1,000 tons in ten hours, and is equipped with 16 jigs and the necessary auxiliary machinery to operate them.

The power for operating this plant is furnished by two sets of Stirling boilers of a combined efficiency of 500 horsepower. The power to operate the box-car loader and charge the coke ovens is furnished from the same source. One hundred and twenty-five coke ovens have been in operation during the past fiscal year. Near by is located the blacksmith shop, built of iron; dimensions, 70 by 30 feet. This shop is equipped with lathes, emery grinder, electric drilling machine, bolt and pipe cutting machinery, and blower of ample capacity to run four forges. This department is in condition to do all ordinary repair work. Power to run this machinery is provided by a 25-horsepower General Electric Company's motor. The tipple, washery, coke ovens, etc., just described are located about 1¼ miles south of the mines, the town which is incident thereto being named Eddy, after C. B. Eddy, one of the principal promotors of this great enterprise. At this point also are located the carpenter shop, 30 by 40 feet; storage building, 30 by 60 feet, and numerous tenement

houses. About 2 miles north of Eddy and near No. 1 mine is located Simpsonville, so called after one of the former principal owners in the company. Here are located many commodious dwelling houses, built upon modern and pleasing plans of architecture. Several of these buildings are boarding houses. These houses are built much after the style of suburban home architecture, pleasing to the eye from without and having modern improvements within.

Dawson is the name of the town, 2 miles south of the mines, where the general offices of the company are situated and where the residences of the superintendent and other officials are located. The town lies in the beautiful Vermejo Valley, which is irrigated by the crystal waters of the Vermejo River. On either hand are seen orchards which in spring fill the air with the fragrance of their blossoms and in fall are laden with luscious fruits, while the prevailing gentle winds come down the canyon pregnant with the perfume of the pines which adorn the eroded canyons and the table-topped sandstone hills upon all sides. The Vermejo River runs alongside the town. In this ideal location is situated the headquarters of the Dawson Fuel Company. Here is located the principal mercantile establishment of the camp, owned by the Southwestern Mercantile Company. The building is 90 by 72 feet and of more than ordinary architectural beauty. A branch store is located nearer to the mines. Here also are located the pumping plant and waterworks. An abundance of pure water is obtained from the Vermejo River. The waterworks plant consists of a Cameron pump, 20 by 30 by 10 inches. The power is supplied by one 60-horsepower tubular boiler and one 40-horsepower Scotch marine boiler. Water is conveyed to different parts of the mines and operating plants by pipe line, and the same mains convey water to all the houses for domestic purposes. The coal-mining enterprise, as a whole, is a remarkable one by reason of the celerity with which it was initiated and put in successful operation.

Average number of men employed outside, including coke ovens and washery, 200; average number of boys employed outside, 3; average number of men employed underground, 450; average number of boys employed underground, 15. Nationality to which the men belong: Austrians, Finns, Italians, Mexicans, negroes, English, Welsh, Irish, and American. Percentage that could not write, as shown by signatures to vouchers: Mexicans, 10 per cent; negroes, 20 per cent; about 5 per cent of the other nationalities could not write. Number of days mine was operated during fiscal year, 244. Gross output for fiscal year (July 1, 1904, to June 30, 1905), 423,037 tons; amount used in operating mines, 11,310 tons; net product, 411,727 tons; a net decrease of 21,349 tons from product of the preceding fiscal year. Estimated value of output at the mine, $528,797, at an average price of about $1.25 per ton.

The coal is principally sold in El Paso market, a large proportion being disposed of to railroads, smelters, and mining companies of Arizona and Mexico, and other consumers tributary to the El Paso market. The coal is shipped to market via the Dawson Railway, Chicago, Rock Island and Pacific Railroad, and El Paso and Northeastern Railroad. During the earlier months of 1905 the mines were not operated to their full capacity on account of lack of demand for coal, but the last three months of the fiscal year the demand has been greater than is customary during the summer months.

In addition to the coal produced from the mines, there was shipped 49,075 tons 14 hundredweight of coke, of an estimated average value, at the mine, of $3 per ton; total value of coke, $147,297.10. This is an increase of production of coke over preceding fiscal year of 13,275 tons.

Many improvements were made during the past year. The prospects of increased production at these mines during the ensuing fiscal year are very flattering. The mines, together with the Dawson Railway and the El Paso and Northeastern Railroad, which roads transport the product of the Dawson mines to market, have recently been sold, and it is understood that the Phelps-Dodge Company was the purchaser and is the present owner. The names of the companies operating the mines and railroads have not been changed, nor has there been any change in the management at the mines. The Phelps-Dodge Company is probably the most extensive copper mining, smelting, and manufacturing concern in the world. At their mines and smelters at Bisbee, Globe, and Douglas, Ariz., and Nacosarri, Mexico, nearly 1,000 tons of coke per day is consumed, in addition to large quantities of coal. It is reasonable to assume that this tonnage of coke and coal will be furnished from their own mines. This demand alone will necessitate the building of 400 or 500 coke ovens in addition to those now in use. It will alone create a demand for fully as great a production of coal as the output of the past fiscal year. Thus far since the change of ownership there seems to be no inclination to cease supplying former customers who purchased coal and coke. Should this course be continued there will be a demand upon these mines for coal and coke amounting to about double the quantity of coal and fully six times the quantity of coke produced during the past fiscal year.

If conditions obtain at these mines as now indicated they will within two years become the greatest producing coal mines of any single camp in the Western States or Territories.

RECORD OF INSPECTION.

September 16, 1904.—Inspected machinery, cars, etc., in use upon Dawson mines Nos. 1 and 2. Found same in good condition.

September 17, 1904.—Inspected Dawson mine No. 1, Dawson Fuel Company, operator. Air intake, 40,310 cubic feet per minute; air well distributed to working faces; 80 men employed underground.

November 7, 1904.—Inspected Dawson mine No. 2. Air intake, 52,540 cubic feet per minute; air well distributed to working faces; only 13 men employed underground to-day; mine in good condition; investigated circumstances attending accidental death of John Rocker, killed in this mine September 29, 1904; found report of same to be correct.

November 8, 1904.—Inspected Dawson mine No. 1. Air intake, 33,640 cubic feet per minute; air well distributed to working faces; 66 men employed underground; mine in good condition.

November 9, 1904.—Inspected Dawson mine No. 3. Air intake, 15,000 cubic feet per minute; air well distributed to working faces; 50 men employed underground; mine dusty in places, otherwise in good condition; gave explicit instructions to guard against danger of a dust explosion.

January 18, 1905.—Inspected Dawson mine No. 4. Air intake, 12,000 cubic feet per minute; air well distributed to working faces; 36 men employed underground; mine in good condition; gave special instructions to guard against danger of a dust explosion.

January 19, 1905.—Inspected Dawson mine No. 2. Air intake, 35,600 cubic feet per minute; air well distributed to working faces; 149 men employed under-

ground; mine in good condition; gave special instructions to guard against danger of dust explosion.

January 20, 1905.—Inspected Dawson mine No. 1. Air intake, 49,700 cubic feet per minute; air well distributed to working faces; 118 men employed underground; mine in good condition; gave special instructions to guard against danger of dust explosion.

January 21, 1905.—Inspected Dawson mine No. 3. Air intake, 15,000 cubic feet per minute; air well distributed to working faces; 89 men employed underground; found some Mexican miners about to shoot a hole which would probably have produced a blown-out shot. I condemned the hole, and instructed that it be not fired. Gave explicit instructions to guard against blown-out shots and dangers of dust explosion.

February 23, 1905.—Investigated circumstances attending accidental death of Cassimio Zerlingo, who was killed on the 4th instant in room No. 7, first west entry; found that no blame could be attached to anyone; that the accident was one of those occurrences in the coal-mining industry that can scarcely be provided against. A rock weighing 3 tons, and which when sounded in place would appear to be solid and tight, suddenly gave way from a height of 3 feet above the roof of the room, falling upon and instantly killing the miner working under it.

February 24, 1905.—Inspected Dawson mine No. 1. Air intake, 52,630 cubic feet per minute; air well distributed to working faces; 120 men employed underground; found that great care is now being exercised to guard against blown-out shots, and that the miners are compelled to cut or mine the coal before shooting; mine in good condition.

April 20, 1905.—Investigated circumstances attending the origin of the fire in third west back entry in No. 2 mine, which was discovered on the evening of March 30; found that the fire was probably caused by a small feeder of gas being ignited by flame from a shot fired by the miners working in the entry, just before quitting time in the evening, and which gained headway before the night fire boss reached that point on his round of examination. These mines very seldom show any gas, but occasionally a small feeder may vent gas for a few hours in a new heading in advance of the general workings. The fire was quickly walled off in such manner that it will soon expire from lack of oxygen.

April 21, 1905.—Inspected Dawson mine No. 1. Air intake, 51,290 cubic feet per minute; air well distributed to working faces; 102 men employed underground; mine in good condition.

April 22, 1905.—Inspected Dawson mine No. 1. Air intake, 58,500 cubic feet per minute; air well distributed to working faces; 140 men employed underground; mine in good condition.

CLIMAX AND SUGARITE MINES.

[Raton Fuel Company, lessee and operator.]

The Climax mine is located in the SE. ¼ of sec. 23, T. 31 N., R. 23 E., New Mexico principal base and meridian. It is about 1½ miles northwest of the town of Raton, Colfax County, N. Mex. The product is a good grade of bituminous coal; thickness of vein, 4½ feet, nearly horizontal. System of working: Drift, cross entry, room, and pillar. Ventilation by means of drift entry through the hill. Length of main drift entry, 1,500 feet. Mule haulage. Average number of men employed underground, 4; nationality of employees, English. Number of days mine was operated during fiscal year ending June 30, 1905, 308; number of tons of coal mined during fiscal year, 4,451; estimated value of product at mine, $6,676.50.

The coal is hauled in wagons to the town of Raton, where it is sold for domestic use. Value of improvements during fiscal year, $500.

RECORD OF INSPECTION.

January 28, 1905.—Inspected Climax mine. Air intake erratic, but air good at working faces; 5 men employed underground; traversed main entry, to junction with Willoughby Canyon opening, and all openings in operation; mine in good condition.

SUGARITE MINE.

This mine is located on the west side of Sugarite Creek, and on the east slope of Bartlett Mesa, about 3½ miles in a direct line in a northeasterly direction from Raton, N. Mex. The mine produced a good grade of bituminous coal; thickness of vein, 5 feet, nearly horizontal. System of working: Drift, cross entry, room, and pillar. Length of main drift, 600 feet. Average number of men employed underground, 4. Natural ventilation. Number of days mine was operated during fiscal year, about 308; number of tons of coal produced, 3,221; estimated value of output at mine, $4,831.50. The coal is hauled in wagons to Raton, N. Mex., where it is sold for domestic purposes, and during the past year shipments have been made to Oklahoma and Kansas.

A narrow-gauge railroad is in course of construction, which will furnish transportation facilities for the product of the Sugarite mine, as well as for other mines situated on Bartlett and Johnson mesas. Considerable preliminary work is being done by eastern capitalists in anticipation of immediate development of coal properties which they own, and which are located on Bartlett and Johnson mesas.

RECORD OF INSPECTION.

January 25, 1905.—Inspected Sugarite mine. Air intake weak and erratic; no register on anemometer; 6 men employed underground; mine in good condition except as to ventilation; instructed that ventilation be improved.

May 23, 1905.—Interviewed the general manager and superintendent of the Raton Fuel Company. Instructed them that another opening must be made into the Sugarite mine, as required by law. The opening heretofore used as a second opening is now used as a furnace shaft for ventilating purposes. The general manager and superintendent both promised that another opening would be constructed without delay.

June 24, 1905.—Inspected Sugarite mine. Investigated to learn if instructions given May 23 were being followed in regard to construction of another opening. Found that work upon another opening was being prosecuted with due diligence; mine in good condition.

VAN HOUTEN MINE.

[Raton Coal and Coke Company, owner and operator.]

The Van Houten mine, heretofore known as the "Willow mine," is located in secs. 34 and 35, T. 30 N., R. 22 E., New Mexico principal base and meridian. It is operated by the Raton Coal and Coke Company, J. Van Houten, general manager. The mine is situated about 14 miles southwest from Raton, Colfax County, N. Mex., and about 9 miles from Hebron station, on the Atchison, Topeka and Santa Fe Railroad. A branch railroad has been built from the mine to connect with the main line of the Atchison, Topeka and Santa Fe Railroad at Hebron. This branch railroad was completed and operation commenced December 1, 1902, since which date the Willow, or Van Houten, mine has been one of the largest and steadiest coal producers in New Mexico. The coal is a good quality of bituminous coal, from which a good quality of coke is made, the slack being hauled by railroad to the washery and coke ovens at Gardiner, N. Mex.

The seam is from 6 to 11 feet in thickness, the seam lying nearly horizontal, dipping 1½ per cent to the northwest. Three openings are being worked, one upon the north side and one upon the south

side of Spring Gulch, about one-half mile west of the junction with Willow Creek. Upon the north side of Spring Gulch the coal seam is from 6 to 11 feet in thickness of clean, marketable coal, averaging about 9 feet. On the south side of Spring Gulch the coal seam shows a parting of bone or shale 4 inches in thickness, leaving from 4½ to 5 feet of clean coal both above and below. Another opening is operated upon the same coal seam about three-fourths of a mile south from the openings on Spring Gulch. This opening is situated upon the main fork of Willow Creek. The general characteristics of the coal seam at this point are similar to those described on the south side of Spring Gulch. These three openings are known collectively as the Van Houten mine.

This magnificent coal seam covers a known area of 40 to 60 square miles, through a formation apparently little faulted or disturbed. At many places throughout this area the coal seam is exposed by erosion of canyons and gulches, at every place where an outcrop is found there is seen the same uniformity as to size of coal seam, and apparently little disturbed bedding plane. Electric power is employed for haulage, running fans, etc. Three generators are in use, as follows: One 100-kilowatt Card; one 150-kilowatt Card, and one 150-kilowatt Jeffrey; total efficiency, 350 kilowatts. Voltage, 550, allowance being made for 10 per cent drop. Amperes, 25 to 200. Two ventilating fans are in use. One is a Guibal fan, 24 by 8 feet; foundations, fan house, etc., constructed entirely of masonry and iron; cost about $4,000. The other, a Cappell fan, 13 by 8 feet, is constructed of masonry and iron, and cost about $6,000. The security from fire by this method of installing the fans, without any woodwork, is to be highly commended. The fans are run as exhaust, but can be changed to force fans in case of emergency. Coal-cutting machines are not in use at present, but the mine is equipped with machines for use when needed. Three steam engines are in commission, as follows: One duplex Erie engine, 200 horsepower; 1 Skinner engine, 200 horsepower, and 1 McEwan engine, 200 horsepower; total, 550 horsepower. Three motors are used to haul the coal from the partings in the mine to the tipple—one 10-ton Jeffrey motor and two 15-ton Morgan-Gardner motors.

System of working, double entry, room, and pillar; average length of main drift entries, about 3,500 feet; number of men employed underground, 279; number of boys employed underground, 5; average number of men employed outside, 20; average number of boys employed outside, 4; nationality of employees, mostly Italians, Austrians, and Germans, of the more intelligent and educated class, as evidenced by the fact that nearly all of them speak English and 90 per cent of them can read and write, as shown by signatures to vouchers; number of days mine was operated during fiscal year, 261; gross product of mine, in tons of 2,000 pounds, 354,734 tons; amount used in operating mine, 2,600 tons; net product, 352,134 tons; estimated value of net output of mine, $440,167.50.

The coal is sold to the Atchison, Topeka and Santa Fe Raliroad and at various points throughout New Mexico, Arizona, and Texas. The demand for coal from this mine was very much in excess of the supply until April 1, after which date the demand diminished. The demand always increases during the winter months. A general strike in district No. 15 was called by the United Mine Workers of America on

November 9, 1903, and although the miners were contented and claimed no grievances nor made any demands, yet they were called out by the district officers of the union, residents of Colorado, where is located headquarters of the district union officials. The employees quit work at the call of the union officials, and from June, 1904, until the early winter months there was a dearth of miners; also a shortage of railroad cars for transportation of the coal. The places of the union workmen are now being filled by nonunion employees and the mine operating as before the strike was called. The estimated decrease in production was 50,000 tons.

The use of fuel oil from the Beaumont oil fields has caused a decrease in demand for the coal from this field amounting to about 15,000 tons per month. This decrease of demand was in the El Paso market and tributary thereto. A large percentage of the loss was in demand for coal for the locomotives of the Southern Pacific Railroad, fuel oil being substituted for coal. The net product for the Van Houten mine for the year ended June 30, 1904, was 340,455 tons, against 352,134 tons, net product, for the past fiscal year, an increase of net production of 11,679 tons. From present indications the ratio of increase of production from these mines for the coming fiscal year will be much greater than for the year just past.

RECORD OF INSPECTION.

November 14, 1904.—Inspected Van Houten mine No. 3. Air intake, 23,100 cubic feet per minute; air well distributed to working faces; 74 men employed underground; gave special instructions to guard against dust explosions; mine in good condition.

November 15, 1904.—Inspected Van Houten mine No. 1. Air intake, 40,300 cubic feet per minute; air well distributed to working faces; 150 men employed underground; mine in good condition; gave special instructions to take every precaution to guard against dust explosion.

DUTCHMAN MINE.

The Dutchman mine is located in secs. 16 and 17, T. 31 N., R. 23 E., New Mexico principal base and meridian. It is situated in Dutchman Canyon, about 6 miles by wagon road in a northwesterly direction from Raton, N. Mex. It is owned and operated by the Raton Coal and Coke Company. A spur of the Atchison, Topeka and Santa Fe Railroad connects the mine with the main line of railroad at Dillon Station. Like the other Blossburg mines, it is located upon what is locally known as the Raton vein, by some called the Blossburg vein. The coal is a good grade of bituminous coal, making a good grade of coke. The coal seam is from 6 to 8 feet in thickness; dip of vein about $1\frac{1}{4}$ per cent northwest. The mine is worked on the double-entry room and pillar system. The entries have been driven to a distance of 6,000 feet from the outcrop. The mine is ventilated by a 24-foot Guibal fan, exhaust, but reversible; capacity, 75,000 cubic feet per minute. The fan is run by an independent engine. One 550-volt 75-horsepower Card generator furnishes the power for pumping and lighting, while tail-rope haulage is operated from the mine partings to the tipple, the power being furnished by a 200-horsepower steam engine.

Average number of men employed outside, 10; average number of boys employed outside, 1; average number of men employed underground, 104; average number of boys employed underground, 1.

The men are of various nationalities, Italians predominating. About 90 per cent of the employees could write, as shown by signatures to receipts and vouchers. The mine was operated two hundred and eighty days during the fiscal year. Gross output, 107,158 tons; amount used in operating mine, 2,304 tons; net product of mine, 104,854 tons; estimated value of net product at mine, $131,067.50. The net product shows an increase in tonnage over the preceding fiscal year of 69,140 tons. The coal is marketed in Arizona, New Mexico, and Texas, and is shipped from the mine via the Atchison, Topeka and Santa Fe Railroad. The production of this mine was restricted by reason of shortage of railroad cars and dearth of miners from June until November, 1904, due to strike conditions.

The demand for the product of this mine was good and in excess of supply, but fell off considerably during the summer months by reason of the substitution of fuel oil from Beaumont and El Paso, Tex., and California.

Extensive improvements have been made at the coke ovens, which are operated on slack from this mine and from the Van Houten mine. A new coal washery has been built for the treatment of the slack. The plant has a capacity of 400 tons per day at present and the company intends doubling this capacity in the near future. The contract has already been let for the building of 50 more coke ovens in addition to those now in operation, and it is probable that the contract will be increased to build 180 new ovens, in which event another washery will be built. There is good reason to expect an increased production from this mine during the ensuing year.

RECORD OF INSPECTION.

September 14, 1904.—Inspected Dutchman mine. Air intake, 22,400 cubic feet per minute; air well distributed to working faces; 74 men employed underground; mine in good condition.

November 11, 1904.—Inspected Dutchman mine. Air intake, 22,880 cubic feet per minute; air well distributed to working faces; 93 men employed underground; mine in good condition; found that trips loaded with timbers were allowed to run quite rapidly down the main slope entry and that there was no slow signal for the engineer to run by; instructed that a system of signals, including a slow signal, be formulated, and that a written or printed key to the signals be hung in the engine room in plain view of the engineer.

January 24, 1905.—Inspected Dutchman mine. Air intake, 26,468 cubic feet per minute; air well distributed to working faces; 130 men employed underground; mine in good condition.

March 23, 1905.—Inspected Dutchman mine. Air intake, 22,400 cubic feet per minute; air well distributed to working faces; 90 men employed underground; mine in good condition.

BRILLIANT MINE.

The Brilliant mine is located in the NW. $\frac{1}{4}$ of sec. 6, T. 31 N., R. 23 E., New Mexico principal base and meridian. The mine is owned by the Raton Coal and Coke Company. This is a new mine, only recently developed and not yet placed upon the list of producing mines as no shipments have been made. It is located upon the upper seam, known as the Tin Pan seam, which is 600 or 700 feet higher in the Coal Measures than the Blossburg seam, which is worked in the Blossburg, Dutchman, Van Houten, and Dawson mines. The coal is from 5 to 7 feet in thickness and dips about $1\frac{1}{2}$ per cent to the northwest.

A drift entry has been driven 300 feet and development work is being prosecuted as fast as conditions allow. The mine will be developed and operated on the double-entry, room and pillar system. Fourteen men are employed underground at present and 25 men outside. The mine will be ventilated by an exhaust fan. As the pitch of the seam is light the grades in the entries will allow of the economical use of mules for haulage which will be the method employed for a considerable length of time. While the coal is of an exceptionally good coking quality, it still surpasses the product of the lower seam as a domestic coal. The analysis shows a higher percentage of fixed carbon and lower in ash than the coal from the lower seam. The mine is situated about 5 miles northwest from the Dutchman mine, from which point a railroad is now being built. The company intends erecting shaking screens and any other device necessary to put the coal in the best possible shape to supply the demand for a first-class domestic coal. It is expected that the railroad to the mine will be completed and shipments from this mine will commence about October 1, 1905, adding another to the list of producing mines of the Territory.

LLEWELLYN MINE.

[Thomas Llewellyn, owner and operator.]

This mine is located in secs. 17, 18, and 20, T. 31 N., R. 26 E., New Mexico principal base and meridian, about 12 miles northeast from the town of Raton, N. Mex. It lies about 200 feet beneath the lava sheet which constitutes the top of Johnson Mesa. The coal seam outcrops in the several canyons eroded along the sides of the elevation known as Johnson Mesa. The town of Raton is the nearest railroad point. The Santa Fe, Raton and Eastern Railroad, now being built, will run within a few miles of the property. The coal is a good quality of bituminous; thickness of vein, 7½ feet; lies nearly horizontal. System of working: Drift, single entry, room and pillar; length of main drift entry, 550 feet; system of ventilation, air shaft; number of men employed underground, 2; 1 boy employed outside; number of days mine worked during fiscal year, 250; number of tons of coal produced during same period, 2,000; estimated value of product at the mine, $2,000. The coal is sold to the farmers upon Johnson Mesa and to residents of Folsom and Raton, N. Mex., for domestic purposes.

TURNER MINE.

The Turner mine is located in E. ½ NE. ¼ and E. ½ SE. ¼ sec. 18, T. 31 N., R. 25 E., New Mexico principal base and meridian, about 12 miles northeast from Raton, N. Mex. Like the Llewellyn mine it lies about 200 feet beneath the lava sheet. Nearest railroad point is Raton, N. Mex. Thickness of coal seam, 4½ feet; kind of coal, bituminous; system of working, drift, room and pillar; ventilation by air shaft; length of main drift entry, 500 feet. This mine was not operated during the past fiscal year. It is understood the mine has been purchased by parties interested in the Santa Fe, Raton and Eastern Railroad Company, which company is now building the above-named railroad for transportation of coal from the mines on Johnson Mesa and Barela Mesa.

HONEYFIELD MINE.

[Honeyfield Brothers, owners and operators.]

The Honeyfield mine is located in sec. 2, T. 31 N., R. 24 E., New Mexico principal base and meridian. It is situated about 9 miles northeast from Raton, N. Mex., that town being the nearest railroad point at present, but the Santa Fe, Raton and Eastern Railroad, now in course of construction, will be within a short distance of this mine. The coal is a good quality of bituminous; thickness of coal seam, 5 feet, nearly horizontal. System of working, drift, single entry, room and pillar; length of main drift entry, 250 feet; three men employed underground; number of days mine was operated during fiscal year, 200; number of tons of coal produced during same period, 1,200; estimated value at mine, at $1 per ton, $1,200. The coal was shipped to Raton, N. Mex., by wagon, thence part of it was shipped by rail to market in Kansas during last winter, and a portion of the product was sold in Raton, N. Mex., for domestic purposes.

RECORD OF INSPECTION.

January 26, 1905.—Inspected Honeyfield mine. Air intake weak, showing no register on the anemometer; 3 men employed underground; inspected all openings in operation; found that no second opening had been made into the mine, and instructed that the second opening be made without any further delay, as my instruction to that effect on my last prior inspection had been unheeded; owners promised compliance with my instruction.

March 24, 1905.—Inspected Honeyfield mine. Air intake weak, no register on the anemometer; 3 men employed underground; found that the instructions given heretofore to construct a second opening into the mine, as required by statute, had not been complied with, and in the course of my official duty reported the condition to the honorable Secretary of the Interior, who addressed a communication to Hon. M. A. Otero, governor of New Mexico, requesting him to take the necessary steps to have the law complied with, which was done.

May 24, 1905.—Inspected Honeyfield mine. Found mine in good condition; found that a second opening had been constructed into the mine, as per instructions of the honorable Secretary of the Interior, transmitted via the Hon. M. A. Otero, governor of New Mexico.

SPERRY MINE.

This mine is located in sec. 5, T. 31 N., R. 25 E., New Mexico principal base and meridian. It is situated about 11 miles from Raton, N. Mex. It is opened by a drift entry about 200 feet in length. Average number of men employed underground, 1; number of days mine was operated, 150; net product, 500 tons. The coal is hauled by wagon to Raton and sold for domestic purposes. The mine is owned by Elmer Sperry, Raton, N. Mex. It is operated under lease by Mathew Scott and James Polly. The nearest railroad point at present is Raton, N. Mex., but the Santa Fe, Raton and Eastern Railroad, now in course of construction, will give railroad facilities within a short distance of the mine.

RECORD OF INSPECTION.

January 27, 1905.—Inspected Sperry mine. Air intake erratic and baffling, no record on anemometer; 2 men employed underground; found only one opening into mine; instructed manager that a second opening must be constructed, in accordance with the statute, which instruction he promised to comply with without delay.

May 24, 1905.—Inspected Sperry mine. Found that second opening has not been made as instructed on my last inspection; the operators promised to construct second opening as quickly as possible.

LINCOLN COUNTY.

Lincoln County ranks fourth among the coal-producing counties of New Mexico for the fiscal year ending June 30, 1905. The Capitan mines produced 42,250 tons, and the Old Abe coal mine, at White Oaks, produced 890 tons, or a total of 43,140 tons net, a decrease of 49,355 tons from the output of the preceding fiscal year. The decrease is due to faults and rolls encountered in the Capitan mines. No. 2 mine, formerly called No. 4, was abandoned, the slope pillars being drawn several months ago. The slope pillars are now being drawn in No. 1 mine, and the Capitan coal field, if operated at all in the future, will only rank as a country coal bank operated for local domestic purposes. The disturbed conditions encountered in the Capitan mines does not make a pleasant preface to the development of coal fields in Lincoln County, but there is yet to be developed a promising coal area near White Oaks, which may prove of sufficient extent to support a long-lived coal-mining camp. In addition to the White Oaks field, there are several small segregated patches of coal land that may develop country coal banks and supply the local demands of the county, but there is little probability that the coal mines of Lincoln County will ever rank among the heavy producing coal mines of New Mexico.

CAPITAN MINES.

[New Mexico Fuel Company, owner and operator.]

The Capitan mines are situated at the town of Coalora, N. Mex., formerly called North Capitan, within 1 mile of the terminus of a branch of the El Paso and Northeastern Railroad. This branch road leaves the main line at Carrizozo Station, 143 miles from El Paso, Tex., and 25 miles from the terminus of the branch at Capitan. Capitan mine No. 1 is located in sec. 4, T. 9 S., R. 14 E., New Mexico principal base and meridian. There are 10 seams of coal in these measures, but only 2 of workable thickness. These 2 veins are known as the Ayers vein and the Akers vein. The former is from 2 to 2½ feet in thickness and the latter from 3½ to 6 feet in thickness. Only the Akers vein has been operated in mines Nos. 1 and 2. Dip of vein 12°. System of working, slope, double entry, room and pillar. The No. 1 mine is ventilated by an exhaust fan. A 55-horsepower steam engine provides the power for haulage, and a 20-horsepower engine runs the fan. Depth of main slope, 1,100 feet.

Capitan mine No. 2, formerly known as No. 4 mine, is located in NE. ¼ of NE. ¼ and SE. ¼ of NE. ¼ sec. 8, T. 9 S., R. 14 E., New Mexico principal base and meridian. The mine is located upon the same branch of the El Paso and Northeastern Railroad as described in preceding article upon Lincoln County mines. It is located upon the same coal seam as Capitan No. 1, and has a thickness of 3½ to 6 feet of good quality of bituminous coal of coking variety, similar in this respect to No. 1 mine. The seam dips at an angle of 12° and is worked by slope, cross entry, room and pillar; depth of slope, 1,700

feet; workings ventilated by exhaust fan. Steam power is used, 125 horsepower being utilized as follows: Haulage engine, 50 horsepower; compressor, 55 horsepower; fan, 20 horsepower. Number of men employed underground during past fiscal year in Capitan mines Nos. 1 and 2, 60; number of boys employed underground, 2; number of men employed outside, at both mines, 21; number of boys employed outside, 2. Nationality of employees, Americans, Italians, Spanish-speaking natives of New Mexico, Irish, and Scotch. As shown by signatures to vouchers 99 per cent of the Spanish-speaking natives could write, and all others signed the vouchers. Number of days mines were operated during fiscal year, 254; gross output for fiscal year, 45,439 tons; amount used in operating mines, 31,089 tons; net product, 42,250 tons; estimated value of net product at the mines, at $2.47 per ton, $104,656.10.

The coal is marketed in El Paso, Tex. The population of Coalora has dwindled from 500 two years ago, until to-day there are less than 25 residents in the camp. The post-office has been discontinued, and the majority of the buildings are being torn down and moved away. No. 1 mine is being operating to a small extent and the principal part of the product is being sold for fuel at the United States Merchant Marine Sanatorium at Fort Stanton.

The last shipment, by railroad, from No. 2, formerly No. 4 mine, was made upon April 27, 1905, and the last shipment by rail from No. 1 mine was made upon June 3, 1905. The production since those dates has been transported to its destination by wagon.

RECORD OF INSPECTION.

October 20, 1904.—Inspected Capitan mines. Found that mines had temporarily suspended operation on account of shortage of railroad cars, occasioned by washouts on the railroad; that the fans upon the mines were kept running and that ventilation was kept up and mines in good condition.

February 6, 1905.—Inspected No. 2 mine. Air intake, 20,600 cubic feet per minute; 20 men employed underground on each shift—2 shifts; found that trips of loaded cars were being hoisted out of the slope without a drag; instructed that a drag be used upon all trips hoisted from the mine; mine in good condition.

February 7, 1905.—Inspected No. 1 mine. Air intake, 12,000 cubic feet per minute; air well distributed to working faces; 40 men employed underground; mine in good condition.

February 8, 1905.—Again inspected No. 2 mine, where a trip of 10 loaded cars were wrecked while being hoisted, by the breaking of the cable just when the trip reached the surface; found that 7 of the 10 cars were badly wrecked, some of them being reduced to so much débris, the other 3 cars also broken; the lives of some of the miners had been seriously endangered, but fortunately no one was hurt; the rope rider was to blame for overloading the cable, against explicit instructions of the superintendent, and he was also to blame for having no drag upon his trip, in direct violation of instruction given him by the mine inspector.

April 8, 1905.—Inspected No. 2 mine. Air intake, 11,000 cubic feet per minute; air well distributed to working faces; 20 men employed underground; mine in good condition.

April 10, 1905.—Inspected No. 1 mine. Air intake, 14,000 cubic feet per minute; air well distributed to working faces; 40 men employed underground; mine in good condition.

June 8, 1905.—Inspected No. 1 mine. Air intake, 5,200 cubic feet per minute; air well distributed; 4 men employed underground; mine in good condition.

OLD ABE MINE.

[Old Abe Gold Mining Company, owner and operator.]

The Old Abe mine is located in the NW. ¼ sec. 5, T. 7 S., R. 13 E., New Mexico principal base and meridian. The coal mine is located about 12 miles north from Carrizozo Station, on the El Paso and Rock Island Railroad and about 3 miles from the town of White Oaks, N. Mex. The mine produces a good grade of bituminous coal. There are two seams of coal upon the property, each 3 feet 6 inches in thickness. Only the No. 1 vein is being operated, No. 2 seam having an opening but 30 feet in depth on dip of vein; only sufficient development on this seam to demonstrate the thickness of seam and quality of coal. On No. 1 vein a slope has been sunk 450 feet, showing an even and continuous coal seam. System of working: Combination of long wall with single entry, room and pillar. Natural ventilation through second opening. A common-sense horsepower whim is used for hoisting the coal from the slope. Number of men employed underground, 3; number of men employed outside, 1; nationality of employees, Americans and Mexicans. All could read and write. Number of days mine was operated during fiscal year, 210; production of mine, 890 tons; estimated value of output of mine, at $3 per ton, $2,670. The mine is operated for the supply of fuel for the Old Abe gold mine and mill, located 3½ miles from the coal mine. There being no available transportation facilities, coal from this mine can not be shipped to outside markets.

M'KINLEY COUNTY.

McKinley County, while it has equal if not greater resources in coal areas and probably greater available tonnage, took second place among the coal-producing counties of New Mexico during the past fiscal year, the gross production being 461,780 tons; quantity used in operating mines, 30,892 tons, leaving the net product shipped 430,888 tons, a decrease as compared with the preceding fiscal year of 93,679 tons.

The development of the mines, as well as equipment, shows a capacity far exceeding the production during the past year. The reason for decreased production was the lessened demand, due to the use of fuel oil on the transcontinental railroads in the Pacific Coast States, as well as the use of fuel oil for manufacturing and domestic purposes in the same localities, as set forth more fully in preceding pages of this report.

The coals of McKinley County, so far as developed, have proved to be lignites of noncoking character. Much of the flattering prospect for the immediate development of the Colfax County coal field is due to the fact that the coal is of an excellent character for coking and is much sought for on that account, the coke being in great demand at the large smelters at El Paso, Tex., Douglas and Clifton, Ariz., and Canannea, Nacosari, and many other mining camps in Old Mexico. McKinley County is forced to depend upon the demand for its coal as a fuel to make a market for the product of its mines. Thus it is greatly handicapped at present by the plentiful supply of fuel oil in the Pacific coast fuel markets.

WEAVER MINE.

[American Fuel Company, owner and operator.]

The Weaver mine is located in the SE. ¼ of sec. 34, T. 16 N., R. 18 W., New Mexico principal base and meridian. The mine is connected with the main line of the Santa Fe Pacific Railroad at Gallup, N. Mex., by a branch road 3½ miles in length, which furnishes transportation facilities. There are six veins of coal on this property, identical with those hereinafter described in the Gallup mine. Two veins are being worked in the Weaver mine, known as Nos. 3 and 3½. Thickness of coal seams: No. 3 vein, 5 feet; No. 3½ vein, 5 to 7 feet. Both seams have sandstone roof and floor, in general, throughout the mine. The mine is opened by drift into the veins, then by double entry, rib, and room system. The mine is ventilated by a propulsion fan, reversible. The mine mouth is located 800 feet from the tipple, on an elevation of 6 inches in 100 feet, so that mules easily haul the loaded trips to the tipple and have but a slight grade to overcome, returning with the empty trip.

A 30-horsepower steam engine runs the fan, an 80-horsepower engine the shaking screen and slack blower, and a 100-horsepower engine for hoisting. Length of No. 1 opening, 3,012 feet; No. 2 opening, 2,417 feet; dip of vein, 3½ per cent; worked against the pitch. The mine is equipped with the most improved appliances for economical operation—tipple, chutes, shaking screens, and slack blower, machine shop, carpenter and blacksmith shops. Dwellings have been erected for the use of employees. A well 1,000 feet in depth furnishes an ample supply of water for the camp and mine; bath houses, with accommodations for 150 men; stables, grain storehouse, powder magazine, and oil rooms. Average number of men employed underground, 265; average number of boys employed underground, 7; average number of men employed outside, 57. The employees are of various nationalities and races—Americans, Hungarians, Italians, English, Irish, Scotch, Germans, Slavs, Swedes, Mexicans, Japanese, and Navaho Indians. As shown by signatures to vouchers, the following percentages of the different nationalities could not write: Mexicans, 10 per cent; Italians and Slavs, 8 per cent; Hungarians, 5 per cent; Germans, 4 per cent; Navaho Indians, 98 per cent; all others, 1 per cent.

The mine was operated one hundred and ninety-five days during the past fiscal year; the gross product of the mine was 280,816 tons; used in operating the mine, 24,459 tons; net output, 256,357 tons; estimated value of net output at the mine, at an average price per ton of $1.37, $351,722. The coal was sold in California, Arizona, and New Mexico, a large percentage of it being used upon the Santa Fe Pacific Railroad. Use of fuel oil, as cited in earlier pages of this report, has diminished the demand for the product of this mine 5,000 tons per month at least, yet the demand is greater than production during the winter months.

The camp is provided with all conveniences possible, and more than usually found in coal camps. Convenient hydrants supply water to all the dwelling houses, each house being supplied with covered garbage receptacles, which are emptied every day by a camp scavenger, with horse and wagon, employed by the company for the purpose.

Every effort is made for the comfort and sanitary welfare of the employees.

The officials of the company have given the mine inspector every aid in the protection of the miners from the dangers of their hazardous occupation. Early in the calendar year the mine inspector put forth extraodinary efforts to guard against dust explosions in the mines of the Territory. The officials of this company did all in their power to assist. For three months they employed one or two intelligent miners to inspect the holes drilled by the miners, and at the same time these men taught the miners to guard against danger of dust explosions. After the men were thoroughly posted upon the danger of dust explosion caused by a "blown-out shot," they were held responsible, and were instructed to either cut or mine the coal before shooting, and the following notice to that effect, in English and in foreign languages, was posted at the blacksmith shop, saloons, and other conspicuous places:

NOTICE TO MINERS.

Owing to the great danger that exists to life and property caused by blasting coal off the solid, that is, before it has been mined or cut, miners are strictly prohibited from firing what are termed "windy shots." Disobedience of this rule will be sufficient cause for immediate discharge from the service of this company.

THE AMERICAN FUEL COMPANY,
By HUGH MCGINN, *Superintendent.*

Approved:
G. W. BOWEN, *President.*
THOS. PATTISON, *General Superintendent.*

RECORD OF INSPECTION.

October 26, 1904.—Inspected Weaver mine, No. 1 opening. Air intake, 46,000 cubic feet per minute; air well distributed to working faces; 200 miners, 35 drivers, and 15 company men employed underground; total, 250 miners; mine in good condition.

October 27, 1904.—Inspected Weaver mine, No. 2 opening. Air intake weak and erratic as connections have not yet been made with No. 1 opening, which connects with the fan; connection will soon be made; air at working faces is good; 20 men employed underground upon each shift; mine in good condition.

November 18, 1904.—Inspected Weaver mine, No. 1 opening. Air intake, 47,600 cubic feet per minute; air well distributed; 225 men employed underground; mine in good condition.

February 15, 1905.—Inspected Weaver mine, No. 1 opening. Air intake, 18,000 cubic feet per minute; air well distributed; 155 men employed underground; mine in good condition.

February 16, 1905.—Inspected Weaver mine, No. 2 opening. Air intake, 37,200 cubic feet per minute; 175 men employed underground; mine in good condition.

June 15, 1905.—Inspected Weaver mine. Air take to whole mine, 75,000 cubic feet per minute; air well distributed; 290 men employed underground; mine in good condition.

HEATON MINE.

[American Fuel Company, owner and operator.]

The Heaton mine is a new mine opened within the last year. It is located in sec. 35, T. 16 N., R. 18 W., New Mexico principal base and meridian. It is about 1½ miles distant, by wagon road, from Gibson, N. Mex. The mine is connected with the main line of the Santa Fe Pacific Railroad at Gallup, N. Mex., by a branch road 4 miles in length, which furnishes transportation facilities. There are six veins of coal in this property, identical with those hereinafter

described in the Gallup mine. Two veins are opened in the Heaton mine, known as Nos. 3 and 3½. Thickness of coal seams: No. 3 vein, 5 feet; No. 3½ vein, 5 to 7 feet. Both seams have sandstone roof and floor, in general, throughout the mine. The mine is opened by a slope 1,537 feet deep into the veins; then by double entry, rib, and room system. The mine is ventilated by a propulsion fan. A 50-horsepower engine is in use to hoist the trips from the mine. Average number of men employed underground, 30; average number of boys employed underground, 1; average number of men employed outside, 7. The employees are of various nationalities—Americans, Italians, Scotch, Germans, Slavs, English, and Irish. About 90 per cent of the employees could write, as shown by signatures to vouchers.

The mine was operated sixty-nine days during the fiscal year; the gross product was 7,543 tons; amount used in operating the mine, 533 tons; net product, 7,010 tons. Estimated value of net product at the mine, $9,127. The coal is marketed in California, Arizona, and New Mexico, a large percentage being used upon the Atchison, Topeka and Santa Fe Railroad coast lines. The demand for coal does not furnish market for the product of this mine continuously operated, but it will for the present be held as a reserve to supply the excessive demand for coal during the winter season. Development thus far has proven a very valuable coal area in this mine.

RECORD OF INSPECTION.

May 1, 1905.—Inspected Heaton mine. Air intake, 2,800 cubic feet per minute; ventilating current weak at working faces, but foundations are built for a fan, which will soon be installed; 25 men employed underground.

GALLUP MINE.

[American Fuel Company, owner and operator.]

The Gallup mine is situated at the village of Gibson, N. Mex. The mine lies in secs. 33 and 34, T. 16 N., R. 18 W., New Mexico principal base and meridian, and is connected with the main line of the Santa Fe Pacific Railroad by a branch road, 3½ miles in length, which furnishes transportation facilities for the product. There are six coal seams of workable thickness and extent in this property, with an average cover of 200 feet on top of vein. The seams are all exposed by outcrop, which shows the distance between the seams to be very irregular—from 7 to 30 feet apart. The thickness of these coal beds is as follows: No. 1, 6 feet; No. 2, 5 feet; No. 3, 5 feet; No. 3½, 5 feet; No. 4, 4 feet; No. 5, 6 feet. Three of these veins—No. 3, No. 3½, and No. 5—are worked in the Gallup mine. The mine is operated by slope, double entry, room and pillar system. Ventilation is by propulsion fan. Steam power is used in operating the mine—five engines of 100, 50, 100, 30, and 35 horsepower; total, 315 horsepower. This mine has precedence for the deepest slope in New Mexico—about 5,000 feet. Dip of coal seams from 5° to 14°; average, 10°.

Operation of this mine was suspended during the early part of 1904, on account of a fire which had been burning in the old abandoned workings for many years and appeared to be approaching the present workings, as indicated by noxious gases which were perceptible to some extent in the part being operated. It was considered advisable

to shut the mine and thus exclude air from the fire, which will probably die out. The same field can be reached from the new No. 3 slope in the Weaver mine, which adjoins the Gallup mine.

CATALPA MINE.

[American Fuel Company, owner and operator.]

The Catalpa mine is located in NE. ¼ of sec. 34, T. 15 N., R. 18 W., New Mexico principal base and meridian. The mine lies about 5 miles south of the town of Gallup, and is connected with the main line of the Santa Fe Pacific Railroad by a branch road 5 miles in length. There are four known seams of coal in the measures at this mine which average 5 feet in thickness. Two of these seams, known locally as the "Crown Point" and "Thatcher" veins, are worked through the Catalpa mine, the thickness of the coal in these seams being about 5 and 6 feet, respectively. Kind of coal, lignite; dip of vein, 8°; depth of slope, 2,400 feet; system of working, slope from outcrop, double entry, room and pillar; ventilation, by exhaust fan. Steam power is used for haulage and other purposes. Four engines—125, 100, 30, and 35 horsepower—are used for haulage, operating tipple, screens, fan, etc. On February 14, 1902, operation of this mine was temporarily suspended because of the increased production of the Weaver mine being sufficient to supply all demands. In other words, the substitution of oil for coal as a fuel in California and on the western divisions of the transcontinental railroads has lessened the demand from that direction upon the Gallup coal fields. This mine was not operated during the past fiscal year and it is not probable that it will be on the list of producing mines in the near future, as most of the equipment, as well as residences for employees, have been removed to the Heaton mine, cited hereinbefore.

W. A. CLARK MINE.

[Clark Coal Company, owner and operator.]

This mine is located in NE. ¼ sec. 14, T. 15 N., R. 19 W., New Mexico principal base and meridian. A spur of the Santa Fe Pacific Railroad connects the mine with the main line of railroad and furnishes transportation facilities. The property has an area of 1,200 acres, underlain by five veins of coal of the following thickness, as shown by diamond-drill borings: Commencing at the top the first coal seam is encountered at a depth of 3 feet from the surface, thickness of coal, 3 feet; 18 feet below first seam the second seam is found with 2 feet of coal; at a depth of 7 feet below the second seam the third seam, carrying 4½ feet of coal, is reached; 5 feet farther down the fourth seam with 6 feet of coal is found, and 40 feet below the fifth coal seam with a thickness of 4 feet of coal is reached. The fourth seam—the 6-foot seam—is at present worked in the W. A. Clark mine. This vein varies from 4½ to 7½ feet in thickness. Dip of vein varies from 1 to 11 per cent. The system of working is drift, double entry, room and pillar. Depth of main entry about 4,800 feet from mouth of entry to face.

The mine is ventilated by one Capell fan (exhaust) 14 feet in diameter, located on a shaft about the center of the workings, and one

Buffalo fan inside. Electricity is used for haulage, running machines, and other power needed in the operation of the property. Capacity, 600 horsepower; 390 kilowatts, 250 volts, varying amperes as necessary. The electric machinery in use is of various types—Goodman, Morgan-Gardner, Jeffrey, Westinghouse, and Siemens-Halske. Six electric motors, 4 Goodman and 2 Jeffrey, aggregating 500 horsepower, are used to bring the coal out of the mine and onto the tipple. The mine is equipped with 7 coal-cutting machines of 1,000 tons per day capacity; none of the cutting machines are now in use. Four steam engines are in commission on the property, viz: One 250-horsepower high-speed engine; one 175-horsepower high-speed engine; one 175-horsepower low-speed Corliss engine, and one 25-horsepower slide-valve engine. During the year a new Scotch marine-type return tubular boiler of 150 horsepower was added to the steam plant.

Average number of men employed underground, 128; average number of boys employed underground, 12; average number of men employed outside, 39; average number of boys employed outside, 16. The men are of various nationalities, Europeans predominating. As shown by signatures to vouchers, 85 per cent of the men could write. The mine was operated 254 days during the fiscal year. Total output for the fiscal year ending June 30, 1905, 125,160 tons; number of tons used in operating the mine, 4,200; net product of mine, 120,960 tons. This shows a decrease in production below the preceding fiscal year of 5,040 tons. Estimated value of output at the mine, $181,482. The coal is marketed in New Mexico, Arizona, California, Old Mexico, and Texas, a considerable portion being used at the copper mines of Senator W. A. Clark, at Jerome, Ariz., and on the Santa Fe, Prescott and Phoenix Railroad, and United Verde and Pacific Railway. The product is shipped over the Atchison, Topeka and Santa Fe coast lines.

The use of fuel oil in the territory where the coal from this mine was marketed, it is estimated, has lessened the demand 50 per cent, and consequently curtailed the production to that extent. The oils which have been substituted for this coal are produced at Bakersfield, Cal., and Beaumont, Tex. The California oil replaced coal from this mine for railroad purposes in the Pacific States and Territories, and the Texas oil replaced the coal in Old Mexico and Texas for railroad, manufacturing, and domestic uses.

During the earlier part of the fiscal year the demand for coal was light, and in the winter months when the demand was greater there was a scarcity of miners, which was another factor in restricting the production of the mine.

RECORD OF INSPECTION.

October 28, 1904.—Inspected W. A. Clark mine; Clark Coal Company, operator. Air intake 36,800 cubic feet per minute, air well distributed to working faces; 123 men employed underground; mine dry and dusty; gave instructions that it be kept sprinkled to allay dust and that precautions be taken to avoid a dust explosion; investigated conditions at areas where 2 gob fires have been burning in the mine; fires well isolated by fire wall; instructed that precaution be taken to guard against noxious gases from fire entering operated parts of the mine; mine otherwise in good condition, well timbered, no fire damp, ventilation very good.

February 17, 1905.—Inspected W. A. Clark mine. Air intake 38,000 cubic feet per minute, air well distributed to working faces; 110 men employed under-

ground; made careful examination of fire walls around 2 burning areas, gob fires, in the mine; found that 3 men are constantly guarding against any danger from the fires; mine dry and dusty; instructed that great care be exercised to guard against dust explosion; mine otherwise in good condition, well timbered; ventilation good.

April 27, 1905.—Inspected W. A. Clark mine. Inspected vicinity of gob fires in mine; found no danger to miners; air traveling in mine 37,800 cubic feet per minute, air well distributed to working faces; 103 men employed underground; mine dry and dusty; found 2 miners shooting off the solid, thus creating danger of a dust explosion by a blown-out shot; instructed that these men be compelled to cut or mine their coal before shooting and that all other miners be required to do the same. The mine foreman informed me that miners would be discharged for shooting off the solid. Mine otherwise in good condition.

OTERO MINE.

[Caledonian Coal Company, owner and operator.]

The Otero mine is located in the NE. ¼ of the NW. ¼ of sec. 14, T. 15 N., R. 18 W., New Mexico principal base and meridian. It lies about 3 miles east and 1 mile north of the town of Gallup, N. Mex. A spur connects the mine with the main line of the Santa Fe Pacific Railroad.

Four seams of workable thickness are known in the property, viz, Crown Point, Thatcher, Black Diamond, and Otero. Three of these veins are worked through the Otero mine, viz, Crown Point, 4½ feet in thickness; Thatcher, 4½ feet; and Otero, 5 feet.

The system of working is by slope, double entry, room and pillar. The mine is ventilated by a Crawford & McCrimmon 12-foot fan. Six steam engines are in use at the mine, viz, hoisting, 50 horsepower; blower, 25 horsepower; fan, 16 horsepower; 2 pump engines, 10 horsepower each; and 1 of 12 horsepower. Depth of slope 1,400 feet; dip of vein, 2 to 8 per cent; kind of coal, lignite; thickness of vein, 5 feet. Average number of men employed underground, 30; average number of men employed outside, 18; nationality of employees not obtained. Number of days the mine was operated during the fiscal year, 182; total output for fiscal year, 27,546 tons; amount used in operating mine, 1,700 tons; net product, 25,846 tons; estimated value at the mine, $38,769.

The coal is marketed principally in California, Arizona, New Mexico, Texas, and Mexico, being shipped over the Atchison, Topeka and Santa Fe Railroad; El Paso and Southwestern Railroad, and Cananea, Yaqui River and Pacific Railroad.

The output of this mine was very much restricted by reason of excess of supply over demand, attributable to substitution of oil for fuel in the localities heretofore dependent upon these coal fields for fuel supply.

RECORD OF INSPECTION.

The mine inspector went to this mine four times during the fiscal year, but on three of these trips found operation temporarily suspended. On June 16 visited the mine and found superintendent improving ventilation, which improvement would be completed that day. Mine in good condition.

THATCHER MINE.

[Caledonian Coal Company, owner.]

The Thatcher mine is located in the SW. ¼ of sec. 12, T. 15 N., R. 18 W., New Mexico principal base and meridian, and is situated about 3 miles in an easterly direction from the town of Gallup, N.

Mex. A spur connects the mine with the main line of the Santa Fe Pacific Railroad. Two coal seams are worked in the Thatcher mine, one known as the Thatcher and the other as the Black Diamond. Average thickness of each coal seam, 4 feet 6 inches. System of working, slope, double entry, room and pillar. Ventilation by exhaust fan; 6 steam engines are in use, viz, hoisting engine, 160 horsepower; blower, 60 horsepower; fan, 16 horsepower, and 2 pumping engines of 10 and 12 horsepower. Dip of coal seams, about 4°; depth of slope, 1,800 feet. This mine was not operated during the past fiscal year as there was not sufficient demand for the product. Lack of demand was due to the substitution of oil for fuel in California and on the Pacific coast railroads.

ROCKY CLIFF MINE.

[Stephen Canavan, owner and operator.]

The Rocky Cliff mine is located in the SE. ¼ of SE. ¼ of sec. 10, T. 15 N., R. 18 W., New Mexico principal base and meridian. It is situated about 2 miles northeast from the town of Gallup, N. Mex. A spur connects the mine with the main line of the Santa Fe Pacific Railroad. Thickness of coal seam, 5 feet; dip, about 3 per cent; system of working, slope, single entry, room and pillar; depth of slope, 1,200 feet; ventilation by furnace shaft. Mule haulage to tipple. Average number of men employed underground, 20; number of men outside, 2. Nationality of employees, principally Europeans. Percentage who could not write, as shown by signatures to vouchers, 5 per cent. Number of days mine was operated, 200; total output, 16,000 tons; estimated value of output at mine, $21,600. The coal is marketed in Arizona, California, and New Mexico, and is shipped via the Atchison, Topeka and Santa Fe Railroad. The same causes which restricted production of this field also restricted production at this mine, viz, substitution of fuel oil.

RECORD OF INSPECTION.

June 17, 1905.—Inspected Rocky Cliff mine; found operation temporarily suspended; mine in good condition.

CANAVAN MINE.

[Stephen Canavan, owner and operator.]

This is a new mine, opened during the past fiscal year. It is located in the SE. ¼ of sec. 4, T. 16 N., R. 18 W., New Mexico principal base and meridian. This mine has been in the prospective stage up to the end of the past fiscal year and has not been given a place among the producing mines in this report, but it is probable that it will have a fair record as a producing mine during the ensuing fiscal year. The main working shaft is 225 feet in depth; another shaft has been sunk 1,200 feet distant, which is intended for the second opening into the mine, and the drift entry between the two shafts is being driven as rapidly as possible. Six men are employed in development work. The mine has a 25-horsepower hoisting engine, the cars being hoisted from below on a cage. This mine is the only one in New Mexico operated through a vertical shaft. A fan will soon be installed for the purpose of ventilating the mine.

The mine is in one of the coal seams of the lower Coal Measures, probably the Crown Point coal seam. Thickness of coal, 4½ feet; dip of seam, about 3 per cent.

RECORD OF INSPECTION.

June 13, 1905.—Inspected Canavan mine. Found only one opening into the mine; instructed that work upon entry between main working shaft and air shaft, 1,200 feet distant, be prosecuted with all possible diligence, that a second opening may be made into the workings of the mine. It would take fully as long to furnish a second opening by sinking a shaft through solid rock at any point 150 feet distant from present working shaft as it will to drive the remaining 1,000 feet through coal from end of present entry to air shaft which has already been sunk to intersection of the coal seam. Served written notice upon the owner in regard to driving said entry for second opening with all possible diligence; copy of notice transmitted to the honorable Commissioner of the General Land Office at Washington, D. C.

UNION MINE.

[Union Coal Company, owner and operator.]

The Union mine is located in N. ½ of NE. ¼ of sec. 28, T. 15 N., R. 18 W., New Mexico principal base and meridian. It lies about 2 miles south of the town of Gallup, N. Mex. Three seams of workable thickness are known to exist in the company's ground. The seams are known as the Aztec, Black Diamond, and Thatcher veins. The depths from the surface at which these coal seams occur are, respectively, as follows: Thirty-five feet, 320 feet, and 360 feet. These seams outcrop in the canyon half a mile distant from the Union mine. The thickness of these beds are as follows: Aztec, 5 feet 4 inches; Black Diamond, 6 feet 6 inches, and Thatcher, 5 feet 8 inches. The Union company is operating upon the Black Diamond seam.

The mine is opened by slope, double entry, room and pillar system; ventilated by furnace; depth of slope, 915 feet; dip of coal seam, 17°. A 20-horsepower steam engine supplies the power for haulage from mine to tipple. The hoisting plant upon this mine was burned twice during the years 1901 and 1902, and operation of the mine was suspended until November 10, 1904. Between the dates November 10, 1904, and the end of the fiscal year, June 30, 1905, the mine was operated one hundred and fifty-seven days. Average number of men employed underground, 10; average number of men employed outside, 3; nationality of employees, American, Scotch, German, and Italian, all of whom could write, as shown by signatures to vouchers; total output of mine for fiscal year, 4,715 tons; slack coal used at mine for operating; net product, 4,715 tons; estimated value of net product at the mine, at $1.60 per ton, $7,544. The product of this mine has heretofore been hauled to the town of Gallup, whence it was shipped, via the Santa Fe Pacific Railroad, to consumers in Arizona and California. The management of the mine informs the mine inspector that arrangements have been completed for the building of a tramroad, costing $5,400, to connect with the Santa Fe Pacific Railroad in the vicinity of the old Crescent mine. With this improved facility and economy in transportation the Union mine will soon become a prominent factor in the coal production of McKinley County.

CASNA MINE.

[Andrea Casna, owner.]

The Casna mine is located in SW. ¼ of sec. 18, T. 15 N., R. 18 E., New Mexico principal base and meridian. It lies about 2 miles west of the town of Gallup, N. Mex. Kind of coal, lignite; one vein worked; thickness of coal seam, 4 feet; system of working, slope, room and pillar; ventilation by two air shafts; dip of coal seam, 2 per cent; length of slope, 1,100 feet; mule haulage. The mine has not been worked during the past winter.

BLACK DIAMOND MINE.

[Sharp & Fishburn, owners.]

The Black Diamond mine, formerly known as the Stewart mine, is located in the SE. ¼ of sec. 16, T. 15 N., R. 18 W., New Mexico principal base and meridian. It is located about 1½ miles from the Santa Fe Pacific Railroad station at Gallup, N. Mex., to which point the coal is hauled in wagons for shipment by rail. The mine is supposed to be on the Black Diamond coal seam. The coal is bituminous; thickness of seam, 5 feet; dip of seam, about 18°; system of working, slope, single entry, room and pillar; depth of slope, about 700 feet; natural ventilation by air shaft; steam hoist. This mine was operated for a short time in the early part of the fiscal year, but no report of operation has been furnished the mine inspector.

RIO ARRIBA COUNTY.

Rio Arriba County ranks fifth among the coal-producing counties in New Mexico, the production for the past fiscal year amounting to 41,523 tons, an increase over the production of the preceding year of 323 tons. While it is not probable that Rio Arriba County will ever be a close competitor for first place among the coal-producing counties of the Territory, yet it is certain, from the favorable location of its mines and the territory dependent upon them for the nearest accessible fuel supply, as well as the excellent coking qualities of the coal, that the production of the Rio Arriba County mines will be greatly increased in the near future, and also that new mines will be opened to supply the increased demand, which is now easy to foresee.

MONERO MINE.

[Rio Arriba Coal Company, owner and operator.]

The Monero mine is located in the NE. ¼ of sec. 18, T. 31 N., R. 1 E., New Mexico principal base and meridian, at Monero station, on the Durango branch of the Denver and Rio Grande Railroad, and between Durango and Antonito, Colo., but south of the State line and in the Territory of New Mexico. The mine is owned and operated by the Rio Arriba Coal Company.

The coal is an extra quality of bituminous coal, an especially good coal for both steam and domestic use, and makes excellent coke.

There are three workable veins in this coal field, of the following thicknesses, respectively: Four feet, 3 feet 4 inches, and 3 feet. The Monero mine is opened by slope, cross entries, and rooms. A slope has been driven 1,600 feet in depth upon the 4-foot seam and another slope 900 feet in depth upon the 3-foot 4-inch seam. The coal seams dip at an angle of 7 per cent toward the west. The power for hoisting is supplied by a 45-horsepower double-cylinder steam engine. Average number of men employed underground, 30; average number of men employed outside, 5; average number of boys employed underground, 3. Spanish-speaking natives of New Mexico are employed outside. Various nationalities employed underground—Americans, Irish, Germans, and Italians—90 per cent of whom could write, as shown by signatures to vouchers. The mine was operated 275 days during the fiscal year ending June 30, 1905. Total output for fiscal year, 31,000 tons; used in operating mine, 1,800 tons; net product, 30,000 tons; estimated value of product at mine, $45,000. The coal is nearly all sold to the Denver and Rio Grande Railroad for operating purposes. A small proportion of the product is marketed in the San Luis Valley, Colorado, and near-by camps, and some is sold in Santa Fe, N. Mex. The demand for coal in this immediate vicinity is greater than the production, but insufficient development of the mine and inadequate equipment restricts production.

RECORD OF INSPECTION.

September 10, 1904.—Inspected Monero mine. Air intake, 4,200 cubic feet per minute; air very poorly distributed; 20 men employed underground; mine in fair condition except as to distribution of ventilating current; instructed that ventilation be improved.

January 12, 1905.—Inspected Monero mine. Air intake, 9,900 cubic feet per minute; distribution of air improved since last inspection; 30 men employed underground; mine in good condition.

May 17, 1905.—Inspected Monero mine. Air intake, 7,290 cubic feet per minute; air well distributed; 28 men employed underground. Followed air through No. 1 to old No. 2 mine, through No. 2 mine out of old slope in No. 2 mine, which route constituted second opening for Monero mine; found unsafe places along air course, which I instructed be made safe for exit in case of emergency; mine otherwise in fair condition.

M'BROOM MINE.

[Rio Arriba Coal Company, owner and operator.]

The McBroom mine is located in the SE. $\frac{1}{4}$ of sec. 17, T. 31 N., R. 1 E., New Mexico principal base and meridian. The mine is situated about $1\frac{1}{2}$ miles from Monero station, on the Denver and Rio Grande Railroad, to which place the coal is hauled upon wagons and thence shipped by rail. The mine is worked by contractors, who mine the coal, haul it by wagon, and deliver it on the cars at Monero station for a stipulated price per ton. The coal of this mine is a good grade of bituminous coal, similar in every way to the product of the Monero mine, and described above. Thickness of coal seam, 4 feet; system of working, slope, single entry, room and pillar; length of main slope, 450 feet, ventilated by furnace shaft; dip of coal seam, 8°; mule haulage is used out of mine to tipple. Average number of men employed inside, 6; average number of men employed outside, 2; number of days mine worked during fiscal year

ending June 30, 1905, two hundred and sixty-five; number of tons of coal produced during fiscal year, 6,000; estimated value of product at mine, $6,000. The product is disposed of to the Denver and Rio Grande Railroad.

KUTZ MINE.

[George W. Kutz, owner and operator.]

The Kutz mine is located in NW. ¼ sec. 17, T. 31 N., R. 1 E., New Mexico principal base and meridian. It lies within one-half mile of Monero Station, on the Denver and Rio Grande Railroad, which transports all the coal from the mine to market. There are two known veins upon this property, the upper vein being 4 feet and the lower vein 3 feet 10 inches in thickness; dip of coal seams, 11 per cent; system of working, slopes, single entry, room and pillar, ventilated by furnace and air shaft. Depth of slope on upper coal seam, 500 feet; on lower coal seam, 700 feet. A 30-horsepower steam engine is used for haulage from mine to tipple. Average number of men employed underground, 15; average number of men employed outside, 3. Nationality of employees: Americans, Irish, Italians, and Mexicans, all of whom could write, as indicated by signatures to vouchers. Number of days mine was operated during fiscal year ending June 30, 1905, 181; total output, 5,523 tons; slack for fuel at mine, no account of which was kept; net product, 5,523 tons; estimated value at mine, $8,836.

The coal is sold to the Denver and Rio Grande Railroad, and in the San Luis Valley, Colorado, and Santa Fe, N. Mex. No. 2 slope, which is driven on the upper coal seam, was operated during the past fiscal year.

RECORD OF INSPECTION.

May 18, 1905.—Inspected Kutz mine. Air intake gave no register on anemometer, but air good at working faces; only 2 men employed underground to-day; found that the second opening to connect with workings in upper coal seam has not been completed; instructed that second opening must be completed.

SANTA FE COUNTY.

Santa Fe County ranks third among the coal-producing counties of New Mexico. The Coal Measures of this county merit and have attracted more attention than the coal fields of any other county in New Mexico. This is due not to the extraordinary extent of the coal beds, but to the peculiar geological conditions which there prevail. In the immediate vicinity of the town of Madrid are found strange and anomalous coal beds.

The bituminous and anthracite coals occur in juxtaposition in the same coal seam. The younger coal seams of the series are sometimes highly metamorphosed and anthracited, while the older veins have not passed the bituminous stage. In some instances a part of a coal vein may be anthracite, while a few hundred yards distant, laterally, the same vein may produce bituminous coal. The geological peculiarities of these Coal Measures are due to the action of intrusive sheets of andesite, the near approach of which in places furnished the agency for local metamorphism of the Coal Measures, thus producing the anthracite coal here found.

The coal produced from the Cerrillos bituminous (Cook & White) mine has until recently been a noncoking coal, but it was found that at a depth of about 2,600 feet in the slope the coal had changed to a very good coking coal. The change would indicate the nearer approach to one of the intrusive sheets, and the possible change from bituminous to anthracite coal as closer approach is made to the intrusion.

The principal mines of the district are the Cerrillos bituminous formerly known as the " Cook & White," and the Cerrillos anthracite, formerly called the " Lucas mine."

The mines just named demand and receive constant attention from the mine inspector. The necessity arises from the fact that these are among the few dangerously gaseous mines in the Territory.

The coal production of Santa Fe County has been on the decline for the past three years. A fire in the Cerrillos bituminous mine three years ago caused suspension of work below the fourth cross entry, at a depth of 2,300 feet, and although the fire was long since extinguished, and the locality in which the fire occurred is now hundreds of feet under water, there was no attempt on the part of the operators to reopen the lower levels until a few months ago, hence no new ground was developed in this mine for two years, and the product of the mine has consequently been much restricted. In the Cerrillos anthracite mine development was discontinued because a poor grade of coal was encountered in the bottom of the slope. It is more than probable that the inferiority of grade of coal was due to the nearer approach of the intrusive sheet, as similar occurrences of disintegrated coal where found and passed through in other parts of the mine, and it is very likely that further development would have passed through the zone of poor coal and into another good field of anthracite. The net product of these mines during the fiscal year ending June 30, 1904, was 57,944 tons, and during the year ending June 30, 1905, 62,033 tons, a net increase of 4,089 tons. But this increase does not indicate a continuation of increase or production in these mines. The Cerrillos anthracite A 28, or Lucas mine, is nearing the end of its days of productiveness; even now the entry and slope pillars are being drawn and it is only a matter of months until this mine will cease to be numbered among the producing coal mines of New Mexico. For the past fifteen years it has furnished anthracite coal for the local demands of New Mexico, as well as shipping considerable quantities to the Pacific coast.

There are several small areas of anthracite coal showing outcrops in the vicinity of Madrid, but whether these smaller areas and smaller seams can be operated profitably in competition with the anthracite coals of Colorado and of Pennsylvania remains to be demonstrated. In any event the output from these lesser seams would be comparatively small.

The mine inspector has good foundation for the belief that there is a good seam of anthracite coal to the northeast of Madrid. Of course the area that might be found undisturbed by igneous dikes, laccoliths, or intrusive sheets is problematical.

Development in the lower workings of the Cerrillos bituminous, or Cook & White mine, has shown satisfactory results, and this mine may be counted upon as a producer for some years to come.

The town of Madrid has a population of about 500, the majority of the men being employed in and about the mines, while many of the boys find employment as drivers, trappers, and slate pickers at the anthracite breaker of the Cerrillos anthracite mine. The town has a public hall, excellent school, two churches, and a general merchantile establishment owned by the company. The miners have comfortable dwellings, rented from the company, and here it may be remarked that rents in this coal-mining town, as well as in every coal-mining camp in the Territory, are cheaper than in any of the other towns and cities of the Territory.

The managers of this company have for years pursued a very generous and enlightened policy in regard to the education of the children of employees of the company. The public school fund of the county being insufficient to pay salaries to teachers for the full scholastic term, the company provides for the deficiency and in many ways aids in the education of the children.

CERRILLOS BITUMINOUS NO. 27 MINE.

The Cerrillos bituminous mine is located in T. 14 N., R. 7 E., New Mexico principal base and meridian. It is situated at Madrid, a town at the end of a spur of the Atchison, Topeka and Santa Fe Railroad, 3 miles in length, which connects with the main line at Waldo station. The mine is operated by the Colorado Fuel and Iron Company, and is opened by triple slopes, 2,911 feet in depth, driven at an angle of 15°, the direction of dip of coal seam. Main entries or levels are driven from the main slope at intervals of 600 feet, and these entries are intersected by planes driven to the raise and on the dip, parallel to the main slope and at intervals of 600 feet as the entries depart from the main slope. Thus the field is blocked into 600-foot squares. Back entries are driven parallel to main entry, and cross entries connect the main and back entries, maintaining a thorough system of ventilation. From the dip and raised planes rooms are turned 300 feet in length by 20 feet in width, a pillar of 30 feet being carried between rooms. This pillar is taken out in retreating after the rooms from planes have made junction at the middle between two planes. Compressed-air engines hoist the product from the dip planes, or it is lowered by gravity to the entry below as soon as connection is made with the rooms above, whichever may be found most convenient and economical. The mine is ventilated by two exhaust fans, 14 and 16 feet, respectively, located upon fan shafts connecting with and exhausting from the extremities of the lateral openings from the main slope.

The main slope is the intake, the air splitting at or near the bottom. The mines of this camp are among the few mines of New Mexico in which CH_4 is found in sufficient quantity to be very dangerous, but so efficient have been the methods of ventilation employed under the present management, and so carefully are they guarded that these mines are as safe as if no gas were present, and they will so continue to be as long as the same vigilance is exercised as now.

Wolf's miner's safety lamps are used. The lamps are locked in the lamp house by the magnetic device attached to the lamp and can not be unlocked without the use of a powerful magnet; hence the lamps are not liable to be opened by the miners, as such a magnet as is used

weighs about 20 pounds. These lamps give great satisfaction to those using them and are an invaluable safeguard in gaseous mines.

The Cerrillos bituminous mine produces an excellent quality of bituminous coal; thickness of vein, 3½ to 4 feet. Average number of men employed underground, 66; average number of men employed outside, 16; average number of boys employed underground, 5; number of days mine was operated during fiscal year, 287; total output for fiscal year, 42,098 tons; amount used in operating mine, 4,747 tons; net product, 37,351 tons; estimated value of product of mine—$1.78+ per ton—$97,000. Net decrease of tonnage below previous year, 1,898 tons.

The outside employees are Mexican and Americans. Percentages of each nationality who could write, as indicated by signatures to vouchers, 95. The underground employees are Italians, English, Scotch, Mexican, Austrian, German, American, and negroes. The percentages who could write, as indicated by signatures—negroes, 90; all others, 95.

The demand for this coal far exceeds the supply, the coal being of superior quality, a limited working area restricting the production. The product is sold in New Mexico, Colorado, Texas, Arizona, and California, and is shipped via the Atchison, Topeka and Santa Fe Railroad. There is little probability that the product of this mine will be increased during the coming year, but after the damage done by the fire of February, 1902, shall have been repaired and the lower entries reopened an increased production may be looked for. Recent judicious development has recovered some good bodies of coal which had been practically abandoned heretofore and which will have a good effect toward maintaining the production until the lower workings are reopened.

RECORD OF INSPECTION.

September 21, 1904.—Inspected Cerrillos bituminous mine. Air intake 43,200 cubic feet per minute; air well distributed to working faces; 80 men employed underground; mine in good condition.

October 24, 1904.—Inspected Cerrillos bituminous mine. Found operations temporarily suspended on account of washouts on railroad; no transportation facilities for product; fans running at regular speed and ventilation up to normal condition, preventing any accumulation of gas while mine is idle.

November 21, 1904.—Inspected Cerrillos bituminous mine. Investigated circumstances attending death of Frank Beya, killed on 6th instant in Cerrillos bituminous mine; cause of accident as given in detail in accident report found to be correct.

November 22, 1904.—Inspected Cerrillos bituminous mine. Air intake 46,000 cubic feet per minute; air well distributed to working faces; 92 men employed underground; mine in good condition.

January 6, 1905.—Inspected Cerrillos bituminous mine. Air intake 48,000 cubic feet per minute; air well distributed to working faces; 70 men employed underground; mine in good condition.

March 3, 1905.—Inspected Cerrillos bituminous mine. Air intake 47,600 cubic feet per minute; air well distributed to working faces; 58 men employed underground; mine in good condition. Investigated circumstances attending accidental death of Cameo Demonte on February 18, 1905. Found circumstances as stated in accident report to be correct.

April 14, 1905.—Inspected Cerrillos bituminous mine. Air intake 48,000 cubic feet per minute; air well distributed to working faces; 67 men employed underground; mine in good condition.

May 10, 1905.—Inspected Cerrillos bituminous mine. Air intake 51,000 cubic feet per minute; air well distributed to working faces; 52 men employed underground; mine in good condition.

June 27, 1905.—Inspected Cerrillos bituminous mine. Air intake 49,800 cubic feet per minute; air well distributed to working faces; 59 men employed underground; mine in good condition.

CERRILLOS ANTHRACITE MINE.

This mine, which is called by the operators the Cerrillos Anthracite "A" 28 mine, is located at the town of Madrid, N. Mex., in T. 14 N., R. 7 E., New Mexico principal base and meridian. The mine was formerly known as the Lucas mine. The mine is operated by the Colorado Fuel and Iron Company.

The coal seam is first-class anthracite, equal to the best Pennsylvania anthracite. Thickness of coal seam, 3 feet; average dip, 18 degrees; system of working, triple slope, double cross entries, room and pillar; present depth of slope, 2,450 feet; formerly 2,900 feet, but pillars have been drawn and lower 450 feet of workings abandoned on account of depreciated quality of coal encountered, caused by the nearness of lava sheet.

First-class anthracite has been found in diamond drill hole a mile beyond the face of bottom of slope, which it is highly probable would have been encountered if slope had been continued.

In operating this mine the field is blocked into 600-foot squares in the same manner and the coal extracted in the same manner as described in the foregoing article upon the Cerrillos bituminous mine.

Steam and compressed air are used at different points in operating. Three engines are used—one 30 horsepower and two 10 horsepower each.

The mine is ventilated by a double 6-foot Murphy exhaust fan, located upon the north side of the main slope, the air intake being through main slope, splitting near the bottom, the air from the north side of slope returning through an overcast cross slope to the return air way on the south side. The mine is equipped with a first-class hoisting plant consisting of one pair of Fraser & Chalmers hoisting engines, 100 horsepower, at the surface; two pairs Lidgerwood hoisting engines underground, 40 horsepower; one fan engine, 15 horsepower. Steam is used for the hoisting engine at the surface and fan engine and compressed air for the other engines. The breaker plant, where the coal is broken and assorted into various sizes—grate, egg, stove, nut, and pea—is one of the most complete to be found anywhere. The breaker machinery is run by a 40-horsepower steam engine, with an auxiliary pair of 20-horsepower Lidgerwood engines for hoisting purposes. The building is ten stories in height, the dimensions being 250 feet long, 60 feet wide, and 110 feet high, the top of the breaker being on a level with the mouth of the slope. Storage bins for each of the several sizes of coal are provided at the level of the railroad cars, which are loaded therefrom. These bins have a capacity of 75 tons each. Average number of men employed underground, 34; nationality of underground employees, Americans, Italians, Mexicans, Germans, Austrians, and negroes. Ninety per cent of the negroes and Mexicans could write, and 95 per cent of the other nationalities, as shown by signatures to vouchers. Average number of men employed outside, 16, 11 of whom are employed at the mine and 5 at the breaker; average number of boys employed outside, 10, 9 of whom are employed at the breaker; nationality of

outside employees, Americans, Mexicans, and negroes, of whom the same percentages could write as given above. Number of days mine was operated during fiscal year, 287.9; total output for fiscal year, 30,386 tons; amount used in operating mine, 5,704 tons; net product, 24,682 tons; estimated value of net product at mine, at an average of $3.76+ per ton, $93,000.00.

The coal is marketed in Kansas, Colorado, New Mexico, Texas, Arizona, and California. The product is shipped from the mine via the Atchison, Topeka and Santa Fe Railroad. The demand for this coal is far in excess of the supply, the output being restricted by limited capacity of the mine. The depth of the main slope was about 2,900 feet, but the slope pillars are now being drawn, and ere the ensuing fiscal year is ended the mine will be abandoned.

The Cerrillos anthracite mine is operated upon a coal bed overlying the Cerrillos bituminous seam, being separated by strata of sandstone of about 150 feet in thickness. On top of the Cerrillos anthracite coal and separated from it by sandstone strata, 30 or 40 feet in thickness, is found the cause of the metamorphism of this coal bed, viz, an intrusive sheet of andesite about 350 feet in thickness. On top of this intrusive sheet, and only separated by a light stratum of sandstone, another seam of anthracite coal is found, 4 feet 2 inches in thickness, which was operated in the Anthracite B No. 33 mine. The productive area proved to be comparatively small and the mine was depleted of available coal and abandoned during the past fiscal year, having been operated three years. The coal seam in this mine was cut by an intrusive sheet.

SYNOPSIS OF RULES IN FORCE AT CERRILLOS MINES.

The rules in force at the Cerrillos mines at Madrid, N. Mex., are the same as are generally in force at all coal mines.

Miners are compelled to keep their places safe and timbers are delivered to them at the working places.

Miners are only allowed to take 5 pounds of powder into the mine in one day.

All employees are forbidden to ride on the trips, either in or outside of the mines.

The usual rules of inspection by mine boss and fire boss are rigidly enforced.

Shot firers are on and all shots are fired after the mine quits operation for the day and all the men are out.

RECORD OF INSPECTION.

September 23, 1904.—Inspected Cerrillos anthracite mine. Air intake 4,800 cubic feet per minute; air well distributed to working faces; 36 men employed underground. While the volume of air entering the mine is above the minimum quantity required by the United States statute, yet it is apparent that the ventilating current is continually decreasing in volume, and as the mine vents some CH_4 a sudden blower might produce dangerous conditions, especially if the ventilating could not be quickly increased in volume. Instructed that cause of decrease in ventilating current be investigated and dangerous contingencies guarded against; mine otherwise in good condition.

January 7, 1905.—Inspected Cerrillos anthracite mine. Air intake 6,240 cubic feet per minute; air well distributed to working faces; 45 men employed underground; mine in good condition.

April 15, 1905.—Inspected Cerrillos anthracite mine. Air intake 9,800 cubic feet per minute; air well distributed to working faces; 32 men employed underground; mine in good condition.

June 28, 1905.—Inspected Cerrillos anthracite mine. Air intake 7,600 cubic feet per minute; air well distributed to working faces; 32 men employed underground; mine in good condition.

BLOCK COAL MINE.

[Owned and operated by the estate of Leonard Lewisohm.]

The Block coal mine is located in SW. ¼ of SE. ¼, SE. ¼ of SW. ¼, NE. ¼ of SW. ¼, NW. ¼ of SE. ¼, SE. ¼ of NW. ¼, and S. ½ of NE. ¼ of sec. 32, T. 13 N., R. 9 E., New Mexico principal base and meridian. The new slope is in the NE. ¼ of SW. ¼ of sec. 32, T. 13 N., R. 9 E. It is about 16 miles southeast from Madrid, N. Mex., by wagon road, and about 12 miles from San Pedro, the product of the mine being used at the Santa Fe Gold and Copper Company's metal mines at the latter-named placed, the coal being hauled in wagons. Operation of the metal mines has been suspended during the past year; hence there was no market for the product of the Block coal mine and it was not operated, the mine being too far from railroad transportation to place coal in other markets for sale. Kind of coal, bituminous; thickness of coal seam, 2½ feet; dip of seam, 11 per cent; system of working, slope, single entry, room and pillar; depth of slope, 600 feet; ventilation by air shaft; haulage by horse whim.

It is reported that the metal mines of the Santa Fe Gold and Copper Company will soon resume operations, and in that event the Block coal mine will become a producer again as the product will be in demand at the metal mines.

SANDOVAL COUNTY.

Sandoval County, one of the youngest of the counties of New Mexico, embraces within its limits a coal area of considerable importance, part of which coal area was heretofore credited to Santa Fe County, from which latter-named county it was cut by the Territorial legislature of 1903 to form the new county.

UNA DEL GATO COAL FIELD.

The Una del Gato, Coyote, and Pinavititos coal fields have recently attracted much attention among local coal operators. While the three named are used to designate the three localities within the area of the coal field, yet the outcrop is continuous and identical throughout all three coal areas as divided by imaginary lines and under different names.

This coal field is probably a portion of the same coal areas and of contemporaneous age with the Madrid or Cerrillos mines, but interrupted by the uplift of the Cerrillos Mountains on the northeast.

As the anthracite coal of the Cerrillos field is due to the rapid metamorphism produced by igneous intrusions, it is far more than probable, considering the igneous surroundings of the Una del Gato field, that anthracite coal will be found in this field by development in localities nearer to the uplift of the Cerrillos and San Pedro ranges.

The outcrop of the Una del Gato Coal Measures, showing four workable coal seams 3½ to 4½ feet in thickness, extends a distance of about 9 miles from northwest to southeast diagonally across T. 13 N., R. 6 E., from section 6 to section 33, inclusive, with an almost continuous outcrop along an irregular line between the sections named. Two of the coal seams have from one to three dirt bands along the outcrop, but upon the Hagan mine, the only place the field has been developed to any great extent, the dirt band pinched out at a depth of 260 feet.

About 12,000 acres, or more than half of T. 13 N., R. 6 E., has been already filed upon as coal lands, and about 2,000 acres of it has been purchased from the Government at $20 per acre.

HAGAN MINE.

The Hagan mine is located in NW. ¼ of sec. 33, T. 13 N., R. 6 E., New Mexico principal base and meridian. It is owned by E. B. Field, of Santa Fe, N. Mex., and operated by the New Mexico Fuel and Iron Company, Santa Fe, N. Mex.

A branch line is being built to connect the mines with the Albuquerque Eastern Railroad; a survey has also been made for a branch line 12 miles in length to connect the mines with the Atchison, Topeka and Santa Fe Railroad at a point near Algodones.

Four coal seams have been shown in the Hagan mine, ranging from 3½ to 5 feet in thickness. These coal veins are known by the following names, in order of their occurrence in depth from the surface, viz, Andrews, Hopewell, McCance, and Kennedy.

Only one vein is being developed at present—the Hopewell. Thickness of vein, 4 feet 6 inches; depth of slope, No. 1, 1,020 feet; No. 2, 701 feet; dip of vein, 15°; system of working, triple entry, slope, double-cross entries, room and pillar.

The coal is a good quality of bituminous coal, especially desirable for domestic purposes, as it is a free-burning coal, giving a white ash, and without clinker. It is quite probable that there will be an extraordinary demand for it, and that this coal will be substituted for many other coals now used in the Southwest for domestic purposes as soon as railroad transportation facilities are completed, so that it may be placed in the market. The mine was operated 300 days during the fiscal year upon development work only. Number of men employed underground, 10; number of men employed outside, 6; gross output for fiscal year, 1,500 tons; amount used in operating mine, 100 tons; net product, 1,400 tons; estimated value of net product at mine, at $1.25 per ton, $1,750. No effort has been made toward a large production thus far, as lack of railroad connection prohibits the marketing of the coal, but construction work has already commenced upon a branch of the Albuquerque Eastern Railroad to connect with the Hagan mine.

The prospects for the future of this mine are very bright by reason of it being closer than competing mines to both home markets and also closer to foreign markets of the Southwestern and Western States and Territories, which furnish the market for the great majority of the coal mined in New Mexico.

RECORD OF INSPECTION.

September 26, 1904.—Inspected Hagan mine. Air intake erratic and baffling, but air good at working faces; 12 men employed underground; mine in good condition.

March 17, 1905.—Inspected Hagan mine, No. 2 slope. Air intake, 4,320 cubic feet per minute; air well distributed; 6 men employed underground; found that the coal in the upper workings of the mine is exceedingly dry, light, and inflammable, every condition being favorable for a dust explosion; gave explicit instructions that great care be exercised in operating said upper workings to avoid dust explosion; mine otherwise in good condition.

COYOTE MINE.

The Coyote mine is located in what is called the "Coyote" field, being about halfway between the Hagan mines and the Pinavititos coal field. The same series of coal seams as found in the Hagan mine extend into and through the Coyote field.

The Coyote mine is owned and operated by the Sloan Coal Company. This property has been opened by a slope about 200 feet in depth, which, at the time of the mine inspector's visit, was in a fault. The coal seam above the fault is about 7 feet in thickness, but has two bands of shale in it, reducing the thickness of the coal materially. It is not at all certain that this opening is upon the same coal seam as the Hagan mine, and it is quite probable that one or more of the other three coal seams in this property would develop a better and cleaner seam coal. The mine has not been operated during the past fiscal year.

SAN JUAN COUNTY.

There is little doubt that the coal measures developed and operated in McKinley County, N. Mex., extend with little interruption across San Juan County from south to north to the Colorado line.

The coal seams of this county, where developed, are larger than has been found in any other section of New Mexico, ranging from 4 feet to 40 feet in thickness, most of it of good marketable coal. This vast and valuable area of coal has attracted much attention during the past two years from capitalists and coal operators. Recently a company has been organized and incorporated with the avowed intention of building a railroad from Durango, Colo., via Clifton, Ariz., to connect with the Southern Pacific Railroad at some point between Lordsburg, N. Mex., and Benson, Ariz., or at either of the last-named points. The Denver and Rio Grande Railroad during the past fiscal year has built 60 miles of broad-gauge railroad from Durango, Colo., to Farmington, N. Mex., and it is generally believed that the agents of the Denver and Rio Grande Railroad and of the Southern Pacific Railroad are now acquiring control of the traffic from the coal mines in operation near Durango, Colo., and farther south in New Mexico, with the intention of placing the coal and coke in the markets of Arizona, Mexico, Texas, southern New Mexico, and the Pacific coast.

With these two strong competitors in the field to develop this great transportation industry, it is more than probable that these great coal fields will be extensively developed in the near future.

THE LA PLATA MINE.

The La Plata mine is located in the SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$ of sec. 15, T. 32 N., R. 13 W., New Mexico principal base and meridian. It is situated about $1\frac{1}{2}$ miles from Pendleton, San Juan County, N. Mex., the nearest post-office. The mine is owned by Thomas O'Brien, Dawson, N. Mex. This property, opened during the past fiscal year, takes precedence of any coal mine in San Juan County for extent of development. Two slopes have been sunk upon the property, 300 feet and 800 feet, respectively. The seam dips at an angle of about 10°; 20 men were employed upon the property and development work was prose-

cuted for one hundred and fifty days. The work was all done by day labor, the wages paid ranging from $2 per day for common laborers to $3.50 per day for skilled labor. Two thousand five hundred tons of coal was extracted in development work, but none marketed by reason of lack of transportation facilities. This mine adjoins the Thomas mine upon the mammoth coal seam which is doubtless a continuation of the great Carboneria seam exposed near Durango, Colo., and known in the geology of that section as the upper coal measures of the Mesa Verde formation. This coal seam in the vicinity of Pendleton, N. Mex., has an aggregate thickness of 60 feet, but shows several dirt bands and layers of bony coal unfit for market. In the La Plata mine the 700-foot slope was sunk at the bed rock of the coal series. A vertical cross section of 15 feet above the sandstone bedding shows the following order of strata: Commencing at the bottom there is 22 inches of coal; next above, 6 inches of fire clay and shale; then above, 4 feet 4 inches of coal; a parting of shale 2 to 4 inches above, and then 2 feet 6 inches of coal; again a thin parting of shale, and above it 5 feet of coal, and above the last-named coal seam there is shown 10 feet of coal sandstones and coal. The coal of this great seam shows better in adjoining claims; that is, the coal appears to have fewer bands of shale and bone and the percentage of workable coal appears to be greater.

The coal is semicoking in character, and while a fairly good grade of coke can be obtained in the laboratory the coal will not make a good coke in the oven upon a commercial scale. A small coke oven was built at this mine, but the results were not highly satisfactory. Further tests are being made at the United States Government coal-testing plant at St. Louis. A steam hoisting plant of about 50-horsepower capacity was installed at this mine. Operation of the property is at present suspended.

RECORD OF INSPECTION.

March 9, 1905.—Inspected La Plata mine; air intake gave no register on anemometer, but air good at working face; found second opening to surface as required by United States statute; found trip being hauled from mine without a drag, thus menacing the safety of miners employed below; instructed that a drag be used on all trips; found mine in good condition.

STEVENS MINE.

The Stevens mine is located in sec. 4, T. 29 N., R. 15 W., New Mexico principal base and meridian. It lies about 2½ miles from the town of Fruitland, on the San Juan River. The mine is owned by Mrs. A. S. Young. It is operated under lease by Thomas Evans, Fruitland, N. Mex.

The nearest railroad point is Durango, Colo., 70 miles distant by wagon road. Kind of coal, bituminous; thickness of coal seam, 12 feet—10 feet of which is clean, marketable coal, lying horizontal; system of working, drift entry, room and pillar; extent of workings, main drift, 350 feet; right entry, 150 feet; left entry, 150 feet; average number of men employed underground, 5; number of days mine was operated during fiscal year, 130; total output, 1,750 tons; estimated value at mine, $2,187.50. The product is sold in the towns of Fruitland and Farmington and to farmers of the San Juan Valley.

BRIMHALL MINE.

The Brimhall mine adjoins the Stevens mine, and is upon the same coal seam, similar conditions existing as to size and character of coal, method of working, and disposition of production.

This is a new mine, and the main entry had just attained a depth of 100 feet when the mine inspector visited the mine. No data as to production obtained. The property was sold during the past fiscal year by the former owner, Clayton Brimhall.

KIRTLAND MINE.

The Kirtland mine is located about 2 miles west of the Stevens and Brimhall mines, and upon the same coal seam. This mine, formerly operated by W. L. Hendrickson, has been relocated, and no data as to production was obtainable. System of working, drift entry, room and pillar; main drift entry, 300 feet.

THOMAS MINE.

[W. H. and Albert C. Thomas, owners and operators.]

The Thomas mine is located in sec. 21, T. 32 N., R. 13 W., New Mexico principal base and meridian. The nearest railroad point is La Boca, on the Denver and Rio Grande Railroad, about 45 miles distant. This coal seam is the thickest coal vein in the Territory. At the Thomas mine it is about 60 feet in thickness, with 20 feet of good marketable coal developed. The vein at this point is faulted, and the upthrow shows a transverse section of the seam, the dip of which is about 25°. The development consists of a drift entry driven across the dip; length of drift, about 350 feet; natural ventilation. Number of days mine was operated, 150; number of men employed underground, 2; output for fiscal year, 500 tons; estimated value at mine, at $1.50 per ton, $750. The product is sold to the farmers of the La Plata Valley and vicinity and at Aztec, N. Mex. Value of improvements during fiscal year, $250.

RECORD OF INSPECTION.

March 8, 1905.—Inspected Thomas mine. Operation temporarily suspended; instructed that if arrangement be made to operate the property a second opening into the mine be constructed without delay.

ENTERPRISE MINE.

[George W. Jones, owner and operator.]

The Enterprise mine is located in SW. ¼ SE. ¼ sec. 21, T. 32 N., R. 13 W., New Mexico principal base and meridian. It is located upon the same mammoth seam as the Thomas mine and the Morgan mine. Development consists of slope entry, 250 feet in length, and a second opening by incline shaft on coal seam, intersecting the drift at the end and at a depth of about 40 feet vertically from the surface; dip of coal seam, 29°; number of men employed inside and outside, 1; seam, 29 degrees; number of men employed inside and outside, 1; number of days mine was operated during fiscal year, 15; total output of coal, 30 tons; net output, 30 tons; estimated value at mine, at $1.50 per ton, $45. The product was sold to the farmers of La Plata and San Juan Valley, New Mexico.

MORGAN MINE.

In the Morgan mine, about 1 mile distant from the Thomas mine, the same great coal seam, 40 feet in thickness, is being exploited, but operation is suspended at present. This mine is worked intermittently, as coal may be in demand by the farmers.

SAN MIGUEL COUNTY.

San Miguel County has not yet made a record as a coal-producing county, for the reason that no coal has yet been marketed, but considerable development work is being done in the coal fields lying within 25 or 30 miles of the eastern boundary line of Santa Fe County. These coal areas have been credited with the Santa Fe County Coal Measures in the aggregate of coal areas of New Mexico.

PECOS COAL MINE.

The Pecos coal mine is located in E. $\frac{1}{2}$ of sec. 5, T. 16 N., R. 12 E., New Mexico principal base and meridian. It lies in the northwestern part of San Miguel County, N. Mex. The ownership of the mine has been a source of litigation for some time past. A good wagon road leads from the mine to Glorietta station, on the Atchison, Topeka and Santa Fe Railroad, a distance of about 10 miles. The coal is a good quality of bituminous, and makes excellent coke. Thickness of coal seam, 3 feet; dip of coal seam, 5 degrees; system of working, slope, single-cross entry, room, and pillar; depth of main slope, 273 feet; cross entry, 173 feet. Natural ventilation. This mine has not been operated during the past fiscal year. While all of the other Coal Measures of New Mexico belong to the Cretaceous period, the Coal Measures of the Pecos occur in limestones, presumably of the Carboniferous period.

EL PORVENIR MINE.

The El Porvenir mine is located in secs. 12 and 13, T. 17 N., R. 14 E., New Mexico principle base and meridian, on the Las Vegas grant and about 8 miles from Las Vegas, the nearest railroad station. Prospecting with a diamond drill has shown encouraging results. No coal has yet been marketed. About $4,000 has been invested in machinery and development work.

SOCORRO COUNTY.

Socorro County ranks sixth among the coal-producing counties of New Mexico. The coal operators of this county have been handicapped by having to haul their product 12 miles by horse teams to the nearest railroad point, San Antonio, on the Atchison, Topeka and Santa Fe Railroad. A branch railroad is now being built to connect the mines at Carthage with the main line of the Atchison, Topeka and Santa Fe Railroad at San Antonio, N. Mex. The road is being built by a company organized for the purpose. Completion of this branch road has been delayed and hindered during all of the past fiscal year by reason of litigation over the right of way.

The only coal mines operated in Socorro County are situated in the immediate vicinity of Carthage. The product of these mines is a most desirable quality of fuel for either steam producing or for domestic purposes. Eighteen small coal seams, ranging from 1 inch to 8 inches in thickness, have been discovered by borings in the Carthage field. One vein of workable thickness, 5 feet, has been developed and operated. Upon this seam are located the Hilton, Government, Bernal, McIntyre, and Emerson mines.

The Hilton mine is the only mine reporting any marketed production during the past fiscal year. Development of the mines and production of coal has been obstructed by lack of railroad connections for transportation of the product to market.

HILTON MINE.

The Hilton mine is located in NE. $\frac{1}{4}$ sec. 15, T. 5 S., R. 2 E., New Mexico principal base and meridian. It is situated about 12 miles southeast from San Antonio on the Atchison, Topeka and Santa Fe Railroad, to which place the product is hauled by wagon, thence shipped by rail to markets in old Mexico, Texas, Arizona, and New Mexico. The property is owned and operated by Powell Stackhouse, jr., trustee, El Paso, Tex.

This mine is located upon the Carthage coal seam, which in this immediate locality is $4\frac{1}{2}$ feet in thickness; class of coal, bituminous, coking; average dip of coal seam, 15°; system of working, slope, single entry, room and pillar; depth of main slope, 700 feet. The mine is ventilated by a 12-foot exhaust fan. A 50-horsepower steam engine furnishes the haulage power to transport the coal from the partings in the mine to the tipple, and a 16-horsepower engine runs the fan. Number of men employed outside, 1; number of men employed underground, 30; nationality of employees, Spanish-speaking natives predominating, with a few Scotch, Irish, and Americans. All employees could read and write, as shown by signatures to vouchers. Number of days mine worksd during fiscal year, one hundred and eighty-seven; total output for fiscal year, 8,631 tons; number of tons used in operating mine, 150; net product of mine for fiscal year, 8,481 tons; estimated value of net product at mine, $12,646.50.

During the past fiscal year the coal from this mine was hauled in wagons 12 miles to the nearest railroad point at San Antonio, N. Mex., and shipped via Atchison, Topeka and Santa Fe Railroad and connecting lines to El Paso, Tex., old Mexico, and Arizona.

BERNAL MINE.

This is a new mine opened during the preceding year. It lies between the Hilton and Government mines, and is located in the west half of SE. $\frac{1}{4}$ sec. 15, T. 5 S., R. 2 E., New Mexico principal base and meridian. It is owned and operated by Powell Stackhouse, jr., trustee, and is under the same management as the Hilton mine, cited above.

The coal produced is a good quality of bituminous, coking coal, and very desirable for either steaming or domestic purposes. Thickness of seam, 6 feet; depth of slope, 555 feet; dip of seam, 12°; system of working, single entry, room and pillar; system of ventilation, natural ventilation through two air shafts. A 20-horsepower

steam hoist is used to transport cars from the mine partings to the tipple. This mine was not operated during the past fiscal year.

GOVERNMENT MINE.

[Powell Stackhouse, jr., trustee, owner and operator.]

The Government mine is located in SW. ¼ of NW. ¼ and NW. ¼ of SW. ¼ sec. 15, T. 5 S., R. 2 E., New Mexico principal base and meridian. It inherits the name of the Government mine from the fact that Government troops camped upon the Rio Grande worked the mine thirty-five or forty years ago. It is now owned by Powell Stackhouse, trustee. The coal is similar in character to the coal of the Emerson and Carthage mines. Thickness of coal seam, 6 feet; dip, 7°; depth of slope, 800 feet. A 50-horsepower steam engine is used for haulage. Air compressor to run pump and other necessary uses will soon be installed. The mine is ventilated by two air shafts; system of working, single entry, room and pillar. This mine was not operated during the past fiscal year.

EMERSON MINE.

[E. O. Emerson, J. L. Emerson, E. O. Emerson, jr., and C. B. Allaire, owners.]

The Emerson mine is located in S. ½ of sec. 9 and N. ½ of sec. 16, T. 5 S., R. 2 E., New Mexico principal base and meridian. It is operated by Emerson and Allaire.

The mine is situated about 10 miles southeast of San Antonio station on the Atchison, Topeka and Santa Fe Railroad, to which point the coal is hauled in wagons and shipped thence by rail to market at El Paso, Tex. The coal is a good quality of bituminous, very good for steam and domestic purposes, and makes an excellent quality of coke. Thickness of coal seam, 6 feet; dip of vein, 15°; system of working, slope, single entry, room and pillar; depth of main slope, 1,300 feet; ventilation, natural through slope and two air shafts. The power for operation is furnished by a 60-horsepower steam engine, Hendrie & Bolthoff, link motion. An air compressor of ample efficiency is used to operate the pump. The mine was not operated during the past year; about a year ago a squeeze in the mine closed the main slope. It is probable that the mine will be reopened when the branch railroad is built and more economical method of transportation of the product available than at present by wagon haul of 12 miles to railroad.

M'INTYRE MINE.

The McIntyre mine is located in SW. ¼ of sec. 10, T. 5 S., R. 2 E., New Mexico principal base and meridian. The workings are upon the same seam as all of the Carthage mines hereinabove mentioned, and located in the vicinity of the old Carthage coal camp. It is a new mine situated between the old Carthage Nos. 1 and 2. The property is owned and operated by the Southern Fuel Company.

The system of working is by slope, back slope, double entry, room and pillar. The main slope has attained a depth of 1,000 feet. Only development work has been prosecuted during the fiscal year and no report of shipments has been made to this office. A 50-horse-

power steam engine is used for haulage purposes from the partings to the tipple. Thickness of coal seam, 5 feet; dip of seam, 25°. Average number of men employed underground, 17; average number of men employed outside, 8; number of days mine worked during fiscal year, 250.

Table showing name of mine, method of working, power used, efficiency in horsepower and ventilation.

Name of mine.	Method of working.	Power used.	Efficiency of machinery in horsepower.	Ventilation.
Colfax County:				
Dawson mines	Drift, double entry, room and pillar.	Electricity	750	Air shaft.
		Steam	260	Exhaust fans
Van Houten mines	do	Electricity and steam.	600	Do.
Dutchman mine	do	do	550	Do.
Brilliant mine	do	Mules		Furnace; fan later
Sugarite and Climax mines.	Drift, single entry, room and pillar.	Horses		Furnace.
Llewellyn	do			Air shaft.
Honeyfield mine	do	Horses		Natural.
Sperry mine	do			Do.
Lincoln County:				
Capitan mine	Drift, double entry, room and pillar.	Steam	100	Exhaust fan.
Old Abe mine	Slope, single entry, room and pillar.	Horse whim		Air shaft.
McKinley County:				
Catalpa mine	Slope, double entry, room and pillar.	Steam	290	Exhaust fan.
Gallup mine	do		800	Do.
Weaver mine	Drift, double entry, rib and room.	Steam for tipple and fan.	110	Do.
Heaton mine	do	Steam	100	Do.
Thatcher mine	Slope, double entry, room and pillar.	do	274	Do.
Otero mine	do	do	123	Do.
W. A. Clark mine	do	Electricity	650	Do.
Rocky Cliff	Drift, single entry, room and pillar.	Horses		Furnace.
Canavan mine	Shaft, single entry, room and pillar.	Steam	50	Fan.
Union mine	Slope, double entry, room and pillar.	do	20	Do.
Black Diamond	Drift, single entry, room and pillar.	do	20	Air shaft.
Casna mine	Slope, single entry, room and pillar.	Horses		Do.
Rio Arriba County:				
Monero mine	do	Steam	75	Natural.
Kutz mine	do	do	30	Furnace.
McBroom mine	do	Horses		Natural.
Santa Fe County:				
Cerrillos bituminous mine.	Slope and 2 slopes, double cross entries, room and pillar.	Steam and compressed air.	350	Exhaust fan.
Cerrillos anthracite	do	do	200	Do.
Block coal mine	Slope, single entry, room and pillar.	Horse whim		Air shaft.
Sandoval County:				
Hagan mine	Slope and 2 back slopes, double cross entries, room and pillar.	Steam	30	Do.
Sloan mine	Slope, single entry, room and pillar.	do	50	Natural.
Socorro County:				
Hilton mine	do	do	50	Fan.
Government	do	do	50	Air shaft.
Bernal	do	do	25	Do.
Emerson	do	do	75	Do.
McIntyre	Slope, double entry, room and pillar.	do	50	Fan.
Total efficiency in horsepower.			5,682	

List of fatal accidents in coal mines of New Mexico during fiscal year ended June 30, 1905.

Date of accident.	Name of victim.	Name of mine.	Cause of accident.
1904.			
September 29	John Reckor	Dawson No. 2, Dawson, N. Mex.	Caught between mine cars.
November 6	Frank Beya	Cerrillos bituminous No. 27	Fall of rock.
1905.			
January 17	Phillipi Luigi	No. 1 mine, Coalora, N. Mex	Do.
February 4	Cosme Zarlingo	No. 1 mine, Dawson, N. Mex	Do.
February 18	Joe Douero	Cerrillos bituminous No. 27	Do.

RECORD OF FATAL ACCIDENTS.

COLFAX COUNTY.

DAWSON NO. 2 MINE.

September 29, 1904.—John Reckor, age 37 years, a miner, nativity, Austrian, was killed in mine No. 2, at Dawson, N. Mex., on the 29th day of September, 1904. The motor was hauling a trip of empty cars along the entry, and when the cars were passing John Reckor's room he jumped in between and tried to uncouple them, and in so doing got caught between the cars.

DAWSON NO. 1 MINE.

February 4, 1905.—Cosme Zarlingo, age 24 years, a miner, nativity, Italian, was killed in No. 1 mine, at Dawson, N. Mex., on the 4th day of February, 1905, by fall of rock from roof. He was married, his family living in the old country. He had a sister residing in Dawson, N. Mex.

LINCOLN COUNTY.

NO. 1 MINE.

January 17, 1905.—Phillipi Luigi, age 21 years, a miner, nativity, Austrian, was killed in sixth left entry, dip room No. 1, of No. 1 mine, at Coalora, N. Mex., on the 17th day of January, 1905. Deceased and John Zucca were digging coal in No. 1 dip room on sixth level entry. During the morning these men struck a slip running across the face of their room. The coal at this point encountered an upthrow, which was the cause of the slip. These men mined out the coal from under the slip in the face to the end of the track, about 8 feet. They decided to load a car of coal at 1 o'clock and then timber. While they were finishing the car there was a small fall of rock at the face. Zucca told his partner that the roof was coming, but the other man (Luigi) said it was only the coal. At this time the slip gave way, and the falling rock caught Luigi, killing him instantly.

Report of coroner's jury.—We, the undersigned jurors, sitting upon the body of Phillipi Luigi, find that the deceased came to his death in mine No. 1, January 17, at Coalora, N. Mex.

We also find the deceased came to his death by an unavoidable accident, and we also find that no one can be blamed for the accident.

THOMAS GALE,
ISAAC FREDERICK,
CHAS. GUNTON,
HUGHIE DICK,
T. C. HILL,
JOE FALCONIO,
Jury.

W. M. EIDSON,
Justice of the Peace and ex officio Coroner.

SANTA FE COUNTY.

CERRILLOS BITUMINOUS NO. 27 MINE.

November 6, 1904.—Frank Beya; age, 19 years; nativity, German; a miner, was killed in Cerrillos Bituminous mine No. 27 on the 6th day of November, 1904. The deceased and his partner were instructed to take down some loose rock. They put a shot in one side of it, but only part of it fell. The deceased then began to drill a hole in the other side of the rock and went under the rock, where he was instructed not to go, when the rock fell and killed him. He had a half brother living in Madrid, his parents living in Germany.

February 18, 1905.—Joe Douero, age 32 years, a miner, nativity, Italian, was killed in Cerrillos bituminous No. 27 mine on the 18th day of February, 1905. Indications showed that deceased was in the act of putting up a prop when a rock weighing about a ton fell and caught him. When found his body was doubled up. He was not dead when first found, but died very soon after.

There was reported to me, as United States mine inspector, the foregoing detailed five accidents during the fiscal year ending June 30, 1905. A summary of the cause to which the fatalities were attributed is as follows: By fall of rock, 4; trying to uncouple car from trip of empty cars, while in motion, to take car to his room, 1; total, 5.

Lives lost to tons of coal mined, by counties.

County.	Tons of coal mined.	Lives lost.	Number of tons of coal mined for each life lost.
Colfax	896,301	2	448,150.5
Lincoln	46,329	1	46,329.0
McKinley	461,780	.....	.....
Rio Arriba	42,523	.....	.....
Santa Fe	72,484	2	36,242.0
San Juan	1,500	.....	.....
Sandoval	4,750	.....	.....
Socorro	8,631	.....	.....
Total for Territory	1,534,298	5	306,859.6

Total number of tons of coal mined during fiscal year ending June 30, 1905, 1,534,298; total number of lives lost during fiscal year, 5; average number of tons of coal mined for each life lost, 306,859.6, as against 1 life lost for each 109,202 tons of coal mined during preceding fiscal year.

Total number of men and boys employed at the mines, 2,132; percentage of fatalities through accidents at mines, 0.234, or 2.34 for each 1,000 persons employed.

New mines opened during fiscal year ended June 30, 1905.

Name of mine.	Location.	Name of owner.
Brilliant	Colfax County	Raton Coal and Coke Company.
Sperry	do	Elmer Sperry
Heaton	McKinley County	American Fuel Company.
Canavan	do	Stephen Canavan.
La Plata	San Juan County	T. H. O Brien.
McIntyre	Socorro County	Southern Fuel Company.

Mines upon which operation was suspended during fiscal year ended June 30, 1905.

Name of mine.	Location.	Cause of suspension.
Capitan No. 4	Lincoln County	Worked out and abandoned.
Black Diamond	McKinley County	Inefficient appliances.
Thatcher	do	Lack of market.
Casna	do	Do.
Gallup	do	Fire in mine.
Anthracite B 33	Santa Fe County	Worked out and abandoned.
La Plata	San Juan County	Lack of transportation facilities.
Emerson	Socorro County	Main opening squeezed.
Bernal	do	Lack of transportation facilities.
Government	do	Do.

Production of coke in New Mexico for the fiscal year ended June 30, 1905.

At the ovens of the—	Number of tons.	Estimated value.[a]	Value of product.[b]
Dawson Fuel Company	49,075	$3.00	$147,225
Raton Coal and Coke Company	27,662	3.00	82,986
Total	76,737		230,211

[a] Per ton of 2,000 pounds. [b] At the ovens.

The production of coke for the preceding fiscal year was 35,800 tons, the figures above showing a gain in production of 40,937 tons. Construction work is now in progress upon 200 additional coke ovens at Dawson, N. Mex., and it is anticipated that 300 more will be built within the next two years or as fast as the work can be done. This will give a total oven capacity at Dawson, including the 125 ovens in operation last year, of 625 ovens.

At Blossburg construction of 80 ovens, in addition to 84 now in use, has been commenced, and it is anticipated that the capacity of the coking plant will be increased to at least 300 ovens. The prospects for a largely increased production of coke from the Dawson Fuel Company's mines and from the Raton Coal and Coke Company's mines are very favorable.

Analyses of New Mexico coals and coke.

M'KINLEY COUNTY.

[Coal from Catalpa mine, near Gallup, N. Mex., owned and operated by Colorado Fuel and Iron Company.]

	Per cent.
Moisture	6.66
Volatile matter	40.13
Fixed carbon	45.56
Ash	7.65
Total	100.00

[Coal from Weaver mine at Gibson, N. Mex., owned and operated by Colorado Fuel and Iron Company.]

No. 3 seam:	Per cent.	No. 5 seam:	Per cent.
Moisture	9.13	Moisture	8.23
Volatile matter	38.43	Volatile matter	40.61
Fixed carbon	49.45	Fixed carbon	45.17
Ash	2.99	Ash	5.99
Total	100.00	Total	100.00

The Gallup mine is being operated upon the same coal seam as the Weaver mine, viz, No. 3 and No. 5, and analysis of coal is similar to that given above for those seams.

COLFAX COUNTY.

[Coal and coke produced from Raton Coal and Coke Company's mines at Raton, Van Houten, and Blossburg, N. Mex.]

	Per cent.
Coal from Raton Coal and Coke Company:	
Water	0.75
Volatile matter	34.40
Fixed carbon	56.93
Mineral ash	7.92
Total	100.00
Coke	64.85
Character of coke, very strong and tough.	
Color of ash, very light ocher.	
Character of ash, soft and light.	
Sulphur (as sulphide)	.016
Sulphur (as sulphate)	.022
Phosphorus	.014
Specific gravity	1.291
One cubic foot weights	88.690
Mineral ash:	
Silica	44.16
Alumina	39.28
Oxide of iron	2.95
Mineral ash—Continued.	
Calcium oxide	7.41
Magnesium oxide	3.27
Sulphate of calcium	.41
Alkalies and loss	2.52
Total	100.00
Willow mine:	
Moisture	3.61
Volatile matter	33.55
Fixed carbon	51.73
Sulphur	.63
Ash	8.48
Total	100.00
Dutchman mine:	
Moisture	1.28
Volatile matter	33.90
Fixed carbon	56.68
Sulphur	.65
Ash	7.49
Total	100.00

[Coal from Dawson Fuel Company's mines at Dawson, N. Mex.]

	Per cent.
Water	1.32
Volatile matter	37.47
Fixed carbon	52.50
Sulphur	.21
Ash	8.50
Total	100.00

SANTA FE COUNTY.

[Coal from the Cerrillos bituminous mine of the Colorado Fuel and Iron Company at Madrid, N. Mex.]

	Per cent.
Cerrillos bituminous mine:	
Water	2.00
Volatile matter	39.00
Fixed carbon	33.76
Mineral ash	5.24
Total	100.00
Coke	59.00
Character of coke, strong and tough.	
Color of ash, light yellowish gray.	
Character of ash, soft and light.	
Cerrillos bituminous mine—C't'd.	Per cent.
Sulphur (as sulphide)	0.010
Sulphur (as sulphate)	.022
Phosphorus	.006
Specific gravity	1.410
One cubic foot weights	88.135
Mineral ash:	
Silica	26.93
Alumina	32.41
Oxide of iron	3.96
Calcium oxide	24.68
Alkalies and loss	1.49
Total	100.00

As no analysis of recent date was obtainable the above was copied from report of former mine inspector.

LINCOLN COUNTY.

[Coal from New Mexico Fuel Company's mines at Capitan, N. Mex.]

	Per cent.
Water	0.75
Volatile matter	41.25
Fixed carbon	47.00
Ash	11.00
Total	100.00
Sulphur	.735

[Coke from New Mexico Fuel Company's mines.]

	Per cent.
Water	1.450
Volatile matter	3.900
Fixed carbon	76.825
Ash	17.825
Total	100.000
Sulphur	.611

RIO ARRIBA COUNTY.

[Coals from the two seams of the Amargo Coal Measures, operated by the Rio Arriba Company at Monero, N. Mex.]

Upper seam:	Per cent.	Lower seam:	Per cent.
Water	2.27	Water	2.59
Volatile hydrocarbons	38.67	Volatile hydrocarbon	39.35
Fixed carbon	52.08	Fixed carbon	53.06
Ash	6.98	Ash	5.00
Total	100.00	Total	100.00

These coals thus prove to be regular bituminous coals, and do not appear to be lignites in any respect.—Prof. J. F. Kemp.

SOCORRO COUNTY.

[Coal from Carthage mine No. 3, Carthage Coal Company.]

	Per cent.
Moisture	Trace.
Volatile matter	37.30
Fixed carbon	54.85
Ash	7.00
Sulphur	.85
Total	100.00

[Coal from Emerson mine, owned and operated by Emerson and Allaire.]

	Per cent.
Moisture	1.00
Volatile matter	39.40
Fixed carbon	53.20
Ash	6.40
Total	100.00

SAN JUAN COUNTY.

[Coal from the Thomas mine, on La Plata River, near Pendleton, N. Mex.—Approximate.]

	Per cent.
Moisture	2.70
Volatile matter	36.50
Fixed carbon	53.80
Ash	7.00
Total	100.00

[Coal from the La Plata mine, on La Plata River, near Pendleton, N. Mex.—Approximate.]

	Per cent.
Moisture	1.80
Volatile matter	37.80
Fixed carbon	50.70
Ash	9.70
Total	100.00

[Other samples from the La Plata coal mine.]

	Per cent.
No. 1. Taken from 22 inches at bottom of seam:	
Moisture	1.40
Volatile matter	40.39
Fixed carbon	50.60
Ash	7.61
	100.00
No. 2. Taken from 4 feet 4 inches above No. 1, with 6 inches of fire clay between No. 1 and No. 2:	
Moisture	1.32
Volatile matter	40.63
Fixed carbon	49.18
Ash	8.87
	100.00
No. 3. Taken from 2 feet 6 inches above No. 2, with thin band of shale between No. 2 and No. 3:	
Moisture	1.95
Volatile matter	37.54
Fixed carbon	52.15
Ash	8.36
	100.00
No. 4. Taken from 5 feet above No. 3 and separated from No. 3 by thin band of shale:	
Moisture	1.75
Volatile matter	38.44
Fixed carbon	48.77
Ash	11.04
	100.00

The La Plata mine and Thomas mine adjoin on the same coal seam and the coals are apparently identical. It is probable that the sample from the Thomas mine was the more carefully selected. Coal from both of the above-named mines gave good coking results in the crucible in the laboratory, but failed to give satisfactory results under the most favorable conditions in the oven. The coking property did not seem to be constant throughout the sample and the semi-crystalline coke structure was lacking. The resulting coke, however, was of great strength and excellent cellular structure, tending to the belief that if a method of coking it thoroughly were found the resulting coke would be of an extraordinary good quality and value for smelting purposes.

Table showing statistics of the coal-mining industry in the Territory of New Mexico for the fiscal year ended June 30, 1905.

Name of mine.	Number of men employed.			Number of boys employed.			Days mine operated.	Total output (tons of 2,000 pounds).	Amount used in operating mine (tons of 2,000 pounds).
	Underground.	Outside.	Total.	Underground.	Outside.	Total.			
Colfax County.									
Raton Coal and Coke Co.'s mines:									
Dutchman mine	104	10	114	1	1	2	280	107,158	2,304
Willow mines Nos. 1, 2, and 3	279	20	299	5	4	9	261	354,734	2,600
Dawson Fuel Co.'s mines Nos. 1, 2, 3, and 4	450	200	650	15	3	18	274	423,037	11,310
Raton Fuel Co.'s mines:									
Climax mine	4	------	4	----	----	----	308	4,451	----------
Sugarite mine	4	------	4	----	----	----	308	3,221	----------
Llewellyn mine	2	------	2	1	----	1	250	2,000	----------
Honeyfield mine	3	------	3	----	----	----	200	1,200	----------
Sperry mine	1	------	1	----	----	----	150	500	----------
Total	847	230	1,077	22	8	30	--------	896,301	16,214
Lincoln County.									
New Mexico Fuel Co.'s mines:									
Capitan mines Nos. 1 and 4	60	21	81	2	2	4	254	45,439	3,189
Old Abe Coal mine	3	1	4	----	----	----	210	890	----------
Total	63	22	85	2	2	4	--------	46,329	3,189
McKinley County.									
American Fuel Co.'s mines:									
Weaver mine	265	57	322	7	----	7	195	280,816	24,459
Heaton mine	30	7	37	1	----	1	69	7,540	533
Caledonian Coal Co.'s mine:									
Otero mine	30	18	48	----	----	----	182	27,546	1,700
Clark Coal Co.'s mine	128	39	167	12	16	28	254	125,160	4,200
Rocky Cliff mine	20	2	22	----	----	----	200	16,000	----------
Union mine	10	3	13	----	----	----	157	4,715	(a)
Total	483	126	609	20	16	36	--------	461,777	30,892
Rio Arriba County.									
Kutz mine	15	3	18	----	----	----	181	5,523	(a)
Rio Arriba Coal Co.'s mines:									
Monero mine	30	5	35	3	----	3	275	31,000	1,000
McBroom mine	6	2	8	----	----	----	265	6,000	----------
Total	51	10	61	3	----	3	--------	42,523	1,000
Santa Fe County.									
Colorado Fuel and Iron Co.'s mines:									
Cerrillos anthracite "28" mine	34	16	50	----	10	10	287	30,386	5,704
Cerrillos bituminous "27" mine	66	16	82	5	1	6	287	42,098	4,747
Total	100	32	132	5	11	16	--------	72,484	10,451
Sandoval County.									
Hagan mine	10	6	16	----	----	----	300	1,500	100
San Juan County.									
Stevens mine	5	------	5	----	----	----	130	1,750	----------
Thomas mine	2	------	2	----	----	----	150	500	----------
La Plata mine	8	12	20	----	----	----	150	2,500	200
Total	15	12	27	----	----	----	--------	4,750	200
Socorro County.									
Hilton mine	30	1	31	----	----	----	187	8,631	150
McIntyre mine	17	8	25	----	----	----	(b)	(b)	(b)
Total	47	9	56	----	----	----	--------	8,631	150

[a] Slack used.

[b] Development work only.

Table showing statistics of the coal-mining industry, etc.—Continued.

Name of mine.	Net product (tons of 2,000 pounds).	Approximate price.[a]	Estimated value.[b]	Increase (tons of 2,000 pounds).[c]	Decrease (tons of 2,000 pounds).[d]	Character and class of coal mined and shipped.
Colfax County.						
Raton Coal and Coke Co.'s mines:						
Dutchman mine	104,854	$1.25	$131,067.50	69,140	.....	Bituminous, coking; screened, mine run.
Willow mines, Nos. 1, 2, and 3.	352,134	1.25	440,167.50	11,679	.....	Do.
Dawson Fuel Co.'s mines, Nos. 1, 2, 3, and 4.	411,727	1.25	514,658.75	.....	21,349	Do.
Raton Fuel Co.'s mines:						
Climax mine	4,451	1.50	6,676.50	.....	.....	Do.
Sugarite mine	3,221	1.50	4,831.50	.....	.....	Do.
Llewellyn mine	2,000	1.00	2,000.00	.....	.....	Do.
Honeyfield mine	1,200	1.00	1,200.00	200	.....	Do.
Sperry mine	500	1.00	500.00	500	.....	Do.
Total	880,087	.....	1,101,101.75	[e] 58,820	.....	
Lincoln County.						
New Mexico Fuel Co.'s mines:						
Capitan mines, Nos. 1 and 4.	42,250	2.47	104,656.10	.....	48,745	Bituminous, coking; screened, mine run.
Old Abe coal mine	890	3.00	2,670.00	.....	610	Do.
Total	43,140	.....	107,326.10	.....	49,355	
McKinley County.						
American Fuel Co.'s mines:						
Weaver mine	256,357	1.37	351,722.00	.....	63,240	Lignite, noncoking; screened, mine run.
Heaton mine	7,010	1.30	9,127.00	7,010	.....	Do.
Caledonian Coal Co.'s mine:						
Otero mine	25,846	1.50	38,769.00	.....	208	Do.
Clark Coal Co.'s mine	120,960	1.50	181.482.00	.....	5,040	Do.
Rocky Cliff mine	16,000	1.35	21,600.00	.....	2,000	Do.
Union mine	4,715	1.60	7,544.00	4,715	.....	Do.
Total	430,888	.....	610,244.00	.....	[e] 93,679	
Rio Arriba County.						
Kutz mine	5,523	1.60	8,836.80	.....	6,477	Bituminous, coking; screened, mine run.
Rio Arriba Coal Co.'s mines:						
Monero mine	30,000	1.50	45,000.00	4,800	.....	Do.
McBroom mine	6,000	1.00	6,000.00	2,000	.....	Do.
Total	41,523	.....	59,836.80	323	.....	
Santa Fe County.						
Colorado Fuel and Iron Co.'s mines:						
Cerrillos anthracite "28" mine.	24,682	3.76	93,000.00	10,279	.....	Anthracite, various sizes.
Cerrillos bituminous "27" mine.	37,351	2.59	97,000.00	.....	1,898	Bituminous, coking; screened, mine run.
Total	62,033	.....	190,000.00	[e] 4,089	.....	

[a] Per ton of 2,000 pounds.
[b] Of net product at the mine for fiscal year.
[c] Of net product of individual mine over preceding year.
[d] Of net product of individual mine below preceding fiscal year.
[e] The apparent discrepancy of totals of net increase and decrease is due to omission of mines which suspended operation during the past fiscal year, and do not appear on the above table, or to new mines included herein which did not appear on last year's table; but the figures at the foot of net increase and net decrease columns show the actual comparative total increase or decrease in net product for each county as compared with last year, without reference to addition of figures in column above those footings.

Table showing statistics of the coal-mining industry, etc.—Continued.

Name of mine.	Net product (tons of 2,000 pounds).	Approximate price.[a]	Estimated value.[b]	Increase (tons of 2,000 pounds).[c]	Decrease (tons of 2,000 pounds).[d]	Character and class of coal mined and shipped.
Sandoval County.						
Hagan mine	1,400	1.25	1,750.00	630	.....	Semibituminous, white-ash, noncoking.
San Juan County.						
Stevens mine	1,750	$1.25	$2,187.50	690	.....	Semibituminous, semi-coking.
Thomas mine	500	1.50	750.00	100	.....	Do.
La Plata mine	2,300	.....	(*e*)	2,300	.....	Do.
Total	4,550	.....	2,937.50	2,710	.....	
Socorro County.						
Hilton mine	8,481	1.50	12,646.50	481	.....	Bituminous, coking; mine run.
McIntyre mine	(*f*)	(*f*)	(*f*)	(*f*)	(*f*)	Do.
Total	8,481	.....	12,646.50	.....	*g* 46,020	

SUMMARY OF TOTALS.

County.	Number of men employed.			Number of boys employed.			Days mine operated.	Total output (tons of 2,000 pounds).	Amount used in operating mines (tons of 2,000 pounds).
	Underground.	Outside.	Total.	Underground.	Outside.	Total.			
Colfax	847	230	1,077	22	8	30	.....	896,301	16,214
Lincoln	63	22	85	2	2	4	.....	46,329	3,189
McKinley	483	126	609	20	16	36	.....	461,780	30,892
Rio Arriba	51	10	61	3	.....	3	.....	42,523	1,000
Santa Fe	100	32	132	5	11	16	.....	72,484	10,451
Sandoval	10	6	16	.....	.....	.....	.....	1,500	100
San Juan	15	12	27	.....	.....	.....	.....	4,750	200
Socorro	47	9	56	.....	.....	.....	.....	8,631	150
Total for Territory	1,608	435	2,043	52	37	89	.....	1,534,298	62,196

County.	Net product (tons of 2,000 pounds).	Estimated value.[b]	Increase (tons of 2,000 pounds).[c]	Decrease (tons of 2,000 pounds).[d]	Percentage of net product.
Colfax	880,087	$1,101,101.75	58,820	.....	59.784
Lincoln	43,140	107,326.10	.....	49,355	2.930
McKinley	430,888	610,244.20	.....	93,679	29.270
Rio Arriba	41,523	59,836.80	323	.....	2.820
Santa Fe	62,033	190,000.00	4,089	.....	4.213
Sandoval	1,400	1,750.00	630	.....	.095
San Juan	4,550	2,937.50	2,710	.....	.309
Socorro	8,481	12,646.50	.....	46,020	.576
Total for Territory	1,472,102	2,086,042.85	.....	122,482	99.997

[a] Per ton of 2,000 pounds.
[b] Of net product at the mine for fiscal year.
[c] Of net product over preceding fiscal year.
[d] Of net product below preceding fiscal year.
[e] Not marketed.
[f] Development work only.

[g] The apparent discrepancy of totals of net increase and decrease is due to omission of mines which suspended operation during the past fiscal year, and do not appear on the above table, or to new mines included herein which did not appear on last year's table; but the figures at the foot of net increase and net decrease columns show the actual comparative total increase or decrease in net product for each county as compared with last year, without reference to addition of figures in column above those footings.

Directory of New Mexico coal mines and management in charge, 1905.

Name of mine.	Name of owner.	Name of manager or superintendent.	Post-office.
Colfax County:			
Van Houten mines, Nos. 1, 2, and 3.	St. Louis, Rocky Mountain and Pacific Co.	J. Van Houten, vice-president.	
		Allen French, general superintendent.	Raton, N. Mex.
Dutchman mine		James Cameron, superintendent.	Van Houten, N. Mex
Brilliant mine		Bert Lloyd, superintendent.	Blossburg, N. Mex.
		Joseph Curran, superintendent.	Do.
Climax mine	Raton Fuel Co	Frederick Pelouze, general manager.	Raton, N. Mex.
Sugarite mine			
Llewellyn mine	Thos. Llewellyn	Thos. Llewellyn, superintendent.	Do.
Sperry mine	Elmer Sperry	Scott & Polly, lessees.	Do.
Dawson mines	Dawson Railway and Coal Co.	W. P. Thompson, general manager.	Dawson, N. Mex.
		E. H. Weitzel, superintendent.	
Honeyfield mine	Honeyfield Bros	Honeyfield Bros	Raton, N. Mex.
Lincoln County:			
Capitan mines Nos. 1 and 2.	New Mexico Fuel Co.	W. P. Thompson, general manager.	Capitan, N. Mex.
		James McCartney, superintendent.	
Old Abe Coal mine.	Old Abe Mining Co	John Y. Hewitt, general manager.	Whiteoaks, N. Mex.
McKinley County:			
Gallup mine	American Fuel Co	Geo. W. Bowen, president	E. & C. Building, Denver, Colo.
Weaver mine		Thos. Pattison, division superintendent.	Gallup, N. Mex.
Catalpa mine			
Heaton mine		Hugh McGinn, superintendent.	Gibson, N. Mex.
Clark Coal Co	Clark Coal Co	W. L. Bretherton, agent	Clarkville, N. Mex.
Otero mine	Caledonian Coal Co	Alex. Bowie, general manager.	Gallup, N. Mex.
Thatcher mine		John Stewart, superintendent.	
Rocky Cliff mine	Stephen Canavan	Stephen Canavan, general manager.	Do.
Canavan mine			
Union mine	Union Coal Co	Wm. McVicker, general manager.	Do.
Black Diamond mine.	Black Diamond Coal Co.	John Sharp, general manager.	Do.
Casna mine	Andrea Casna	Andrea Casna	Do.
Rio Arriba County:			
Monero mines Nos. 1 and 2.	Rio Arriba Coal Co	J. H. Crist, general manager.	Monero, N. Mex.
McBroom mine			
Kutz mine	Geo. W. Kutz	Geo. W. Kutz, general manager.	Lumberton, N. Mex.
Santa Fe County:			
Cerrillos Bituminous.	Colorado Fuel and Iron Co.	John T. Kebler, president	Boston Building, Denver, Colo.
Cerrillos Anthracite.		James Lamb, superintendent.	Madrid, N. Mex.
Block Coal mine	Estate of Leonard Lewisohn.	Richard McCaffrey, agent	San Pedro. N. Mex.
Hagen mine	New Mexico Fuel and Iron Co.	W. S. Hopewell, president	Santa Fe, N. Mex.
		John W. Sullivan, general manager.	Hagan, N. Mex.
Socorro County:			
Hilton mine	Powell Stackhouse, jr., trustee.	John James, superintendent	San Antonio, N. Mex.
Government mine			
Bernal mine			
McIntyre mine	Southern Fuel Co	Robert E. Law, superintendent.	Do.
Emerson mine	Emerson & Allaire	C. B. Allaire, general manager.	Do.
San Juan County:			
Thomas mine	W. H. Thomas	W. H. Thomas, superintendent.	Pendleton, N. Mex.
Morgan mine	Geo. Morgan	Geo. Morgan, superintendent.	Do.
Stevens mine	E. S. Young	Thos. Evans, lessee and operator.	Fruitland, N. Mex
Jones mine	Geo. E. Jones	Geo. W. Jones, owner and operator.	Do.
La Plata mine	T. H. O'Brien	T. H. O'Brien, general manager.	Dawson, N. Mex.

RECOMMENDATIONS.

I have heretofore recommended and again urge that the United States law "for the protection of the lives of miners in the Territories" be amended to render all persons employed about a coal mine amenable to the law and liable to prosecution for the breach of its provisions. Again I would call attention to this matter. A large majority of the accidents in coal mines is due to gross negligence of the miner himself—negligence bred from constant familiarity with dangers incident to his vocation.

The operator is bound by the law to furnish every reasonable protection to his employee by maintaining proper conditions in and about the mine, and it is the duty of the mine inspector to see that these conditions are maintained, and if the law be not complied with to prosecute the operators and bring suit for injunction to suspend operation of the mine.

But the employee enjoys immunity from punishment for violation of the law. He may, by his gross carelessness or negligence endanger the life or person of his fellow-workmen or his own with impunity, the only recourse being the suspension of operation of his working place, and at most his discharge. In the intervals between the mine inspector's visits or between the daily inspections of the pit boss the delinquent miner may maintain a dangerous condition in his working place, but if restrained by the wholesome knowledge that he was amenable to the law for its violation it is hardly probable that he would act in such wanton manner as now when free of such restraint.

A majority of the fatal accidents which have occurred during my incumbency in the office were the result of carelessness on the part of the victims or their fellow-employees.

The principal object to which the mine inspector should give his attention is not the careful investigation of accidents which have occurred, but he should give his prime effort to the prevention of accidents. It is therefore not with a desire to enforce the law by prosecution of the derelict miner that I urge the recommendation for this amendment, but from the earnest belief that the restraining influence exerted by this proposed amendment of the law would cause the miner to be more careful, and thus eliminate a large percentage of the danger from his necessarily hazardous vocation.

The most imminent cause for apprehension of a great catastrophe occurring in the coal mines of New Mexico is the great danger of a dust explosion. These explosions in nongaseous mines are almost wholly due to shooting off the solid, causing blown-out shots, throwing coal dust into suspension in the air of the mine, the necessary heat as well being supplied by the unexpended energy of the blown-out shot, thus producing the resultant dust explosion. These dust explosions are becoming more frequent throughout the coal mines of the United States, and the physical characteristics of New Mexico coals as well as general dryness of the mines renders the danger of dust explosions a constant menace to the miners of the Territory.

Fortunately, thus far there has been but one dust explosion in the Territory accompanied with loss of life, March 29, 1901, when a dust explosion occurred in the Weaver mine, at Gallup, N. Mex. Three

men were in the mine, firing shots, at the time. The men were killed and the mine completely wrecked. Since then several small explosions have occurred in mines of this Territory, but, fortunately, no great force nor violence was developed, although the conditions were extremely favorable. In one instance the explosive wave traveled about 2,000 feet, forcing a considerable volume of smoke and dust out at the main entry of the mine.

The conditions at the Weaver mine apparently were not nearly so favorable for a violent explosion as some of these other instances.

These several circumstances have given the mine inspector cause for great anxiety and apprehension, and he hereinafter presents reasons for desiring the passage of a law prohibiting a miner from shooting off the solid or from shooting a hole which is any deeper than his mining or cutting.

The principal cause for the great increase of dust explosions is the abolition of the old system of the operators paying for lump or screened coal and deducting the slack from the miners' tonnage of mine-run coal which he produced. Under that rule the miner either undermined his coal or put in a cutting upon one side to the depth of his shot, thus creating a line of vantage or weakness for his shot to break to. The shot was not overburdened with the work to be done in removing the block of coal, as the face and one side or bottom of the block was loose; hence the miner did not find it necessary to overload his shot with powder. The incentive in this instance was the gain which accrued in the larger proportion of lump or screened coal which he was paid for and also the money saved by economizing on powder used. In addition to this there was a very important percentage of personal safety to the miner, which he does not appear to have taken into account; at least he does not consider it under present conditions in the coal mines of the country.

Under the present system of paying coal miners for mine-run coal they find it less laborious to do all the work with powder, and to this end drill holes in the solid faces of their entries or rooms and then overload the holes with powder. Nor would proper preparation of his face or heading be a hindrance or hardship to the miner. He would break much more coal with each shot where his coal was properly mined or cut. Thus he would get full value out of the powder used, as well as from labor expended upon drilling his hole, a large percentage of both of which are lost when shooting off the solid.

Again, the danger from falling top is lessened, because where coal is cut or undermined the timbers and props can be set up close to the face of the working without being knocked out each time a shot is fired, as happens when shooting off the solid, the force of the shot being projected out into the room or entry instead of toward the floor or side, as it would be if the coal were cut or undermined. Because the miner knocks out his props with these strong solid shots he is loath to set props up close to the face of his working and risks his life under dangerous top, from the falling of which a majority of fatal accidents in coal mines occur.

Thus it will be seen that the pernicious practice of shooting off the solid is responsible not only for a great many dust explosions and

consequent loss of life, but to this cause is also attributable much of the lax method of timbering and resulting accidents to the miners who dig coal in this manner.

Careless of the quality of coal they produce, the greed of gain by greater production is the incentive to drill holes that are both too deep and strong, and then to overload them with powder in an effort to make an impossible shot break where there is no chance to do so, and the result is a blown-out shot. The miner, in his eagerness for greater production of coal to his credit, loses sight of the danger which he creates and the risk of loss of life to himself and comrades in the mine.

Frequently when the mine inspector explains these dangers the miner replies that if he, the miner, is willing to take the risk he does not see how it is anybody else's business.

It is true there are a majority of sensible miners who realize the risk and endeavor to avoid the danger. But even one derelict miner endangers the lives of every person in the mine. His carelessness is criminal and may become criminal to the extent of being a murderer many times over by destroying the lives of his fellow-workmen. In such cases the criminal usually pays the penalty with his life, as he is among the victims of his criminal carelessness. If the criminal were the sole victim of his crime, even then the law should prevent such an act. How much more the need of such a law when the hundreds of miners killed and their bereaved and dependent families are considered!

To the credit of the mine operators of New Mexico, they have done everything in their power to aid the mine inspector in correcting this pernicious habit; many miners were discharged for disobeying the rules by shooting off the solid. But with the present great demand for miners the conscientious operator suffers by reason of decreased working force. Again, the restraint of a United States law would be far more effective than any rule established by a coal mining company, which is liable to be resented by the miner as an interference with his personal privileges.

I would therefore earnestly recommend that a law be passed prohibiting shooting off the solid or shooting any hole which is deeper than a mining which shall be made below the shot or a cutting which shall be made at a reasonable and proper distance upon one side of the shot; also prohibiting the use of excessive charges of powder. I would also recommend that an adequate penalty be prescribed for breach of the law.

As heretofore, I would again recommend that section 10 of the United States law governing the operation of coal mines in the Territories ("Sec. 10. That a metal speaking tube from the top to the bottom of the shaft or slope shall be provided in all cases, so that conversation may be carried on through the same") be amended by inserting after the word "tube," on the first line, the following words: "or a telephone line," leaving it optional with the operator to provide either method of communication.

In connection therewith the following opinion was rendered by the Assistant Attorney-General, Hon. John I. Hall, in June, 1893, and

ruling of the Department has been in accordance with the subjoined written opinion:

DEPARTMENT OF THE INTERIOR,
ASSSISTANT ATTORNEY-GENERAL'S OFFICE,
Washington, June 13, 1893.

SIR: I am in receipt of a letter, dated June 5, 1893, from Robert Forrester, inspector of mines for Utah, inclosing a communication dated May 23, 1893, addressed to him by Mr. F. A. Mitchell, relative to the act of Congress of March 3, 1891 (26 Stat. L., 1105), entitled "An act for the protection of the lives of miners." Said letter and communication you have submitted to me for an opinion upon the points referred to therein.

The tenth section of said act requires "that a metal speaking tube from the top to the bottom of the shaft or slope shall be provided in all cases, so that conversation may be carried on through the same;" and the questions upon which an opinion is asked are:

(1) Is this section applicable to slopes through which no one is allowed to travel while the trips are running?

(2) Can a telephone or electric-bell system be substituted for the metal speaking tube required by law?

It seems to me that the language of said section is so clear and unambiguous that there is no room for any other construction than that indicated by the plain letter of the law, which in specific terms provides that the means of communicating from the top to the bottom of the shaft or slope must be by conversation through "a metal speaking tube," even though other means of communication may be superior thereto, and this section would be equally applicable to all slopes, whether anyone is allowed to travel while the trips are running or not.

Very respectfully,

JOHN I. HALL,
Assistant Attorney-General.

THE FIRST ASSISTANT SECRETARY OF THE INTERIOR.

While the opinion of an eminent attorney can not be gainsaid by the mine inspector, yet it is clearly apparent that what was contemplated and intended by the makers of the law was the establishment of a good and sufficient means of communication between the bottom of the mine and the pit mouth.

As the telephone is a much better means of communication and less liable to be broken, as well as easier and more quickly repaired, it would seem wrong that the absurdity of excluding the better system of communication should be allowed to remain as the law and the ruling thereunder.

It is therefore respectfully recommended that the United States laws governing the operation of coal mines be amended in these particulars.

I would again recommend that a commission composed of experts in the art of explosives be appointed for the purpose of experimenting and producing a flameless explosive for use in coal mines, an explosive which could be manufactured at reasonable cost and which would be safe and convenient to use.

REPORT OF THE COMMISSIONER OF EDUCATION FOR PORTO RICO.

REPORT OF THE COMMISSIONER OF EDUCATION OF PORTO RICO.

The successive reports of the commissioners of education since the American occupation of Porto Rico have noted a constant improvement in the school facilities of the island. For some years the reports showed an increase in the number of schools from year to year, and with it an increase in the number of children participating in the benefits of education. The following figures display this growth:

	1901.	1902.	1903.	1904.	1905.
Number of schools	733	883	1,026	1,113	1,104
Average daily attendance, island	23,452.8	29,456.88	34,271.71	41,798.26	45,201.37

In the report of my predecessor for 1904 it was observed that this expansive movement had apparently come to an end, or had at least reached a point where the progress must be very much less than before. That his analysis was correct is shown by the following list of expenditures since the American occupation, together with the appropriations for the present year:

Comparative statement of expenditures, department of education, 1900–1901 to 1903–4, and appropriations 1904–5 and 1905–6.

	Expenditures.				Appropriations.	
	1900–1901.	1901–2.	1902–3.	1903–4.	1904–5.	1905–6.
Office expenses	$23,644.33	$27,943.51	$29,431.84	$40,134.79	$35,400.00	$36,730.00
Supervision	16,967.43	23,808.07	35,100.85	32,105.73	33,400.00	34,400.00
Equipment	40,824.17	40,044.28	40,635.84	30,615.06	36,200.00	26,000.00
Maintenance of:						
Common schools	301,047.12	349,202.57	401,582.92	416,124.31	408,800.00	422,000.00
High and graded schools	11,668.00	12,051.70	24,360.83	33,167.18	43,120.00	37,920.00
Industrial schools	.....	.....	16,450.80	28,557.90	41,765.00	31,880.00
Scholarships	.....	15,000.00	14,864.64	18,564.86	20,460.00	20,460.00
Total	394,151.05	468,050.13	562,427.72	599,269.83	619,145.00	609,390.00

A comparison of the figures for the years 1903–4 and 1904–5 shows at a glance the opportunities open for expansion of our school system in the year to which this report refers. It shows the possibility of larger expenditures for the special schools, high and industrial, and practically stationary expenditures for the common schools.

COMMON SCHOOLS.

The common schools of the island are of two classes—rural and graded. In the former a single teacher directs the studies of a group of children, and the number of schools and teachers is identical. The

graded schools established in our cities and towns contemplate a course of instruction extending through eight years, preparing pupils for the high school and normal school. In the nomenclature of the school administration of Porto Rico the term "school" and the term "class" are identical. Except in so far as the pupils of graded schools may enjoy the privilege of special teachers and the inspection of a principal who is not a teacher, the number of schools and the number of teachers is identical. In respect to what has been done for rural and urban population this fact becomes significant. The schools in operation during the past year as compared with the year before were as follows:

	Rural schools.		Graded schools.		Common schools.	
	1903–4.	1904–5.	1903–4.	1904–5.	1903–4.	1904–5.
First term	549	531	477	478	1,026	1,009
Second term	548	531	475	488	1,023	1,019
Third term	543	539	475	485	1,018	1,024
Average	546.67	533.67	475.67	483.67	1,022.33	1,017.33

It thus appears that the number of common schools decreased slightly—not a very encouraging sign where the educational needs are so great and so keenly felt. Under these circumstances it was the earnest effort of the department to secure, if possible, better results from each school than had been obtained in the preceding year. Great attention was given at the outset of the year to the matters of enrollment and attendance. Schools were strained to their utmost capacity; superintendents were urged to omit no effort to bring into the schools the children for whom they were maintained, and the teachers were urged to impress upon their pupils the necessity for regular attendance upon school. How successful these efforts were is shown in the figures for the average daily attendance, the ultimate test of the efficiency of the school system.

	1903–4.	1904–5.
First term	37,415.58	40,221.70
Second term	39,189.32	43,345.52
Third term	39,146.37	41,546.26
Year	39,928.35	[a] 42,989.27

[a] Rural schools, 22,778.45; graded schools, 20,210.82.

There is much encouragement in these figures. The increase is notable. With a decrease in the number of schools there was an increase of 3,061 pupils, or an increase of nearly 8 per cent in the effectiveness of school work. There seems to be, moreover, indications of a more favorable relation between the total enrollment and the average attendance. If the total enrollment is reported unduly high as compared with the attendance, and is correctly so reported, it indicates a very shifting school population. Frequent changes in the roll book lead to an unfavorable attendance record; first, because the children are less attentive to their school duties, and, second, because when children leave school frequently they are often carried on the rolls some time after they cease attendance, and thus the enrollment

is fictitiously increased. On the other hand, when the ratio between the average attendance and the total enrollment falls it may indicate on the one hand a greater stability in the enrollment and on the other a greater regularity in the pursuit of school work by those actually enrolled. Both of these results, which are rarely separate, are encouraging signs of a better appreciation of the advantages of education among the people, as well as of the seriousness with which children are led to perform their daily duties.

HIGH SCHOOLS.

During the past year there have been in operation three high schools, those at San Juan, Ponce, and Mayaguez, the high and graded school of Fajardo having been without any high school classes. The high school departments of the three schools had an average attendance throughout the year of 106 pupils, as contrasted with 78 pupils in the preceding year. The high schools are organized as combined high and graded schools, the principal being principal and generally a teacher in the high school and at the same time principal of a group of graded schools. The appropriations of the legislature being made in bulk for the two schools, while the statistics of membership in the grades and in the high school department are separated, it sometimes seems as if secondary education was unduly costly. Having pointed out that the number of pupils is comparatively small, it becomes more plainly our duty to make such analysis of the expenditure of the schools as will put in as clear a light as possible the actual cost of maintaining the high school department.

The legislative appropriations for the salaries in high and graded schools in the cities of San Juan, Ponce, and Mayaguez were $34,070. The actual cost of conducting the high school instruction can be figured on the basis of ascribing to it one-half the salary of the principal, all the salaries of the teachers devoting their time exclusively to the high school department, and a share of the salaries of teachers whose time is divided between the high school and the grades proportional to the amount of work done in each. A careful computation on this basis shows that the high school departments cost $11,856, while the grades cost $18,580.

It is, moreover, to be noted that of the $11,856 spent in secondary education $7,180 is attributable to the school at San Juan, which has been organized on a much more generous plan than the other schools. Although it has more classes, the number of pupils is not so much greater in San Juan as to justify this more costly organization. As there is little prospect for a material increase in the number of pupils in the coming year, this department is thoroughly in accord with the action of the legislature in reducing the number of teachers in the high school proper at San Juan, in the firm belief that the school can be organized on a less expensive basis without impairing its efficiency and in the hope that the sums saved in the higher instruction will inure to the benefit of the common schools throughout the island.

The fact that secondary instruction is expensive should not be made an argument against it, unless in the community's expenditure it receive an undue emphasis. The support of three high schools at centers of population of the island can not be deemed an excessive allot-

ment. These schools are needed to round out our educational system and to furnish a higher education to those who are preparing for professional life. They are especially useful as a training school for teachers. While not established for that immediate purpose, they afford a higher education than the graded schools can give to those who are unable to attend the normal school and who desire to acquire teacher's certificates by examination.

Connected with the high school there has been a series of grades, beginning with the first grade, which have acted directly as feeders to the high school department much in the same way as the preparatory departments maintained in many of our colleges and universities do in their respective institutions. There is, however, a certain anomaly in associating so directly with the high school children under 6 years, some of whom are unable to read and write. Arrangements have been made in San Juan and Ponce for a reorganization of the grades connected with the high school. Instead of forming a complete graded school comprising all the grades from the first to the eighth, it is proposed that in each city all of the grades above the fourth shall be brought together to form, as it were, a grammar school, which shall be associated with the high school. It is believed that this organization will be very satisfactory. The graded schools connected with the high schools have, as a rule, been somewhat better equipped for their work than other schools of corresponding grades, and it seems wise to make this better equipment available for the instruction of the more advanced pupils.

INDUSTRIAL SCHOOLS.

Industrial schools were maintained during the past year under the direct appropriation of the legislature in the cities of San Juan, Ponce, Mayaguez, and Arecibo. Under the general fund at the disposal of the department for the establishment and maintenance of industrial schools a school was also established at Guayama. Reference to the table of expenditures already given will show that a large portion of the slight increase of the expenditures of the last year over the preceding was due to the increased cost of maintaining industrial schools. Average attendance in the last two years in the several schools was as follows:

	1903–4.	1904–5.		1903–4.	1904–5.
San Juan	92	110	Arecibo	90	96
Ponce	98	120	Guayama	----------	74
Mayaguez	83	75			

The problem of the industrial school has given the department much concern during the past year. These schools represent a comparatively expensive type of instruction. The expense of such a school lies, first, in its equipment, which must be more extensive and embrace a wider variety of articles than are required in a common school, and secondly, in the difficulty of giving industrial training to large groups of children, which necessitates small classes and a larger number of highly trained teachers for a given number of pupils than in the common schools. It is obvious, therefore, that the

per capita cost of running those schools must, under all circumstances, be considerably greater than in the common schools, and that a comparison between the two will not demonstrate whether or not the industrial school is being economically conducted. The difference in per capita cost indicates not so much the cost of running a particular school as the difference between one type of education and another.

As industrial schools represent a somewhat expensive type, it is the obvious duty of the department to make the greatest possible economies within the limits which the type sets, and it has given this matter the utmost consideration. I am so much in accord with the views of my predecessors in regard to the utility of the schools and their great importance to the people of Porto Rico that I am desirous of extending their benefits to the utmost possible extent. This can be done by the establishment of new schools and by the full utilization of those already in existence. As the legislature failed to make any appropriation for the coming year for the schools of Arecibo and Guayama, the department is reluctantly compelled to close those schools. It has adopted plans for the organization of the remaining schools, which it is hoped will largely increase their efficiency. Without increasing the expenditure for the schools it is believed that the number of children brought under their influence can be materially increased, thus obtaining a considerable reduction in the per capita cost of maintaining the schools.

AGRICULTURAL SCHOOLS.

In the reports of my predecessors considerable attention has been given to the agricultural schools. During the past year 11 such schools were conducted on the same basis as in the preceding year. They were attended by 455 pupils, as compared with 506 attending 14 schools in the preceding year. These schools have been maintained where the results seemed to warrant it, but the number gradually diminishes as experience demonstrates that teachers properly qualified to give instruction in agriculture can not be obtained for the purpose.

NIGHT SCHOOLS.

Night schools, which are classed with the special schools, are reserved for final mention. They are an adjunct to our educational system rather than an integral part of it. In the contemplation of the law these schools are designed to reach the young persons who are unable to attend the day school, and are not for adults. The latter may be excluded if the schools can not accommodate the young persons who desire instruction. The record of these schools for the past year is very satisfactory. The number of schools in operation was 37, with an average attendance of 1,175, as compared with 26 schools in the preceding year, with an average attendance of 768.

Summarizing the statistical results for the average attendance in all the schools maintained by the department, we find it to have been:

	Average attendance.		Number of schools.	
	1903–4.	1904–5.	1903–4.	1904–5.
Common schools	39,928.35	42,989.27	1,060	1,048
High schools	86.31	106.39	3	3
Industrial schools	362.26	475.65	4	5
Night schools	767.80	1,174.59	26	37
Agricultural schools	506.56	455.47	14	11
Kindergarten	147.98	----------	6	----------
Total	41,798.26	45,201.37	1,113	1,104

SUPERVISION.

The progress thus far recorded has been made possible by the excellent system of supervision established in the department and by the zeal and intelligence of the supervisory force. At the present time the island is divided into nineteen districts, and at the head of each is a superintendent, who is regarded as the personal representative of the commissioner of education. In matters of detail these officers report to the chief of the division of supervision and statistics, who is also known as the general superintendent.

The personnel of this force is at present as follows:

District number.	Name.	Age.	Education.	Experience.
	Leroy R. Sawyer	*Yrs.* 29	Dartmouth College A. B., 1900.	Principal of schools, Sabana Grande, 1900; superintendent, Caguas, 1901; San Juan, 1902; chief of division supervision and statistics, 1903.
1	Leonard P. Ayres	26	Boston University, Ph. B., 1902.	English teacher, Penuelas, 1902; superintendent, Caguas, 1903; San Juan, 1904.
2	Edgar L. Hill	57	St. Joseph and McKendree colleges, Illinois, B. S.	Superintendent, Fajardo, 1899; Manati, 1902; Carolina, 1904.
3	Marion A. Ducout	32	Public schools, France; St. Paul Seminary, Minnesota.	Teacher in Holy Ghost College, Pa.; English teacher, Manati, 1899; Coamo, 1900; assistant superintendent, Humacao, 1901; superintendent, Utuado, 1902; Fajardo, 1903.
4	Jacob Warshaw	27	Harvard University, A. B., 1901.	Instructor of modern languages, University of North Carolina, 1901; English teacher, Trujillo Alto, 1903; superintendent, Humacao, 1904.
5	Carlos A. Reichard	22	Liceo de Mayaguez, A. B.; Instituto Provincial de Puerto Rico.	Rural teacher, 1900; graded teacher, Mayaguez, 1900–1902; principal of schools, Mayaguez, 1902–3; superintendent, Caguas, 1904.
6	John W. Zimmerman	34	Baltimore City College	Superintendent, Bayamon, 1900; Guayama, 1902.
7	George L. Spaulding	29	Bridgewater, Mass., Normal School.	Principal of schools, Rochester, Mass., 1901; English teacher, Yauco, 1902; superintendent, Aibonito, 1903.
8	Gail S. Nice	27	Harvard University (two years).	Statistical supervisor in department of education, 1902; private secretary to commissioner, 1903; superintendent, Coamo, 1904.

District number.	Name.	Age.	Education.	Experience.
		Yrs		
9	Rufus R. Lutz	35	Iowa Normal School	School teacher, Iowa, two years; superintendent, Arecibo, 1899; San German, 1903; Ponce, 1904.
10	Roger L. Conaut	33	Columbia University, A. B., 1895 (four years' postgraduate study).	English teacher, Maricao, 1899; insular normal school teacher, 1900; assistant superintendent, Bayamon, 1901; superintendent, Coamo, 1902; Caguas, 1902; Bayamon, 1903; Yauco, 1904.
11	Augustine Fourcaut	54	Public schools and college, Versailles, France.	Director of private school in Mexico; teacher, Military Institute, Georgia; superintendent, Boy's Charity School, 1900; English teacher, Quebradillas, 1902; superintendent, San German, 1903.
12	John S. Mellowes	38	Fulneck High School, Yorkshire, England.	Private tutor in Darlington, England; superintendent, Mayaguez, 1899.
13	Daniel F. Kelley	29	Ursinus College, Pennsylvania.	English teacher, San Sebastian, 1901; superintendent, Aguadilla, 1903.
14	Frederick E. Libby	28	Boston University, Ph. B., 1902.	English teacher, Veja Baja, 1904; superintendent, San Sebastian, 1904.
15	James W. Smith	25	Amherst College, A. B., 1902.	English teacher, Manuabo, 1902; superintendent, Utuado, 1903.
16	Enrique Landrón	27	Institute at San Juan; Escuela Normal de Puerto Rico, 1896.	Principal Cayey, 1900, San Juan, 1901; superintendent, Aibonito, 1902; Arecibo, 1903.
17	Eugene W. Hutchinson.	31	Loveland High School, Ohio.	Superintendent, Camuy, 1899; Manati, 1904.
18	Andrés Rodriguez	47	Escuela Normal de Puerto Rico, 1894.	Graded teacher, 1882–1900; principal, Carolina, 1900; superintendent, Vega Baja, 1902; Toa Alta, 1903.
19	Obadiah M. Wood	45	University of Michigan	Principal of schools at St. Louis, Mo. (16 years); assistant superintendent, Aguadilla, 1901; superintendent, Bayamon, 1901; principal of industrial school at Mayaguez, 1903; superintendent, Bayamon, 1904.

The force of superintendents is kept in close touch with the department by frequent reports and a voluminous correspondence. Provision is made for a more direct personal contact through the visits of the chief of the division of supervision and the annual conference.

Mr. Sawyer visited each of the districts last year, spending two or three days in each, visiting the schools and conferring with the superintendents in regard to all matters of detail.

The annual conference of superintendents was held at Ponce in January. The sessions lasted three days and consisted in the presentation and discussion of papers of professional interest. They covered a wide range of subjects, indicating a deep interest of the superintendents in the problems which confront them, and gave rise to a peculiarly fruitful interchange of views.

In each school district the schools are under the direct supervision of the superintendent. In organizing the special schools the initial tendency was to make them directly dependent upon the department. This was true of the high schools and particularly of the industrial schools, which had at their head a general supervisor. This organization has proved neither effective nor economical and will hereafter be discontinued, all schools within each district being placed in charge of the superintendent.

TEACHERS' INSTITUTES.

Teachers' institutes were conducted during the past year on the same plan that was pursued the year before. The available appropriation was small, but with the experience of previous years as a guide a more careful preparation for these gatherings was made and it is believed that the results obtained were of even greater value than in previous years. It is much to be regretted that the legislature failed to make any appropriation for these institutes during the coming year. They have been so successful in their operation that their abandonment would be a distinct loss to the progress of educational work in the island.

For the conduct of the institutes in the past year the department appointed as directors Mr. Paul G. Miller, principal of the normal school; Mr. Felipe Janer, vice-principal of the normal school; Miss Susan D. Huntington, principal of the practice school; Mr. Enrique C. Hernández, examining superintendent; Mr. L. R. Sawyer, chief of the division of supervision and statistics, and Mr. E. N. Clopper, principal of the high school in San Juan. To each of these directors was assigned three or four districts. In conjunction with the local superintendents a programme was prepared which embraced each meeting, and the part which the teachers were called upon to take in the programme was indicated to them in advance. As a result of this careful preparation and notice to the interested persons the discussions of the meetings were thoroughly practical and thoroughly helpful. Throughout the island the teachers entered into the spirit of the occasion with enthusiasm, and there were many testimonies of the value of this mutual interchange of thought with respect to the educational problems in which all had a common interest. In each district one public session was held. Mr. Manuel Fernández Juncos accompanied the assistant commissioner, Mr. E. W. Lord, to half of the districts, in which they addressed public meetings. In the remaining districts addresses were made by Mr. José Gordils and the commissioner, who was also assisted in some of these meetings by Mr. A. F. Martínez, of the department, and Mr. C. H. Ames, of Boston, at that time visiting the island and who courteously gave his assistance.

COURSE OF STUDY.

One of the first tasks which fell to the American school administration was the preparation of a course of study. While answering most of the requirements of elementary schools, there could at that time be no question of any special adaptation of the course to the conditions of school work in Porto Rico. As the years go by the inadequacies of this programme have become more and more evident, and the time seems ripe for a recasting of the course in the light of fuller experience. Animated by this spirit, the department took into consideration, first, the requirements of rural schools. Here the need was most pressing. The course of study is practically the only guide for the teacher. He can not have recourse to his fellows for consultation, nor to a principal of larger experience than himself, nor to the superintendent except at comparatively rare intervals. The department has sought to meet this need by the issue of a revised

course of study for rural schools. Issued in January, it has not been thoroughly tested as yet; but the great care which was bestowed upon its preparation warrants us in the belief that it will prove a valuable aid in the conduct of the schools.

The department has under consideration the preparation of a course of study for the graded schools. Many preliminary studies have been made, and it is hoped that a part of the course may be ready for use in the coming year.

TEXT-BOOKS.

A primary difficulty in the conduct of our schools has been the absence of suitable text-books. We are of necessity operating with improvised books. We have imported from the States some standard books in English. While not a few of these standard books were hastily translated into Spanish by the publishers and adopted here, not one of them has been prepared with a special view to our needs. Reading, writing, and arithmetic do not, it is true, vary with degrees of latitude nor the variations of the thermometer. But the subject-matter of these familiar processes varies widely. In the early stages of education this is extremely important. Teaching must apply its precepts to the experience of the pupil. A problem in arithmetic concerning peaches, which the child has never seen, has elements of difficulty which would not occur if the problem related to bananas. This intrusion into text-books of an environment foreign to the child can not be wholly cured until we have a set of text-books prepared directly with reference to the needs of the island. Till that time comes the greatest care should be exercised in the selection of our books, in order that the disadvantages of text-books imported from a different environment may be reduced to the minimum. With this end in view a committee was appointed in the past year for the purpose of thoroughly reviewing the books now in use in the schools and such others as might be deemed possible substitutes. The committee made a valuable report, which has been used as a guide in making the purchases for the present year. As the books now in use become dilapidated and worn they will be replaced by the standard books adopted by the department.

It is a part of this programme to secure, if possible, books adapted to special needs. In certain lines of work new text-books may be necessary; in others adaptations and translations of books now in use will prove adequate. The publishing houses are much interested in our propositions, and we are hopeful that they may bear fruit. Restricted appropriations for purchase of text-books has prevented our pushing this matter in preparation for the coming school year as much as we should have wished. One step, however, has been taken in this direction in our copy books. Hitherto the children have been taught writing from books with English copy exclusively. For the coming year arrangements have been made for the preparation of special copy books which in the first four grades will have an equal division of Spanish and English sentences in the exercises to be written by the children.

ENGLISH AND SPANISH.

Under the rules and regulations of this department the utmost effort has been made from the start to advance the study of English among Porto Rican teachers. Provision has been made for regular instruction in English to these teachers. In every school district the teacher of English holds classes once a week for the Porto Rican teachers, who are excused from attendance at their own schools during that period. Attendance at these classes is expected from all of the teachers. Every effort has been made to shape this work in an attractive manner for the Porto Rican teachers. A special course of study was prepared last year, and examinations in English held in May. The results of the examination were quite satisfactory, indicating in general notable progress in the knowledge of the English language among the Porto Rican teachers. In the month of June a special examination in English was given for the purpose of testing the ability of the Porto Rican teachers who were more advanced in the English language to give instruction in that language. As a result of this examination 54 persons were declared qualified to conduct classes in the English language.

In order to further stimulate the interest in the English language, the department during the summer of 1905 arranged to hold in the several school districts special summer classes in English. These classes were continued for a period of five weeks, giving in that time to the teacher as many actual lessons as would be obtained during the year's work when the lessons were once a week instead of daily. These classes had, moreover, an advantage of concentrated and continued effort and the results which were obtained were highly satisfactory. Over 500 teachers were enrolled, and the attendance was in general exceedingly regular.

The pupils and the teachers alike united in expressing their satisfaction with the results accomplished. The department is especially gratified that so large a number of teachers have voluntarily undertaken this work for their professional improvement without legal obligation to pursue it or without the exercise of any compulsion by the department.

As it is the desire of the department to spread knowledge of English among the Porto Rican teachers, so it is likewise solicitous to spread a knowledge of Spanish among the American teachers. The instruction in English is conducted more and more upon the conversational method, and it is the universal experience that best results are obtained when no Spanish whatever is used in the class room. Under these conditions there is no disadvantage in employing American teachers who are quite ignorant of Spanish. On the other hand, it is obvious that the best results can be obtained from those teachers who know Spanish, but do not use it in the class room. A knowledge of Spanish helps them in their social relations in the community. It enables them to understand more thoroughly the children with whom they have to deal, and is indispensable for the best work. While unable to provide instruction in Spanish for the American teachers, the department is desirous of furthering their progress as much as possible. In this spirit, the suggestion for a course of study was made to the teachers and text-books for learning Spanish were sup-

plied by the department to all who applied for them. Examinations in elementary and advanced Spanish were held by the department and certificates issued to those who successfully passed these examinations.

EXAMINATIONS.

Allusion has already been made in the foregoing to various examinations conducted by the department. Little by little the department has become an examining body with important functions to perform. In recognition of the importance of this work, my predecessor appointed an examining superintendant with general charge of this work. Early in the year there was created, for the purpose of cooperating with the examining superintendent and lightening the labors which had fallen to him, an examining board of which the examining superintendent was the chairman. This board has been very helpful in the preparation of papers and the examination of same and in formulating rules for the conduct of examinations. The examining superintendent, with the cooperation of the board, has prepared a manual of examinations codifying the rules and regulations of the office, which will shortly be issued.

CERTIFICATION OF TEACHERS.

In any future development of the school system of Porto Rico one of the most difficult problems will be to supply competent teachers. There are at present two sources of supply, the normal school and examination. The number of teachers graduated from the normal school is comparatively small and will not for a long series of years be adequate to supply the demand for teachers with any reasonable growth for our school system. Consequently considerable reliance must be placed upon the second source of supply, viz, examination by the department. The experience of recent examinations is not very encouraging. The proportion of applicants who pass these examinations is insignificant. This indicates that there have been a great many persons taking the examinations who should not have been admitted to them, whose preparation was so inadequate that there was no possibility of their success. This particular evil will be avoided in the future, but if the result is to cut down the number of applicants the net gain to the schools of Porto Rico in available teachers will still be small. The examinations for a rural teacher's license is not much more difficult than an examination for the eighth grade certificate, and after one year's experience as a rural teacher the examination for graded teacher's license can be taken. It is therefore possible that a person with an aptitude for passing examinations should in his second year after passing through the eighth grade in our schools have a certificate as a graded teacher. On the other hand, it is necessary to include in those examinations subjects for the instruction of which no provision is made outside of the normal school and in which an applicant must rely either on good luck or private preparation.

As a means of supplying teachers for our schools the examination for certificates is breaking down, and if we are to rely upon it to any extent in the future steps must be taken to reenforce it. A measure was introduced into the last legislature for the training of rural

teachers which had this end in view. It is proposed that selected persons should be given temporary licenses as practice teachers and should simultaneously follow a course of study prescribed by the department and supervised by the district superintendents. Some such solution as this would be highly desirable.

LOCAL ADMINISTRATION OF SCHOOLS.

The local administration of schools in each municipality rests with the local school board. It is the duty of this corporation to provide buildings for the schools, to maintain and equip school buildings, to provide janitor service, in short, to care for the material side of the school work. In addition to these functions they also nominate teachers for appointment, to whom they pay a monthly allowance in lieu of house rent. The duties of the board are many and complex. The superintendent of the school district is ex officio a member of the school board, and in a great majority of cases the relations which exist between the superintendent and the school board are those of the most complete and hearty cooperation. One of the most important events in the relation of the department to the school boards has been the establishment of a uniform system of accounting for the school boards throughout the island and the audit of the accounts in the office of the commissioner of education. The establishment of this system has been of great benefit to the school boards. It has brought order and system to their financial affairs, and has made it possible for them to undertake much more intelligently than heretofore the expenditures which may be necessary for the maintenance of the schools.

An important feature of this system has been the preparation of adequate budgets. There has been in times past much vagueness and uncertainty with regard to the probable receipts of the school boards, and some of them have been led by a too optimistic view of their probable resources into extravagant expenditures, which have resulted in debt and a subsequent paralysis in school matters. It is believed that this will hereafter be avoided in a large measure through the improved system of accounting prescribed for the local school boards. The labor which these measures have entailed upon the department is considerable, but the benefit to the school administration which arises from the intimate relations between the local school boards and the department and the improved mutual understanding is a rich reward for the money thus invested.

SCHOOL BUILDINGS.

With the gradual diminution in the trust fund, the resources of the department for the construction of school buildings have diminished and its activities have been less extensive than in the early years of the American administration. This relaxation has been for the ultimate benefit of the work. Buildings are not erected in large numbers and the department has time to test the wisdom of its plans before repeating them. There is, therefore, as time progresses, a better adaptation of the school buildings to the general needs of a tropical climate and special needs of the localities in which they are situated.

GRADED SCHOOL, LAJAS, 3 ROOMS, COMPLETED NOVEMBER, 1904. COST $5,633.90.

GRADED SCHOOL, JUANA DIAZ, 6 ROOMS, COMPLETED JUNE, 1905. COST $9,979.88.

GRADED SCHOOL, RIO PIEDRAS, 6 ROOMS, COMPLETED DECEMBER, 1904. COST $11,385.

The number of buildings erected by the department in the past year is not large, but the department takes pride in the character of these buildings. The 6-room building at Río Piedras, completed in the fall of 1904, is regarded as the best school building which has been erected by the department. Those constructed in this year at Juana Diaz, Lajas, and Yabucoa are on much the same general plan. Frame buildings for rural schools have been erected in the districts of Coamo and Santa Isabel. At the present time the department has under construction a 2-story 12-room building for the high and grammar school at Ponce. It will be located opposite the Roosevelt Industrial School, and with the latter will form a stately group of school buildings. School buildings are also under construction in Patillas and Isabela.

Careful preparation of the plans has enabled the department to introduce in the construction of these buildings substantial economies which have not impaired the effectiveness of the buildings. In consequence of these economies the department has been able more than before to devote some attention to the surroundings of the schools. In some places may be seen handsome buildings erected by the department located in clay banks with no inclosure and with no approaches. One can imagine the amount of mother earth which would be carried into the schoolrooms in wet weather. Attention is now being directed to these matters of detail. The effort is being made to have proper pavements in front of the schoolhouses, a proper inclosure of the grounds, and wherever local conditions make it necessary a suitable water supply for the school use.

Through the activity of the department the greater part of the towns of the island have been supplied with at least one modern schoolhouse, but this has not satisfied the demand for better school buildings. Requests are made constantly to the department for aid in the erection of school buildings, and it is with regret that we are unable for lack of money to give the aid requested. In view of the fact that so much money had been spent by the department in the erection of buildings for town schools, particular attention has been given in the past year to stimulate the interest in constructing suitable school buildings in rural communities. In this matter the department was ably seconded by the department of interior. Changes in the administration of the public roads introduced in that department places at its disposal a considerable number of well-constructed buildings, which had hitherto been used as dwellings for the road assistants. These were generously placed at the disposal of the department of education, and arrangements have been made for the utilization of a number of them by the local school boards for the purposes of rural schools. Local school boards are directing attention to the necessities and needs of the rural schools, and in several instances have approved the expenditure of a portion of their surplus in constructing rural school buildings. Operations of this class are already under way in Yauco and Juana Diaz and will soon be undertaken in Guayama, Manati, and Aguada. The department is desirous of assisting this movement in every possible way. Plans and specifications are furnished by the department to all school boards who apply for them.

When the graded school buildings now under construction are completed, the department will have at its disposal as the result of repayments from the municipalities of one-half of the cost of construction of the buildings, a small annual fund which will be used to stimulate the movement toward better rural schools.

In addition to the construction of buildings the department has been under the necessity of making certain very extensive repairs. The high school in San Juan has been located for a number of years in the Beneficencia Building, a part of which was used by the insane asylum. The increased needs of the latter led to the removal of the high school from this building and its assignment to the unused portion of the San Francisco Barracks. This building was entirely out of repair, and to make it available for school purposes it has been necessary to expend upward of $5,000.

The use of the military barracks at Aguadilla having been transferred to the department, considerable repairs were made in that building to fit it for reception of the schools.

GENERAL CONCLUSIONS.

Attention has been called by my predecessors to the inadequacy of the school system established in Porto Rico to meet the educational needs of the island. Particular stress has been laid upon the fact that a very small proportion of the school population in Porto Rico is actually enrolled in our schools—in the present year about 18.6 per cent. In view of the fact that the appropriations for school purposes show at least a declining rate of growth, it becomes highly important to examine just what are the educational needs of Porto Rico and just how far the present organization is fitted to supply those needs. If it were true that some 80 per cent of the need for education was unsatisfied and that this need could not be satisfied unless our present schools and the appropriations for their support were to be multiplied five times, then we might well grow discouraged in our efforts under present conditions. Under such circumstances our efforts might well appear futile. Encouraged by the hope that the resources at their command would increase and that ultimately the problem would be adequately met, our department has heretofore been contented that the methods and purposes of our schools were good. We have laid emphasis upon the quality of our work and have given little attention to the quantity of it.

It appears to me that the time has come for a more exact definition than we have had thus far of what are the educational needs of Porto Rico. They can not be defined by a reference to the law which makes the legal school age from 5 to 18, but must be studied in connection with the special conditions which prevail in the island.

The population of legal school age, or the number between the ages of 5 and 18, expresses the educational need for a system which shall provide for every child in the community both a common school and a high school education. It represents a maximum which could not be attained except where population was concentrated in cities, and which, in fact, is very far from being attained in the cities of the United States, or, indeed, in any part of the world. If demonstration were needed, ample proof can be found in the census of the

United States for 1900, from which we gather the following facts respecting the number of children attending school at certain ages:

Age.	Population.	Attending school.	Per cent.
5 to 9 years	8,874,123	4,266,302	48.1
10 to 14 years	7,556,089	6,451,394	84.1
15 to 17 years	4,566,817	1,918,025	42.0
18 to 20 years	4,491,111	525,179	11.7

These figures show clearly that in the United States attendance at school is the normal activity of the child only between the ages of 10 and 14. Before that age many children delay entering school, while after that period many children leave the schools. It is obvious that if all the children in the ages 10 to 14 attended school that every child in the community would enjoy at least five years' elementary education. That 15.9 per cent are not in school does not show that this percentage of the population is wholly untaught. Some of them undoubtedly have entered schools earlier, have had five years' schooling, and leave before they reach the age of 15. Others may not have had a full five years' schooling, but have had two or three, at least enough to learn how to read and write and acquire some other elements of an education. The percentage of the wholly untaught would be extremely small, as the statistics of illiteracy in the States with a good educational system show.

How does the situation in Porto Rico compare with that in the United States. The Director of the Census at Washington has kindly prepared, at my request, an estimate of the population in Porto Rico in 1904,[a] showing in detail the number of persons of each age during the legal school period which enables us to answer the question precisely. Placing these estimates in conjunction with the statistics of school enrollment, we find the proportion of the population at each age enjoying school facilities to have been as follows:

Ages.	Population.	Attending school.	Per cent.
5, 6, and 7 years	94,043	10,447	11.1
8, 9, and 10 years	87,056	25,561	29.3
11, 12, and 13 years	79,651	22,523	28.4
14 to 18 years	104,544	9,355	8.9
5 to 18 years	365,294	67,886	18.6

The age grouping for Porto Rico is not identical with that for the United States, but the results of the analysis bear the same analogy. Before the age of 8 years the proportion of children in school is very much less than in either of the succeeding age periods, while in the upper range of the school age the years 14 to 18 the proportion is very small.

[a] The comparisons with the population in this report are made throughout with that of the year 1904. This is in accordance with the statistical principle that the events of a year should be related to the average population of the year or the population at the middle of that year. The census of Porto Rico was taken in the months of November and December, 1899, and hence for comparison with the school year of 1904–5 the proper term of comparison is the estimated population of 1904 and not that of 1905.

From the foregoing table it appears that some 18.6 per cent of those who might be attending school in 1904 were actually doing so—were being taught. The vital question is to find the percentage who were actually untaught. In each of the age periods 8 to 10 and 11 to 13 it appears to be something over 70 per cent, but if this represented the true percentage it would follow that every one of the remainder—the children in school—enjoyed six years' education each. This is far from the fact and would suppose an even longer elementary education than is prevalent in the greater part of the United States. We may look at the figures in another way. If the children of Porto Rico stay in the schools three years each, then our figures would show that among the children who had reached the age of 14 years 11.1 per cent had received an elementary education at the ages 5 to 7; 29.3 per cent at the ages 8 to 10, and 28.4 per cent at the ages 11 to 13. In short, of all the children reaching 14 years of age, 68.8 per cent would have received their elementary education. As few would obtain an elementary education after 14 years of age, it is evident that the percentage of the untaught, instead of being about 70 per cent of the population growing into manhood, would be 30 per cent.

While the foregoing figures are only tentative they illustrate an important principle. We do not test the literacy of a community by the number of persons who are learning to read and write, but by the number who have learned to do so. So we must test the adequacy of a school system by the number it can and does teach before the children reach man's estate, and by the duration of that teaching.

It is impossible to determine the exact age at which every child should enter school. The law permits a child to enter at 5 years, but this is undesirable. Most educators are agreed that every child should be learning by the time it reaches 8 years of age. The educational needs of Porto Rico will depend upon the number of children to be educated and the number of years' schooling which may be deemed desirable for each and every child. By using the figures for the ages of children as estimated by the United States census authorities we can establish a theoretical measure of the needs for schools upon the basis of different school systems.

Age.	Years' schooling.	Children to be provided for.
8 years	1	29,968
8 to 9 years	2	58,209
8 to 10 years	3	86,056
8 to 11 years	4	113,217
8 to 12 years	5	139,767
8 to 13 years	6	165,707
8 to 15 years	7	190,970
8 to 16 years	8	210,965

It is hardly necessary to dwell upon the proposition that in a plan of general education it is more desirable to provide a few years' schooling for all the population than a complete education for a part of the population.

The question is then to determine what measure of education is a proper ideal for a practical effort to conduct a general system of public education in Porto Rico. The answer to this question can not

be made dogmatically. A preliminary inquiry as to the extent to which the people at large avail themselves of educational opportunities where facilities are ample, as in the United States, will be helpful in considering it. Figures already quoted show the population of 5 to 14 years actually attending school to have been 10,717,696. This figure is slightly in excess of the population from 7 to 12 years of age, which is 10,210,006. In other words, in the United States the average length of an elementary education could not much exceed six years.

As in Porto Rico our educational system is confessedly inadequate, we could gain no light from a similar computation. But we have had our schools in operation for a number of years, and some idea of the length of school experience can be had in examining the statistics of school grades. The following table gives a statement of the grades:

Grade.	Porto Rico, 1904.						United States, 1904.	
	Rural.		Graded.		Common.			
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
First	20,153	60.5	12,717	40.8	32,870	50.7	5,149,296	33.5
Second	8,783	26.3	7,237	23.2	16,020	24.1	2,912,462	18.9
Third	4,130	12.4	4,889	15.7	9,019	14.0	2,426,263	15.8
Fourth	221	.6	3,014	9.7	3,235	5.0	2,168,956	14.1
Fifth	20	.1	1,704	5.4	1,724	2.7	1,288,114	8.4
Sixth	22	.1	889	2.8	911	1.4	700,885	4.6
Seventh	----------	----------	494	1.6	494	.8	405,693	2.6
Eighth	----------	----------	239	.8	239	.4	323,607	2.1
Total	33,329	100.0	31,183	100.0	64,512	100.0	15,375,276	100.0

It shows that our rural schools do not go beyond the third grade. In fact, they are not organized to do so. Each grade is designed to represent a year's work, but in practice many pupils are not promoted at the end of the year, and hence the children have been in school longer than the figures indicate. However, it seems fair to assume that few pupils stay longer than three years in rural schools. The table, moreover, shows that in the graded schools it is only a small proportion which passes the fourth grade. The figures for the United States introduced into the table show that the concentration upon the earlier grades is not a feature peculiar to Porto Rico, although it is somewhat more pronounced here.

These figures for Porto Rico show in a measure, therefore, to what extent the children who have entered the schools remain in them. From all the figures which have been brought forward in evidence I believe the conclusion warranted that rural schools sufficient to give every child three years' schooling and graded schools sufficient to give every child four years' schooling would furnish an ample educational equipment for general public education in Porto Rico. Such a system would require school facilities for approximately 93,000 school children.

Now, it is to be observed that under any educational system the number of children who come under the influence of the school will be greater than the average equipment. The falling off of pupils is considerable. In the foregoing table of grades it will be noted that the number of scholars who have reached the third grade in Porto Rico is only 9,019, while the two preceding grades comprise 48,890

pupils. Hence, if we had in Porto Rico an equipment capable of educating 93,000 children as suggested, we could readily provide for all the children of 8 years and of 9 years of age and allow one-half of the children of 10 years a third year and the older children a greater number of years. In other words, a system which provided an average education of three years and a half duration might readily provide a minimum education of two years for all the children and a maximum of eight years for an ample number to supply our schools of secondary education. How far do we fall short of providing these adequate facilities, and where does the deficiency occur? Since it has been shown that the needs of the towns and those of rural districts are not identical, it becomes necessary to estimate the needs of each section separately. To do this a list of all the schools in the island, with their respective locations, was compared with the last census of Porto Rico. This comparison led to the following table:

	Number of inhabitants.	Per cent of total population.
Towns or population served by graded schools	221,326	23.2
Rural regions having rural schools	520,396	54.6
Rural regions having no rural schools	211,521	22.2
Population in 1899	953,243	100.00

While there has been an increase of population since 1899, it is not to be expected that the relative proportions of the towns and the rural communities have changed. The towns, therefore, should require schools for 23.2 per cent of the population of 8 to 11 years of age (113,217 persons) or 26,266 children, on the basis of furnishing in towns an elementary education of four years' duration on the average. In the past year these towns enrolled 33,057,[a] a figure which includes all the graded schools and a few schools classed as rural but included within the town limits. The same schools showed an average daily attendance of 21,561. Since the average daily attendance is the measure of what the schools are actually doing, it seems the proper figure to compare with our estimate of school needs. It is therefore apparent that an addition of 5,000 children to those in regular attendance on the schools of our towns—an addition, in round numbers, of one-fourth—would bring the schools to a very satisfactory ratio between school attendance and educational need. With such an addition the problem of providing a satisfactory sys-

[a] In the early part of this report, in comparing one year with another, the average daily attendance was used. In the general discussion of age and grades it was necessary to turn to the annual enrollment. The figures vary considerably, but the proportions are without doubt the same in each. The annual enrollment represents the whole number of children who come into the school lists. Many drop out out after a short attendance and many enter late. The number who at any one time belong to the school is the average daily enrollment, and this is the proper figure to use in ascertaining the percentage of attendance. The average daily attendance for the year which is used in many points in this report as the significant figure is in fact the measure of efficiency. It represents actual units of teaching, and is equivalent to the attendance of the number of pupils stated on every school day of the year without exception or interruption.

tem of elementary education in the towns of Porto Rico would have been solved.

If we turn now to the rural districts, we find there a less encouraging situation. They comprise the greater part of the population of Porto Rico, and here an average schooling of three years' duration is the most that can be aspired to. Comprising 76.8 per cent of the population, these districts should provide instruction for this proportion of the population between 8 and 10 years of age (86,056 persons), or 66,092 children. But in fact these districts showed, in 1904–5, an enrollment of only 31,455 children and a daily attendance of 21,428.

There is a wide divergence here between school needs and school attendance. There is a large percentage of children who do not come under the school influence. In some localities unfortunately this influence is not exerted at all. There were 216 barrios in which there were no schools whatever in 1904, and these barrios had in 1899 a population of 211,521 souls. We can therefore estimate by proportion that 19,704 children of the ages 8 to 10 in these districts were growing up wholly without education. While this does not change the general average, it is clear that in so far as any provision is being made for education in rural communities the proportion between needs and the provisions for them in such communities is more favorable.

Summarizing our results, it appears—

1. That towns requiring provision for 26,266 children have 80 per cent of the need supplied.

2. That rural districts with schools requiring provision for 47,988 children have nearly 50 per cent of the need supplied.

3. That rural districts requiring provision for 19,104 children have none of the need supplied.

It is hoped that with a more exact knowledge of our needs we can shape with greater intelligence our efforts to fill them. It is clear, moreover, that the need, large as it is, is not so overwhelmingly great as to discourage endeavor. Rather that the end appears not unattainable should we urge every effort to reach it.

A large increase in the money available for school purposes could be spent in Porto Rico with good results, and progress can hardly be expected without an increase of expenditure. But much depends upon the manner in which it is expended, and with a proper view of necessities much greater results can be obtained from moderate expenditures than from larger disbursements blindly directed.

Let us first look to the needs of the towns. Within certain limits an increase in the efficiency of the schools can be obtained without any marked increase of expenditure. In some localities the average enrollment and attendance per school can be increased by an intelligent effort on the part of the school authorities. The average attendance in graded schools is 40.87. There is no objection in school management to a class of 50. If this increase could be effected it would mean an increase of 22 per cent in the effectiveness of the schools. The principal obstacle to bringing about such a change is the size of schoolrooms. So far as we are dependent upon rented buildings for schoolhouses, this is a serious difficulty. Dwellings, storehouses, and factories converted into schoolhouses do not offer the same facilities as specially constructed buildings. But it is to be hoped that the time will some day come when we can get rid of the rented

buildings. In so far as we can do so or exercise greater care in their selection, we can provide class rooms capable of containing more pupils, and thus enlarge the influence of the schools.

American cities, when the rapidly growing demand for schoolhouses can not be met, have frequently resorted to the expedient of half-time classes. For younger pupils such classes have both advantages and disadvantages, and educational opinion is divided upon the merits of the plan. It offers a practicable solution of a very real difficulty. The department is watching with great interest this experiment where it is being tried in Porto Rico. Should it demonstrate its efficiency it points out a method by which our schools could reach a much larger number of children.

The problem of meeting the educational needs in the rural districts is far more difficult. There is, in some districts, a sufficient concentration of population to permit a larger attendance if adequate quarters could be obtained. In so far as such a possibility exists the movement for rural schoolhouses, already noted in this report, has a special significance. The new buildings are almost uniformly more commodious than the rented buildings which they replace, and herein is an element of increased usefulness. But in many regions population is sparse and an increase in school enrollment for existing schools can not be obtained. Many of the barrios are very extensive, and even when they have schools the buildings are not accessible to a large number of children. We need more schools in the barrios which already have them as well as in those which are now entirely without schools. These new schools, if established, could not count upon an attendance equal to those now existing, and progress in the rural districts must generally mean a lower rather than higher average attendance per school.

For obivious reasons, the expedient of a double enrollment suggested with reference to town schools has no application to the rural districts. Something, however, can be said in favor of half-day sessions in different localities, the teacher giving his morning to one school and his afternoon to another. This is a possibility in some few cases. In other cases the expedient might be tried of a shorter school year, the same teacher giving five months to one school and five months to another.

Apart from the financial question the whole problem of the rural school is complicated by the questions concerning the supply of rural teachers. Before we can have great progress the supply must be considerably augmented, and all measures which look in these directions merit careful consideration and discriminating encouragment.

In conclusion, it is a pleasure to note that the educational situation in Porto Rico is full of hope. The local authorities and the teachers are animated by a progressive spirit, the work improves from year to year, and we look forward to the day when our educational efforts may justly challenge comparison with the best endeavors put forward anywhere for popular education.

APPENDIX.

REPORTS OF CHIEFS OF DIVISIONS.

EXHIBIT I.

FINAL REPORT OF THE DISBURSING OFFICER.

DEPARTMENT OF EDUCATION,
San Juan, September 6, 1905.

SIR: On the 22d of May of the present year the undersigned was designated as acting disbursing officer of the department of education in substitution of Mr. J. R. Wildman, who was granted leave of absence to visit the United States.

The new general disbursing office, created in pursuance of a resolution of the executive council, began its work on the 1st of July, 1905, and on the same day the division of disbursements and accounts of this department, together with my functions as the disbursing officer, ceased. For these reasons, it is my duty to submit to your consideration the present report, which comprises all accounting operations of this department which were effected during the fiscal year 1904–5.

In accordance with instructions of the auditor of Porto Rico the miscellaneous accounts which included the appropriations "Instruction and training of young men from Porto Rico in the United States" and "Education of Porto Rican students in the United States" and "Education of Porto Rican students in the normal school at Rio Piedras" were merged with the regular account, and figures accordingly with this account in the present report. It will be observed that the account "Miscellaneous receipts" is lacking. This account has disappeared from the books and accounts of the department of education. All sums collected from teachers and superintendents of schools for loss of books as well as the proceeds of the sales of desks to the school boards figure in the account "common school equipment" (act of Mar., 1904). On the other hand, the commissioner of interior assumed charge in June, 1904, of the administration of the lands connected with the school at Fajardo, the rent of which had been collected by the department of education up to and including the 31st of May, 1904, such receipts being for the account of the treasury of Porto Rico.

By virtue of a law passed by the legislative assembly of Porto Rico and approved March 9, 1905, upon administration of the pension fund of insular teachers, the department of education made a formal transfer to the board of trustees named by the governor of Porto Rico for this object of all papers, books, documents, and money belonging to the said funds according to inventories signed on the date of June 10, 1905. The following statements show all payments, together with the appropriation heads under which these disbursements were made.

REGULAR ACCOUNT.

RECEIPTS.

"An act making appropriation for the necessary expenses of carrying on the government of Porto Rico, for the fiscal year 1904–5, and for other purposes," approved March 10, 1904	$619,145.00
Transfer from "Miscellaneous expenditures," subject to the approval of the governor	1,500.00
Credit to appropriation "Salaries, office commissioner of education," as per appropriation warrant No. 161	1,000.00
Credit to appropriation "Contingent expenses, office commissioner of education," as per appropriation warrant No. 161	500.00

Repayment to appropriation "Salaries, common school"	$75.00
Repayment to appropriation "Technical education of Porto Rican students in the United States"	20.83
Total	622,240.83

DISBURSEMENTS.

Office commissioner of education:			
Salaries			$30,569.11
Contingent expenses—			
Sundries	$3,498.58		
Postage	1,800.00		
			5,298.58
Text-books and school supplies:			
Purchases	31,157.58		
Transportation	753.97		
			31,911.55
Common schools:			
Salaries	389,767.72		
Contingent expenses	12,269.02		
			402,036.74
Superintendents of schools:			
Salaries	23,332.58		
Contingent expenses	9,615.14		
			32,947.72
Teachers' Institutes:			
Salaries	265.00		
Contingent expenses	690.29		
			955.29
High and graded schools:			
Salaries—			
San Juan	14,182.50		
Ponce	10,255.00		
Mayaguez	7,658.00		
Fajardo	5,684.49		
			37,779.99
Contingent expenses—			
San Juan	699.84		
Mayaguez	56.81		
Fajardo	23.62		
			780.27
Industrial schools:			
Salaries—			
Principal	2,500.00		
San Juan	7,252.50		
Ponce	7,709.25		
Mayaguez	5,186.25		
Arecibo	4,935.00		
			27,583.00
Contingent expenses—			
San Juan	1,906.28		
Ponce	1,738.98		
Mayaguez	1,028.74		
Arecibo	1,285.90		
Rental and repairs	2,100.00		
			8,059.90
Library and museum, department of education, contingent expenses			390.09
Instruction and training of young men from Porto Rico in the United States			9,918.13
Technical education of Porto Rican students in the United States			4,479.13
Education of young men and women in the insular normal school			5,126.42
			597,835.92
Balance			24,404.91

TRUST FUNDS.

SCHOOL EXTENSION IN PORTO RICO.

Available fund.

July 1, 1904. To balance, separated for convenience in accounting into—			
General account		$10,753.89	
Erection of buildings		110,174.23	
			$120,928.12
General account (repayments by municipalities, as follows):			
Rio Grande		1,100.00	
Rio Piedras		1,064.55	
Sabana Grande		339.76	
Las Marias		1,110.50	
Maricao		946.47	
San Sebastian		916.64	
Añasco		740.02	
Lajas		469.95	
Juana Diaz		1,587.36	
Cabo Rojo		550.00	
Ponce		1,600.00	
Yauco		1,159.64	
Adjuntas		916.65	
Yabucoa		1,158.92	
Arecibo		391.30	
Bayamon		821.00	
Santa Isabel		833.34	
			15,704.10
Total			136,632.22

Disbursements.

General accounts:		
Salaries—Inspector, assistant inspector, stenographer, and draftsman	$5,934.85	
Travel—Inspector and assistant inspector	672.22	
Contingent expenses (advertising bids, cablegrams, transportation of desks to new schools, extras not included in contracts, supplementary contracts, etc.)	1,197.03	
Construction of rural school (Coamo)	1,780.00	
Total	9,584.10	
Erection of buildings—Contracts	39,356.31	
		48,940.41
Balance		87,691.81

TEACHERS' PENSIONS.

Available fund.

July 1, 1904. To balance			$27.51
Payments by municipalities, as follows:			
Fajardo (Ceiba)		$164.64	
Aibonito		54.53	
Cabo Rojo		83.76	
Carolina		36.00	
Humacao		126.82	
Lajas		111.61	
Naguabo		71.80	
Patillas		206.45	
Yabucoa		58.07	
Isabela		292.59	
			1,206.27
Total			1,233.78

Disbursements.

Balance due quarter ended September 30, 1903	$114.60	
Part payment for the quarter ended December 31, 1903	797.80	
Amount paid to the treasurer of the board of trustees of the teachers' pension funds, by the treasurer of Porto Rico as per his letter under date of June 17, 1905	321.38	
		1,233.78

ESTABLISHMENT AND MAINTENANCE OF INDUSTRIAL SCHOOLS IN PORTO RICO.

(No fiscal year.)

July 1, 1904.	To balance	$20,265.65	
	Claims settled by auditor against this appropriation as per warrants Nos. 6797 and 6957, dated July 21 and 23, 1904	1,050.04	
			$19,215.61
	Payment to this appropriation on date, May 22, 1905		51.56
	Total		19,267.17

Disbursements.

Industrial schools:			
Arecibo—			
Salaries [a]	$350.00		
Contingent expenses	254.07		
		$604.07	
Ponce—			
Contingent expenses		841.19	
Guayama—			
Salaries	4,588.75		
Contingent expenses	1,639.02		
		6,227.77	
Mayaguez—			
Contingent expenses		184.04	
			$7,857.07
Balance			11,410.10

COMMON SCHOOL EQUIPMENT.

(No fiscal year.)

Created by an act of the legislature, entitled "An act to reappropriate moneys paid by municipalities and other parties to the commissioner of education for school equipment, and for other purposes," approved March 10, 1904.

July 1, 1904. To balance	$224.96
Repayment on account of money erroneously collected for lost books as per check No. 17538, J. R. Wildman, disbursing officer, department of education, dated May 20, 1904, in the amount of $7.26 deposited to the credit of the appropriation "Common school equipment," no fiscal year, as per treasurer receipt No. 14803, dated May 25, 1904	7.26
	217.70

[a] The salary of an additional teacher paid from this appropriation by resolution of the executive council.

Receipts.

From the following school boards on account of sale of desks:		
Ponce	$1,304.70	
Arecibo	45.90	
Santa Isabel	141.05	
Coamo	111.75	
Caguas	145.00	
	1,748.40	
Payment for lost books and supplies	1,360.81	
		$3,109.21
Balance		3,326.91

REPAIRS AND SCHOOL EQUIPMENT, SAN FRANCISCO BARRACKS.

(Trust fund.)

Receipts.

April 18, 1905. To balance by transfer to this account from the appropriation "Insurance receipts from model and training school trust fund," approved by the governor	$6,820.58

Disbursements.

June 1–15, 1905. Amount paid for services of carpenters and laborers in repairing San Francisco barracks	73.72
Balance	6,746.86

RECAPITULATION.

	Receipts.	Disbursements.
Regular appropriation	$622,240.83	$597,835.92
School extension in Porto Rico trust fund	136,632.22	48,940.41
Teachers' pension trust fund	1,233.78	1,233.78
Establishment and maintenance, industrial schools	19,267.17	7,857.07
Common schools, equipment	3,326.91	
Repairs and school equipment, San Francisco Barracks	6,820.58	73.72
Balance		133,580.59
Total	789,521.49	789,521.49

While there are certain outstanding bills against the department of education for disbursements relating to the fiscal year 1904–5, these vouchers as soon as received will be presented to the general disbursing officer for payment. In connection with the present report I desire to mention one of the most laborious and responsible duties which has been entrusted to this division. At the close of the fiscal year 1904–5, by resolution of the executive council the commissioner of education was directed to pay in June, 1905, all credits in favor of teachers for sums retained from their salaries in order to provide for payment during the three months of vacation. The sums involved were considerable and the labor exacting, but through the cooperation of the auditor, treasurer, and governor of Porto Rico this division was enabled to perform this operation on June 23, 1905, with absolute accuracy.

One of the most important matters which has occurred during the past year has been the supervision of the accounts of school boards, a duty which, under the new organization of disbursements, remains in the department of education under the division of property and accounts, this supervision being the especial duty of the assistant chief. By virtue of the provisions of the organic law which authorizes the commissioner of education to supervise all expenditures for school purposes, and by virtue of the provisions of the school law which provides that the treasurer of Porto Rico, with the approbation of the

commissioner of education, may prescribe methods of accounting, this office, with the approval of the treasurer of Porto Rico, undertook the establishment for the various school boards of a uniform system of accounting.

This work involved—

First. The preparation of a system of accounting, fixing the several heads under which the disbursements of the school boards were to be made, and requiring all payments to be made by vouchers with reference to these distinct headings of the appropriations made by the school boards.

Second. Placing the treasurers of the school boards under bonds of fidelity companies and making them responsible for an exact compliance with the rules and regulations of the department.

Third. The examination and audit of all payments made by the school boards under the system prescribed by the department, which went into effect January 1, 1905.

Fourth. The issue of detailed instruction with regard to the formulation of budgets for the fiscal year 1905–6, and the examination of these budgets in detail with respect to the legality and propriety of the expenditures proposed.

The constructive work above outlined demanded the attention of this division in the early months of the fiscal year and it was impossible to place the completed system, as expounded in a voluminous circular, in operation until January 1.

The experience had with these accounts in the course of the year gave rise to many perplexing and interesting questions, which became the subject of a series of subsequent instructions in which the general principles of the accounting system were explained in greater detail to the members of the school boards. The experience gained through the audit of these accounts enabled this division to make a minute examination of the budgets proposed for the fiscal year 1905–6, and it is believed that through the cooperation of this department with the school boards order and system have been introduced into the accounts of these bodies to the benefit of the administration of schools throughout the island.

This division has furnished the division of supervision and statistics the data relative to the financial affairs of the local school boards for inclusion in the statistical report of the department.

Very respectfully,

A. Gonzalez Font,
Acting Disbursing Officer.

Exhibit II.

DIVISION OF DISBURSEMENTS AND ACCOUNTS.

Supplementary Report of the Porto Rican Teachers' Summer School Fund.

Sir: It was the desire of my predecessor, Mr. J. R. Wildman, who, in addition to his duties as disbursing officer of the department of education, acted during the summer of 1904 as the business agent and disbursing officer of the Porto Rican teachers' expedition to the United States, that there should appear in the report of the commissioner of education a complete final statement of the receipts and disbursements made on account of that special fund.

Through the courtesy of the auditor of Porto Rico a thorough examination of the accounts of this expedition was made by the auditing officials of the insular government. Mr. Wildman left in my hands the following report of the chief of the division of accounts and claims:

[Copy.]

Office of the Auditor,
San Juan, P. R., May 16, 1905.

Sir: In obedience to your request to examine the accounts of J. R. Wildman, disbursing officer of Porto Rican teachers' summer school fund, I have the honor to report:

AMOUNT OF RECEIPTS.

Retained salaries of Porto Rican teachers		$21,175.57
Subscription, citizens of—		
Boston	$10,731.86	
New York	2,560.00	
Philadelphia	1,298.70	
Porto Rico	150.00	
Receipts from miscellaneous sources	455.56	
Interest on deposits	77.82	
Deposit of S. M. Lindsay May 4, 1905	416.01	
		36,865.52
Overdraft at City Trust Company, Boston, as shown by letter of treasurer under date of May 4, 1905, to be made good by S. M. Lindsay		146.57
Outstanding check No. 161, payable to order of N. W. Edson, Orono, Me		2.00
		37,014.09
Disbursements, as per vouchers with checks attached, except in case of voucher No. 161		37,014.09

The account as made up, with statement of receipts and expenditures accompanying, is complete and full, each check being attached to voucher numbered alike, payable to order, and properly endorsed.

Respectfully submitted.

C. B. MORTON,
Chief Division Accounts and Claims.

Hon. THOMAS W. HYNES,
Auditor of Porto Rico, San Juan, P. R.

In connection with the above statement, I beg to report further that a communication of the late commissioner of education, Dr. S. M. Lindsay, advises us that items aggregating a total of $564.58, which appeared in the foregoing statement under the following heads:

Deposit of S. M. Lindsay May 4, 1905	$416.01
Overdraft at City Trust Company, to be made good by S. M. Lindsay	146.57
Outstanding check No. 161, payable to the order of N. W. Edson, Orono, Me	2.00

had been deposited by Dr. S. M. Lindsay in the City Trust Company of Boston from funds provided by subscriptions from guarantors, as follows:

Isaac N. Seligman, New York	$118.87
Bolton, Bliss & Dallett, New York	148.57
R. Fulton Cutting, New York	148.57
Joseph Horton, New York	148.57

The foregoing statements are herewith presented to you at the request of my predecessor, Mr. J. R. Wildman.

Very respectfully,

A. GONZALEZ FONT,
Acting Disbursing Officer.

EXHIBIT III.

DIVISION OF PROPERTY AND SUPPLIES.

DEPARTMENT OF EDUCATION OF PORTO RICO,
OFFICE OF THE COMMISSIONER,
San Juan, September 30, 1905.

SIR: The work of the division of property and supplies has gone on steadily and satisfactorily during the past year, the system of buying, receiving, distributing, and accounting for school supplies of all kinds having proved equal to all demands upon it. Schools have received during the past year under the

new pro rata schedule enough of the different text-books and materials to meet their needs when used with due economy.

One of the most important actions concerning the work of this division was the appointment of a text-book committee to prescribe text-books for uniform use in the same grades in the different districts. As pointed out in my last report, there are in use on the island text-books of over 400 different titles. This precluded the possibility of carrying books in stock in anticipation of requisitions from the superintendents. It is a matter of regret that our appropriation for 1905–6 will not permit of carrying out the recommendations of this committee except in two or three of the larger districts, retiring the older books from these districts to others. With the present appropriations it will be three or four years before the books recommended will be in use throughout the island.

In the condemnation of worn-out and useless text-books a different method has been used. When this division was first established it was found that condemnation of old books had been infrequently held, and that as a result many of the superintendents were charged with books which were actually nothing but a mass of torn and dirty leaves, unfit for school use or indeed for handling at all. These books were burnt, as the easiest and quickest means of solving the difficulty. Since this first condemnation superintendents have gathered in their headquarters at the end of the school year all the books that were deemed ready for condemnation. A representative of this division then visited the district, and after examining them stained the three edges with an analine dye, preventing the possibility of their being again used in the schools or included in the property returns of the superintendents or teachers. This also prevents the substitution of these old books for new ones of the same title. After staining the edges the books are returned to the superintendent to be distributed among the poorer children of the district who are unable to attend school. This distribution is gratis, and the anxiety of the children to secure these old books is touching and is indicative of a thirst for knowledge.

It is my opinion that if each teacher be furnished with a package of transparent adhesive paper that the text-books could be used for a longer period than is now the case. The children should be instructed to take their books to the teacher immediately for repairs. This would take very little time and result in a large saving. The recommendation made in my last report for the purchase of book covers, such as are in use in many of the cities of the United States, has not been carried out, owing to the limitations of the appropriations of this department. As the appropriation for the coming year is still smaller, there is little chance of doing this in the near future.

During the year this division has handled articles intended for the various schools and for the office to the value of $76,877.07. The cost of receiving, freight, and distributing is about 7½ per cent. This percentage includes the rent of the storehouse ($1,500) and the cost of a loft placed in same during the year ($150). A detailed statement follows:

Text-books and school supplies	$36,704.51
School furniture	7,288.10
Industrial school material, etc	7,871.92
Library and museum	469.33
High-school books, etc	862.87
Office supplies, furniture, etc	2,130.67
Stock on hand June 30, 1904	21,549.67
Total	76,877.07

Salaries, chief division and shipping clerk	3,000.00
Rent of storehouse	1,500.00
Island transportation	754.79
Expenses, sundry	10.18
Wages of laborers	285.67
Cost of new loft placed in storehouse	150.00
Total	5,700.64

The work in the storehouse during the year has been carried on with efficiency and economy under the direction of the shipping and supply clerk, to whom my thanks are due for his careful administration of this branch of the work. The card record showing daily balances as used in the office has been initiated in

the storehouse with the same satisfactory results. The storehouse record is checked with the office record, and stock is checked by actual count against this record. This is done at stated intervals.

Thanking you for the interest you have taken in the establishment and maintenance of a correct system of accounting and recording and for the consideration shown to suggestions made for the betterment of the service, I remain,

Very respectfully, yours,

C. O. LORD,
Chief of Division.

The COMMISSIONER OF EDUCATION, *San Juan, P. R.*

EXHIBIT IV.

DIVISION OF SCHOOL EXTENSION.

DEPARTMENT OF EDUCATION OF PORTO RICO,
OFFICE OF THE COMMISSIONER,
San Juan, September 29, 1905.

SIR: I have the honor to submit a report of the work done in this division during the fiscal year ending June 30, 1905, as follows:

Although the number of buildings completed during this year has been very small, the work of the division has been fully taken up in the preparation of plans and in the supervision of the construction of buildings which are now nearing completion.

Among the plans prepared has been one for a frame building to cost about $500. A number of school boards have requested plans for a building of this kind and have submitted propositions in which they offer to construct one or two of these buildings, provided the Department will also construct one or two of the same kind of buildings in their district. The school boards have also offered to provide the sites for these buildings, but it is very hard to secure land, especially in the country districts, with a clear title.

Besides the regular school extension work, this division has been in charge of the alteration and repair work being done at the San Francisco Barracks, San Juan, which is to be used by the high and grammar school; the cost of this work will be about $6,500. Repairs and alterations to the old military barracks at Aguadilla, which will cost $750. Repairs and improvements on the graded school building at Fajardo, to cost about $2,000.

Of the buildings now under construction nearly all of them will be ready for occupancy the coming school year. Owing to what has really been a lumber famine on the island, almost all of these buildings have been somewhat delayed.

The high and grammar school building now under construction at Ponce is the last of the buildings provided for in the allotment "Ponce schoolhouses," aggregating $53,800.

There are a number of school boards and municipalities which have requested that school buildings be erected in their districts on the same plan as that followed by the department in the past two or three years, of allowing them to repay a proportionate part of the cost to the department in monthly or yearly installments. As these requests come, in some cases, from municipalities which were re-created by the last legislative assembly and which have no school buildings in their principal towns, some special effort should be made to comply with them. As no appropriation has ever been made from insular revenues for school extension work, it would perhaps be advisable that such an item be placed in the next budget presented to the legislature.

Herewith are lists showing school buildings completed and under construction during the last fiscal year.

Respectfully,

A. M. LYONS, *Chief of Division.*

The COMMISSIONER OF EDUCATION,
San Juan, Porto Rico.

Buildings completed during fiscal year 1904–5.

	Allotment.	Total cost.
Rio Piedras, 6 rooms, brick	$13,000.00	$11,385.60
Lajas, 3 rooms, brick and stone	7,500.00	5,633.90
Rural building: Coamo, 1 room, frame		1,780.00

Graded buildings being constructed or under contract.

	Allotment.
Juana Díaz, 6 rooms, brick	$12,000.00
Yabucoa, 6 rooms, brick and stone	13,000.00
Ponce, 12 rooms, brick	20,045.77
Patillas, 3 rooms, frame	3,000.00
Isabela, 4 rooms, frame	4,000.00
Rural building: Santa Isabel, 1 room, frame	

Buildings for which bids have been advertised and buildings for which plans are being prepared.

	Allotment.
Maricao, 4 rooms, frame	$5,000.00
Cataño, 4 rooms, brick	9,000.00
Las Marias, 4 rooms, frame	5,000.00
Rural building: Aguirre, 1 room, frame	

Exhibit V.

SUPERINTENDENT OF EXAMINATIONS.

Department of Education of Porto Rico,
Office of the Commissioner,
San Juan, October 3, 1905.

Sir: Previous to the 1st of October, 1903, no attempt had been made to systemize the examinations for teacher's certificate held by the department. The need of teachers to take charge of the new schools opened each year was a good reason for holding examinations whenever the commissioner of education believed it necessary to do so. The examination questions were sent to the superintendents of the school districts where the examinations were to be held, and the papers of the candidates were corrected by a committee of qualified persons appointed by the commissioner.

The first examination for the common school diploma was held in the year 1903, the examination papers being corrected in the towns where the examination took place by committees appointed by the superintendents of the respective districts.

On October 1, 1903, the office of superintendent of examinations was established. It was the duty of the superintendent to prepare the questions for all the examinations to be held by the department, to make arrangements for the proper conducting of examinations in all school districts, and to correct and mark the examination papers. The object desired in the establishment of this position was to attain a greater degree of uniformity in the examinations.

This system was not altogether satisfactory, in that it imposed on the superintendent of examinations labor involving too great detail, both in the preparation of questions and in the examination of results. Therefore the commissioner of education, on December 15, 1904, ordered the following rules and regulations to be followed in the conduct of future examinations:

1. The general supervision of all examinations held by the department, excepting so far as expressly modified by these regulations, shall be in charge of the examining superintendent.

2. The examining superintendent shall be chairman of an examining board which shall, in addition, consist of the chief of the division of supervision and statistics of the department, the principal of the insular normal school, the principal of the central high school of Porto Rico at San Juan, and the superintendent of schools for the district of San Juan.

3. It shall be the duty of the said examining board to assist the examining superintendent in (*a*) preparation of questions for examinations (*b*) arrangement of schedules for examinations, (*c*) marking and correction of papers, (*d*) such other matters as may be referred to it by the examining superintendent.

4. The examining superintendent shall require the action of the board as such in the approval of questions proposed for examinations. In all other matters he may in his discretion avail himself of the cooperation of the members of the board as individuals without submitting the matters involved to formal action of the board, unless he deems this necessary.

5. The examining superintendent may, with the approval of the commissioner of education, hold special examinations without consulting the board. The department will determine what examinations are to be considered special, with reference to the urgency of such examinations and the number of applicants.

6. The examining superintendent shall report upon the results of all examinations held by the department within a period of not more than twenty days from the receipt of the papers relative to said examinations in San Juan, and not more than thirty days from the last day on which said examination was held. To carry out this regulation he should require from district superintendents and others the utmost dispatch in the transmission of the papers. He may, whenever necessary to carry out the provisions of this regulation, in addition to the cooperation of the examining board, call upon the assistance of other duly qualified persons connected with the department of education.

The examinations held December 27, 28, and 29, 1904, and all the examinations held during the year 1905, were conducted in accordance with these rules. The result attained in these, as in previous examinations, was poor. Some of the reasons for this are noted in the following quotations from the partial reports which I had the honor to submit to you after each examination:

"While 39 out of 120 candidates passed the examination," I said September 29, 1904, referring to the examination for common school diploma, "yet only 7 obtained the 75 per cent general average required by the department, the balance falling under that mark."

"As you see by the above the result of this examination is still poorer than that held last June. The work submitted by the examinees, pupils of the seventh and eighth grade of the public schools, shows clearly a lack of preparation in their studies. This is due, in my opinion, to the fact that most of these pupils came from the former Spanish schools, and many others only entered school at the very beginning of the establishment of the American system of education, when the teachers were entirely unfamiliar with the new methods and all was confusion and dissatisfaction."

And regarding the examination for licenses for rural teachers held December 27, 28, and 29, 1904:

"Although the questions in general were not very difficult and the test was a fair one, only 7 out of the 123 passed the examination successfully. As in previous examinations, most of the candidates, especially in Mayaguez, were children of the seventh and eighth grades of our public schools, and this, perhaps, explains the poor results obtained in the present case."

And then under date of May 10, 1905:

"As in former examinations, many pupils below the eighth grade of the public schools presented themselves for examination, and this explains the small percentage of successful candidates. The board believes it necessary to take some steps to prevent these children from applying for a rural license without having studied the eighth grade of the public schools."

A manual for examinations, designed to answer all questions which may arise concerning examinatons and admission of candidates, has been prepared and will soon be published by the department.

As some of the members of the examining board were unable by reason of their positions properly to attend to the correction and marking of examination papers, the board at a meeting held September 14 resolved to recommend cer-

tain changes to be introduced in the rules and regulations for conducting the examinations of the department. The revised rules, as approved by the commissioner, read as follows:

1. The general supervision of all examinations held by the department, excepting so far as expressly modified by these regulations, shall be in charge of the superintendent of examinations.

2. The superintendent of examinations shall be chairman of an examining board which shall in addition consist of the chief of division of supervision and statistics of the department, the principal of the insular normal school, the principal of the central high school of Porto Rico at San Juan, and the superintendent of schools for the district of San Juan.

3. It shall be the duty of the said examining board to assist the superintendent of examinations in (*a*) preparation of questions for examinations; (*b*) revision of papers in case of appeal on the part of the examinee or of the examining board; (c) such other matters as may be referred to it by the superintendent of examinations.

4. The superintendent of examinations shall require the action of the board as such in the approval of questions proposed for examinations. In all other matters he may, in his discretion, avail himself of the cooperation of the members of the board as individuals without submitting the matters involved to formal action of the board, unless he deems this necessary.

5. For the marking and correction of papers, the superintendent of examinations may, whenever necessary, call for assistance upon teachers or other duly qualified persons either connected with or approved by the department of education.

6. The superintendent of examinations may, with the approval of the commissioner of education, hold special examinations without consulting the board. The department will determine what examinations are to be considered special, with reference to the urgency of such examinations and the number of applicants.

7. The superintendent of examinations shall report upon the results of all examinations held by the department within a period of not more than twenty days from the receipt of the papers relative to said examination in San Juan, and not more than thirty days from the last day on which said examination was held. To carry out this regulation he should require from district superintendents and others the utmost dispatch in the transmission of the papers.

Respectfully submitted.

ENRIQUE C. HERNANDEZ,
Superintendent of Examinations.

THE COMMISSIONER OF EDUCATION,
San Juan, Porto Rico.

EXHIBIT VI.

DIVISION OF SUPERVISION AND STATISTICS.

DEPARTMENT OF EDUCATION OF PORTO RICO,
OFFICE OF THE COMMISSIONER,
San Juan, September 26, 1905.

SIR: I beg to submit herewith the annual report of this division:

Changes of some importance were introduced in the tabulation of statistics during the past year, though these changes involved the omission or suppression of tables, or parts of them, heretofore regarded as necessary, rather than any radical departure from the previous method of compilation of statistics of enrollment and attendance; otherwise this division has adhered closely to the general plan and method of presentation followed the previous year. While it is perhaps the function of this division merely to present statistical tables to your consideration, without comment and irrespective of results and showings therein contained, I would say that it has observed closely throughout the course of the past year the fluctuation of enrollment and attendance in the different districts and municipalities, and has in all cases cooperated actively with superintendents, teachers, and school boards to secure the favorable increase over last year to be noted in the schools of the island. I am also confident that our corps of superintendents has never previously made such united, continual, and per-

sistent efforts to maintain both enrollment and attendance at the point required by law, and chiefly to their constant endeavors in this direction is due the improvement apparent, especially in many of the rural districts.

At the beginning of the year a series of visits to the different districts was planned, which, had I been able to carry them out, would have enabled me to spend from two to four days in conference and consultation with the different superintendents. Various things interfered to prevent the projected tours of inspection from being made in all cases, though I am glad to say that the following districts were visited and conditions as found, both material and professional, commented on verbally and in writing to the superintendents: Aguadilla, Aibonito, Bayamon, Carolina, Coamo, Fajardo, Humacao, Mayaguez, Ponce, San Sebastian, Yauco.

These visits, made primarily with the intention of securing first-hand information of conditions in the different districts, and secondly, with the purpose of acquainting the superintendents with work and conditions as they were to be found in the neighboring districts, have accomplished this end, and, in addition, have in some cases served as a means of offering no little stimulus and encouragement to superintendents. These tours of visitation proved to be extremely pleasant in character and for the first time, I think, the Department was brought in direct contact to this extent with its field employees. I am also able to report that some of the defects and irregularities noted by me in schools and surroundings were subsequently corrected, and a few of the superintendents have communicated to this division the fact that the visits were found instrumental in improving conditions of their districts in a third sense, which was that of being able to offer in many cases no little help and assistance to them in their relations with the school boards. Naturally the major part of the correspondence had by this division with the superintendents refers principally to matters relating to questions of supervision and statistics, and such correspondence, while not voluminous, has served during the past year more than during the previous to eliminate and reduce to a minimum point the difficulties and handicaps which previously retarded the prompt and ready collection of statistics; this apart from other matters of a purely supervisory nature.

I have also to report that the different statistical and professional forms under the charge of this division were made uniform during the course of the past year, whenever this was possible, and at the present time it is believed that report cards, professional and statistical forms, blanks, etc., have been devised to meet all requirements wherein these might be needed. The plan previously followed of exchanging district circular letters was also continued, and I am informed by many of the district superintendents that they were enabled thereby to secure many useful and valuable suggestions of plans and practices in vogue in other districts, besides having been able to familiarize themselves with those points and matters which were being given greater emphasis, or causing more difficulty in other schools of the island. A complete file of these district circular letters has been gathered by this division and is on file in this office. During the course of the year this division has also intervened directly in the preparation of different programmes and pamphlets, as programme of superintendents' conference at Ponce, course of English for Porto Rican teachers, programme of teachers' conferences, text-book report, etc.

In conclusion, allow me to state that I am greatly pleased at being able to present the statistics of enrollment and attendance at this time, since they might have been delayed beyond this date, due to the numerous changes which have taken place in the force of this division, had not the greatest assiduity and perseverance, as well as intelligence, been shown by the different employees who have superseded one another during the year as statistical clerk. Complete statistics were nevertheless tabulated this year earlier than any year previous, and the fidelity to duty of my assistants, as well as the exactness of their work, may be gathered from the above fact.

Respectfully submitted.

L. R. Sawyer, *Chief of Division.*

The Commissioner of Education,
San Juan, P. R.

STATISTICAL TABLES.

TABLE I.—*Aggregate number of days attendance of all pupils and aggregate number of days actual teaching, common schools and special schools.*

School year 1904–5.

COMMON SCHOOLS.

School district.	Municipality.	Aggregate number of days attendance.			Aggregate number of days actual teaching.		
		Graded.	Rural.	Total.	Graded.	Rural.	Total.
1	San Juan	340,405.0	53,549.0	393,954.0	9,486.5	1,351.5	10,838.0
	Rio Piedras	39,145.5	51,003.5	90,149.0	974.0	1,241.5	2,215.5
	District	379,550.5	104,552.5	484,103.0	10,460.5	2,593.0	13,053.5
2	Carolina	64,713.0	84,218.0	148,931.0	1,349.0	2,099.0	3,448.0
	Rio Grande	61,039.0	141,522.5	202,561.5	1,361.0	2,623.0	3,984.0
	District	125,752.0	225,740.5	351,492.5	2,710.0	4,722.0	7,432.0
3	Fajardo	112,400.0	58,906.0	171,306.0	2,584.0	1,278.0	3,862.0
	Naguabo	21,041.0	40,972.0	62,013.0	457.5	855.0	1,312.5
	Vieques, Culebra	36,393.0	27,775.0	64,168.0	829.0	735.0	1,564.0
	District	169,834.0	127,653.0	297,487.0	3,870.5	2,868.0	6,738.5
4	Humacao	67,143.5	60,146.0	127,289.5	1,732.5	1,505.0	3,237.5
	Yabucoa	43,830.0	60,132.0	103,962.0	1,011.0	1,364.0	2,375.0
	Patillas	12,980.5	31,484.0	44,464.5	340.0	691.0	1,031.0
	District	123,954.0	151,762.0	275,716.0	3,083.5	3,560.0	6,643.5
5	Caguas	106,734.0	102,215.0	208,949.0	2,540.5	2,589.0	5,129.5
	San Lorénzo	57,485.0	38,922.0	96,407.0	1,453.5	1,264.0	2,717.5
	Aguas Buenas	12,981.5	25,557.0	38,538.5	413.0	628.0	1,041.0
	District	177,200.5	166,694.0	343,894.5	4,407.0	4,481.0	8,888.0
6	Guayama	126,651.0	73,590.0	200,241.0	2,836.5	1,787.0	4,623.5
	Cayey	86,722.5	63,906.0	150,628.5	2,103.5	1,599.0	3,702.5
	District	213,373.5	137,496.0	350,869.5	4,940.0	3,386.0	8,326.0
7	Aibonito	40,690.0	44,990.5	85,680.5	1,009.5	1,113.0	2,122.5
	Comerio	29,261.0	43,591.0	72,852.0	734.0	1,134.0	1,868.0
	Barros	41,430.5	79,779.0	121,209.5	1,003.0	1,888.0	2,891.0
	District	111,381.5	168,360.5	279,742.0	2,746.5	4,135.0	6,881.5
8	Coamo	78,053.5	116,407.0	194,460.5	1,645.0	2,517.0	4,162.0
	Juana Diaz	46,759.0	79,679.0	126,438.0	1,072.5	1,802.0	2,874.5
	Santa Isabel	30,345.5	25,287.0	55,632.5	685.0	660.0	1,345.0
	District	155,158.0	221,373.0	376,531.0	3,402.5	4,979.0	8,381.5
9	Ponce	308,665.0	260,030.0	568,695.0	7,946.5	6,560.0	14,506.5
10	Yauco	100,250.5	82,665.5	182,916.0	2,321.5	1,874.0	4,195.5
	Sabana Grande	59,309.0	50,270.0	109,579.0	1,359.0	1,180.0	2,539.0
	District	159,559.5	132,935.5	292,495.0	3,680.5	3,054.0	6,734.5
11	San German	90,246.5	90,141.0	180,387.5	2,184.5	2,317.0	4,501.5
	Lajas	19,940.5	56,459.0	76,399.5	443.5	1,303.0	1,746.5
	Cabo Rojo	66,872.0	77,376.0	144,248.0	1,453.0	1,832.0	3,285.0
	District	177,059.0	223,976.0	401,035.0	4,081.0	5,452.0	9,533.0
12	Mayaguez	174,190.5	131,364.0	305,554.5	4,121.5	3,216.0	7,337.5
	Añasco	70,257.0	69,869.0	140,126.0	1,692.5	1,704.0	3,396.5
	Maricao	16,921.0	27,152.0	44,073.0	444.0	811.0	1,255.0
	District	261,368.5	228,385.0	489,753.5	6,258.0	5,731.0	11,989.0
13	Aguadilla	99,328.0	109,989.0	209,317.0	2,818.0	2,757.0	5,575.0
	Aguada	26,614.0	35,467.0	62,081.0	671.5	903.0	1,574.5
	Isabela	35,942.0	69,566.0	105,508.0	858.0	1,526.0	2,384.0
	District	161,884.0	215,022.0	376,906.0	4,347.5	5,186.0	9,533.5

TABLE I.—*Aggregate number of days attendance of all pupils and aggregate number of days actual teaching, common schools and special schools*—Continued.

COMMON SCHOOLS—Continued.

School district	Municipality.	Aggregate number of days attendance.			Aggregate number of days actual teaching.		
		Graded.	Rural.	Total.	Graded.	Rural.	Total.
14	San Sebastian	46,577.0	71,839.0	118,416.0	995.0	1,780.0	2,775.0
	Lares	35,490.0	58,452.0	93,942.0	837.0	1,711.0	2,548.0
	Las Marias	10,287.0	45,718.0	56,005.0	344.0	1,373.0	1,717.0
	District	92,354.0	176,009.0	268,363.0	2,176.0	4,864.0	7,040.0
15	Utuado	72,433.5	135,950.0	208,383.5	1,699.0	3,338.0	5,037.0
	Adjuntas	45,523.5	61,738.0	107,261.5	1,182.5	1,507.0	2,689.5
	District	117,957.0	197,688.0	315,645.0	2,881.5	4,845.0	7,726.5
16	Arecibo	130,499.0	159,078.0	289,577.0	3,160.0	3,679.0	6,839.0
	Camuy	80,593.0	81,828.0	162,421.0	2,035.5	1,823.0	3,858.5
	District	211,092.0	240,906.0	451,998.0	5,195.5	5,502.0	10,697.5
17	Manati	78,075.0	89,488.5	167,563.5	1,665.5	1,992.0	3,657.5
	Ciales	35,389.5	55,929.0	91,318.5	841.0	1,187.0	2,028.0
	Morovis	14,866.5	51,339.0	66,205.5	329.0	1,149.0	1,479.0
	District	128,331.0	196,756.5	325,087.5	2,835.5	4,328.0	7,163.5
18	Toa Alta	72,541.5	76,415.0	148,956.5	1,704.0	1,668.0	3,372.0
	Vega Baja	70,760.5	76,438.0	147,198.5	1,526.5	1,753.0	3,279.5
	District	143,302.0	152,853.0	296,155.0	3,230.5	3,421.0	6,651.5
19	Bayamon	146,735.0	207,240.0	353,975.0	4,062.5	5,221.0	9,283.5
	Total	3,364,511.0	3,535,432.5	6,899,943.5	83,315.5	84,888.0	167,203.5

SPECIAL SCHOOLS (HIGH AND INDUSTRIAL).

	Aggregate number days attendance.		Aggregate number days actual teaching.	
	High schools.	Industrial schools.	High schools.	Industrial schools.
San Juan	7,908.0	19,103.5	171	173
Guayama	.....	12,379.5	.....	167
Ponce	6,172.5	20,821.5	173	173
Mayaguez	4,234.5	13,116.5	173	174
Arecibo	.....	16,827.5	.....	175
Total	18,315.0	82,248.5	517	862

TABLE I.—*Aggregate number of days attendance of all pupils and aggregate number of days actual teaching, common schools and special schools*—Continued.

SPECIAL SCHOOLS (NIGHT SCHOOLS).

	Aggregate number days attendance.	Aggregate number days actual teaching.		Aggregate number days attendance.	Aggregate number days actual teaching.
San Juan	16,208	520	San German	3,460	154
			Lajas	2,788	155
Carolina	2,268	83			
Rio Grande	3,988	146	District	6,248	309
District	6,256	229	Mayaguez	4,774	155
			Añasco	5,000	155
Fajardo	4,510	130			
Naguabo	5,156	154	District	9,774	310
District	9,666	284	Aguadilla	4,588	153
Humacao	4,023	150	San Sebastian	5,518	163
			Lares	4,515	151
Caguas	3,819	150			
San Lorenzo	807	39	District	10,033	314
District	4,626	189	Utuado	5,082	148
			Adjuntas	480	10
Guayama	7,193	151			
Caycy	5,586	146	District	5,562	158
District	12,779	297	Arecibo	2,436	80
Aibonito	1,513	81	Manati	3,998	147
Coamo	4,062	149	Toa Alta	2,622	85
Juana Diaz	5,756	170			
			Bayamon	3,589	156
District	9,818	319			
			Island	154,105	4,985
Ponce	22,079	757			
Yauco	10,742	290			
Sabana Grande	7,645	157			
District	18,387	447			

SPECIAL SCHOOLS (AGRICULTURAL).

Locality.	Aggregate number days attendance.	Aggregate number days actual teaching.	Locality.	Aggregate number days attendance.	Aggregate number days actual teaching.
Carolina	5,767	171	Cabo Rojo	7,901	172
Guayama	5,712	172	Camuy	6,635	171
Barros	14,065	329	Toa Alta	8,685	172
Ponce	5,779	168	Bayamon	7,636	172
Sabana Grande	7,547	171			
Lajas	7,697	171	Total	77,424	1,869

TABLE II.—*Average daily enrollment, average daily attendance, and average number of days actual teaching per school for the common schools and for each respective class of special schools.*

1st Term, 1904–5.

COMMON SCHOOLS.

School district.	Locality.	Average daily enrollment per school.		Average daily attendance per school.		Per cent attendance.		Average number days actual teaching per school.	
		Municipality.	District.	Municipality.	District.	Municipality.	District.	Municipality.	District.
1	San Juan	42.18		39.40		93.43		61.48	
	Rio Piedras	43.91		38.20		86.94		55.67	
			43.04		38.80		90.19		58.57
2	Carolina	48.71		44.21		90.76		60.32	
	Rio Grande	55.74		51.40		92.21		61.02	
			52.23		47.80		91.48		60.67
3	Fajardo	48.15		42.88		89.05		61.40	
	Naguabo	50.85		47.31		93.04		57.20	
	Vieques	49.16		41.61		84.64		59.13	
	Culebra	28.34		25.49		89.95		59.50	
			44.12		39.31		89.17		56.80
4	Humacao	46.15		36.29		78.63		55.63	
	Yabucoa	45.41		40.67		89.56		57.83	
	Patillas	42.41		37.17		87.64		59.90	
			44.65		38.04		85.27		57.82
5	Caguas	45.76		39.90		87.19		60.44	
	San Lorenzo	40.73		33.34		81.85		53.72	
	Aguas Buenas	43.77		37.68		86.08		50.58	
			43.42		36.97		85.04		54.91
6	Guayama	48.25		40.56		84.06		59.07	
	Cayey	43.31		36.94		85.29		57.10	
			45.78		38.75		84.67		58.08
7	Aibonito	45.76		40.57		88.65		57.87	
	Comerio	43.72		38.37		87.76		61.18	
	Barros	45.16		41.13		91.07		60.90	
			44.88		40.02		89.16		57.98
8	Coamo	51.19		45.92		89.71		59.41	
	Juana Diaz	48.66		42.66		88.35		61.08	
	Santa Isabel	46.79		41.53		88.76		55.55	
			48.88		44.55		88.94		55.34
9	Ponce	37.80		33.65		89.01		59.89	
			37.80		33.65		89.01		59.89
10	Yauco	45.04		39.53		87.78		58.29	
	Sabana Grande	45.86		40.21		87.68		60.96	
			45.45		39.87		87.73		59.63
11	San German	44.54		38.35		86.08		59.68	
	Lajas	49.73		45.36		93.24		59.31	
	Cabo Rojo	51.28		44.97		87.69		58.10	
			48.51		42.89		89.00		59.03
12	Mayaguez	45.38		40.71		89.71		60.78	
	Añasco	45.58		40.77		89.47		62.15	
	Maricao	31.50		28.09		89.14		55.20	
			40.82		36.52		89.44		59.37
13	Aguadilla	44.93		38.08		84.75		62.70	
	Aguada	44.43		38.57		86.81		62.25	
	Isabela	52.16		46.05		88.09		62.78	
			47.17		40.90		86.55		62.57
14	San Sebastian	44.91		38.70		86.17		62.25	
	Lares	37.92		32.36		85.33		60.15	
	Las Marias	31.00		25.04		80.77		62.00	
			37.94		32.03		84.09		61.47
15	Utuado	47.76		40.81		85.45		61.50	
	Adjuntas	41.95		35.53		84.69		60.55	
			44.85		38.17		85.07		61.02
16	Arecibo	49.42		43.95		88.93		59.38	
	Camuy	50.22		43.68		85.80		61.53	
			49.82		43.81		87.37		60.45
17	Manati	50.24		45.06		89.68		60.67	
	Ciales	48.30		49.86		86.45		57.57	
	Morovis	50.31		43.11		85.69		58.21	
			47.95		43.67		87.27		58.81
18	Toa Alta	47.49		42.50		87.61		54.09	
	Vega Baja	52.12		44.88		86.10		60.45	
			48.80		43.69		86.85		57.27
19	Bayamon	44.72		38.07		85.13		57.74	
			44.72		38.07		85.13		57.74
	Island		45.31		39.86		87.44		58.79

TABLE II.—*Average daily enrollment, average daily attendance, and average number of days actual teaching per school for the common schools and for each respective class of special schools*—Continued.

SPECIAL SCHOOLS (HIGH AND INDUSTRIAL).

Locality.	Average daily enrollment per school.		Average daily attendance per school.		Average number days actual teaching per school.	
	High schools.	Industrial schools.	High schools.	Industrial schools.	High schools.	Industrial schools.
San Juan	50.16	127.09	48.87	118.13	62	62
Guayama	.....	101.19	.....	88.06	.....	57
Ponce	42.51	125.16	39.79	109.44	62	62
Mayaguez	32.23	111.45	29.52	92.89	62	62
Arecibo	.....	116.16	.....	99.06	.....	63
Island	41.63	116.21	39.73	101.51	62	61.2

SPECIAL SCHOOLS (NIGHT SCHOOLS).

Locality.	Average daily enrollment per school.	Average daily attendance per school.	Average number days actual teaching per school.	Locality.	Average daily enrollment per school.	Average daily attendance per school.	Average number days actual teaching per school.
San Juan	38.23	33.63	40.33	San German	45.43	29.28	46.00
				Lajas	26.17	23.41	46.00
Rio Grande	38.20	36.69	45.00				
				District	35.80	26.34	46.00
Fajardo	42.73	34.69	45.00				
Naguabo	34.54	32.35	46.00	Mayaguez	31.87	27.43	46.00
				Añasco	37.00	31.94	47.00
District	38.63	33.52	45.50				
				District	34.43	29.68	46.50
Humacao	59.00	32.66	47.00				
				Aguadilla	44.00	33.62	48.00
Caguas	32.30	26.52	44.00				
San Lorenzo	20.06	23.88	41.00	San Sebastian	44.58	35.32	62.00
				Lares	43.14	24.42	43.00
District	26.18	25.20	42.50				
				District	43.86	29.87	52.50
Guayama	62.04	49.40	47.00				
Cayey	47.34	41.20	44.00	Utuado	57.48	39.50	40.00
				Adjuntas	59.00	48.00	10.00
District	54.69	45.30	45.50				
				District	58.24	43.75	25.00
Coamo	46.17	37.60	40.00				
Juana Diaz	44.43	36.37	60.00	Manati	55.32	46.02	47.00
District	45.30	36.98	50.00	Bayamon	44.34	35.68	47.00
Ponce	31.50	28.18	46.20	Island	43.65	35.04	44.76
Yauco	52.16	42.45	37.50				
Sabana Grande	49.21	44.64	47.00				
District	50.68	43.54	42.25				

TABLE II.—*Average daily enrollment, average daily attendance, and average number of days actual teaching per school for the common schools and for each respective class of special schools*—Continued.

SPECIAL SCHOOLS (AGRICULTURAL).

Including reënrollments.

Locality.	Average daily enrollment per school.	Average daily attendance per school.	Average number days actual teaching per school.	Locality.	Average daily enrollment per school.	Average daily attendance per school.	Average number days actual teaching per school.
Carolina	46.96	35.81	62.00	Cabo Rojo	54.69	44.63	61.00
Guayama	42.50	30.50	62.00	Camuy	44.25	38.90	62.00
Barros	18.59	43.98	60.50	Toa Alta	58.49	52.20	61.00
Ponce	26.51	24.16	57.00	Bayamon	48.72	44.46	61.00
Sabana Grande	39.93	36.61	61.00				
Lajas	45.20	.....	.....	Island	45.10	43.99	60.83

SPECIAL SCHOOLS (ISLAND).

	Aggregate number days attendance.	Aggregate number days actual teaching.	Average daily enrollment per school.	Average daily attendance per school.	Average number days actual teaching per school.
High schools	7,328.5	186.0	41.63	39.73	62.00
Industrial	31,128.5	306.0	116.21	101.51	61.20
Night	48,371.0	1,415.0	43.65	35.04	44.76
Agricultural	26,731.5	669.0	45.10	43.99	60.83
Island	113,559.5	2,576.0	61.65	55.07	57.19
Common schools (island)	2,405,639.5	58,512.5	45.31	39.86	58.79
All schools (island)	2,519,199.0	61,088.5	53.48	47.46	57.99

TABLE II.—*Average daily enrollment, average daily attendance, and average number of days actual teaching per school for the common schools and for each respective class of special schools*—Continued.

Second Term, 1904–5.

COMMON SCHOOLS.

School district.	Locality.	Average daily enrollment per school.		Average daily attendance per school.		Per cent attendance.		Average number days actual teaching per school.	
		Municipality.	District.	Municipality.	District.	Municipality.	District.	Municipality.	District.
1	San Juan	39.25		36.09		91.94		66.43	
	Rio Piedras	46.65		40.70		87.24		66.07	
			40.57		36.90		90.95		66.37
2	Carolina	49.55		40.65		82.04		61.59	
	Rio Grande	56.02		48.70		86.93		61.42	
			52.97		44.92		84.80		61.50
3	Fajardo	50.47		45.18		89.51		59.40	
	Naguabo	55.78		48.78		87.45		58.28	
	Vieques	51.37		43.64		84.95		59.22	
	Culebra	39.00		31.44		80.06		65.00	
			51.44		45.25		87.96		59.24
4	Humacao	46.61		40.31		86.48		60.39	
	Yabucoa	49.76		46.34		93.12		65.64	
	Patillas	51.04		41.31		80.93		65.28	
			48.88		42.58		89.36		62.95
5	Caguas	48.14		41.22		85.62		65.06	
	San Lorenzo	45.59		36.00		79.19		63.38	
	Aguas Buenas	43.43		36.21		83.37		63.50	
			46.79		39.00		83.35		64.34
6	Guayama	50.82		45.11		88.76		63.42	
	Cayey	46.95		42.25		89.98		62.04	
			49.15		43.83		89.17		62.78
7	Aibonito	46.03		41.28		89.68		63.70	
	Comerio	45.62		39.83		87.30		54.69	
	Barros	48.34		42.41		87.73		62.93	
			46.89		41.37		88.23		60.72
8	Coamo	52.96		47.72		90.10		64.40	
	Juana Diaz	51.63		44.44		86.07		56.95	
	Santa Isabel	48.85		42.44		86.87		58.66	
			51.84		46.06		88.81		60.77
9	Ponce	46.12		42.25		91.60		64.15	
			46.12		42.25		91.60		64.15
10	Yauco	51.29		45.96		89.60		63.36	
	Sabana Grande	49.67		44.58		89.75		65.60	
			50.66		45.42		89.65		64.17
11	San German	46.57		40.87		87.76		64.79	
	Lajas	50.28		44.27		88.04		62.00	
	Cabo Rojo	50.32		43.48		86.40		61.99	
			48.53		42.38		87.32		63.29
12	Mayaguez	48.74		42.09		88.40		64.58	
	Añasco	49.27		40.98		83.17		65.70	
	Maricao	42.81		38.76		90.54		65.37	
			48.44		41.39		85.44		65.12
13	Aguadilla	48.37		37.64		77.81		63.29	
	Aguada	47.36		40.70		85.93		56.95	
	Isabela	53.06		44.31		83.50		65.21	
			49.42		39.80		80.53		62.66
14	San Sebastian	48.67		40.78		83.79		64.83	
	Lares	46.36		40.06		86.41		60.46	
	Las Marias	47.69		37.94		79.55		66.90	
			47.53		39.84		83.82		63.69
15	Utuado	51.11		43.12		84.36		64.52	
	Adjuntas	48.91		42.77		87.46		61.26	
			50.70		42.99		84.79		63.35
16	Arecibo	49.79		41.31		82.97		62.98	
	Camuy	50.52		42.23		83.59		64.08	
			50.04		42.23		84.39		63.36
17	Manati	53.84		46.08		85.62		62.54	
	Ciales	52.55		47.47		90.33		56.71	
	Morovis	56.20		46.90		83.45		65.88	
			53.93		46.73		86.65		61.40
18	Toa Alta	55.56		45.42		81.75		65.15	
	Vega Baja	52.09		45.56		87.46		63.00	
			53.85		45.10		83.77		64.07
19	Bayamon	46.13		38.20		82.81		65.47	
			46.13		38.20		82.81		65.47
	Island		48.59		42.88		88.25		63.34

TABLE II.—*Average daily enrollment, average daily attendance, and average number of days actual teaching per school for the common schools and for each respective class of special schools*—Continued.

SPECIAL SCHOOLS (HIGH AND INDUSTRIAL).

Locality.	Average daily enrollment per school.		Average daily attendance per school.		Average number days actual teaching per school.	
	High schools.	Industrial schools.	High schools.	Industrial schools.	High schools.	Industrial schools.
San Juan	46.92	124.60	45.58	113.61	67	67
Guayama	.....	82.50	.....	72.47	.....	66
Ponce	37.94	135.36	35.79	128.20	67	67
Mayaguez	25.31	102.05	23.26	79.12	67	68
Arecibo	.....	115.28	.....	94.10	.....	68
Island	36.72	107.39	34.88	97.63	67	67.20

SPECIAL SCHOOLS (NIGHT SCHOOLS).

Locality.	Average daily enrollment per school.	Average daily attendance per school.	Average number days actual teaching per school.	Locality.	Average daily enrollment per school.	Average daily attendance per school.	Average number days actual teaching per school.
San Juan	33.99	31.14	56.50	Yauco	42.35	34.84	64.00
				Sabana Grande	54.30	50.42	66.00
Carolina	38.05	31.28	40.00				
Rio Grande	30.93	23.05	59.00	District	46.50	40.16	65.00
District	33.88	26.37	49.50	San German	34.34	21.42	64.00
				Lajas	26.32	17.57	65.00
Fajardo	41.96	33.33	45.00	District	30.30	19.68	64.50
Naguabo	36.56	33.24	68.00				
District	38.70	33.27	56.50	Mayaguez	35.44	28.39	65.00
				Añasco	36.81	30.92	65.00
Humacao	36.75	24.45	60.00	District	36.13	29.67	65.00
Caguas	33.44	24.14	63.00	Aguadilla	37.43	26.34	68.00
San Lorenzo	23.73	19.43	64.00				
District	28.55	21.81	63.50	San Sebastian	41.09	30.65	61.00
				Lares	44.64	33.95	64.00
Guayama	58.66	42.65	63.00	District	42.91	32.47	62.50
Cayey	41.78	37.04	64.00				
District	50.15	41.24	63.50	Utuado	50.00	35.04	65.00
				Arecibo	36.87	31.02	39.00
Aibonito	20.00	19.62	40.00				
				Manati	29.14	19.64	56.00
Coamo	27.28	22.98	66.00				
Juana Diaz	35.39	32.63	65.00	Toa Alta	42.21	37.07	42.00
District	31.37	27.18	65.50	Bayamon	32.84	16.37	67.00
Ponce	36.19	31.26	62.80	Island	37.03	29.99	59.59

TABLE II.—*Average daily enrollment, average daily attendance, and average number of days actual teaching per school for the common schools and for each respective class of special schools*—Continued.

SPECIAL SCHOOLS (AGRICULTURAL).

Locality.	Average daily enrollment per school.	Average daily attendance per school.	Average number days actual teaching per school.	Locality.	Average daily enrollment per school.	Average daily attendance per school.	Average number days actual teaching per school.
Carolina	41.80	32.04	65.00	Cabo Rojo	56.13	45.50	66.50
Guayama	44.19	36.59	66.00	Camuy	46.42	39.34	67.00
Barros	48.31	43.66	63.00	Toa Alta	58.57	50.38	67.00
Ponce	42.09	39.58	67.00	Bayamon	50.91	45.25	67.00
Sabana Grande	50.87	47.55	67.00				
Lajas	61.78	46.75	67.00	Island	49.46	44.05	65.91

SPECIAL SCHOOLS (ISLAND).

	Aggregate number days attendance.	Aggregate number days actual teaching.	Average daily enrollment per school.	Average daily attendance per school.	Average number days actual teaching per school.
High schools	7,012.0	201	36.72	34.88	67.00
Industrial	32,806.0	336	107.39	97.63	67.20
Night	64,228.0	2,145	37.03	29.99	59.59
Agricultural	31,937.5	725	49.46	44.05	65.91
Island	135,983.5	3,407	46.60	38.71	64.92
Common schools, island	2,741,435.0	65,378	48.59	42.88	63.34
All schools, island	2,877,418.5	68,785	47.59	40.79	64.13

Third term, 1904-5.

COMMON SCHOOLS.

School district.	Locality.	Average daily enrollment per school.		Average daily attendance per school.		Per cent attendance.		Average number days actual teaching per school.	
		Municipality.	District.	Municipality.	District.	Municipality.	District.	Municipality.	District.
1	San Juan	36.79		33.86		90.88		43.85	
	Rio Piedras	46.66		40.82		87.88		43.39	
			38.49		35.04		89.25		43.77
2	Carolina	49.09		41.34		85.03		41.02	
	Rio Grande	49.89		44.87		88.76		43.98	
			50.65		43.33		85.93		42.63
3	Fajardo	54.66		47.89		86.41		41.89	
	Naguabo	57.52		49.81		85.21		40.25	
	Vieques, Culebra	47.81		43.06		89.82		41.11	
			53.65		46.16		87.02		39.89
4	Humacao	46.58		39.68		85.17		40.79	
	Yabucoa	49.95		46.47		93.36		42.44	
	Patillas	48.96		37.38		78.19		42.44	
			48.13		42.17		85.65		41.61
5	Caguas	46.42		39.78		84.45		43.22	
	San Lorenzo	43.32		38.81		77.45		43.12	
	Aguas Buenas	44.08		37.94		85.35		34.14	
			45.29		37.67		82.41		42.04
6	Guayama	49.62		43.12		87.14		42.07	
	Cayey	46.92		41.99		89.34		42.08	
			48.37		42.57		88.21		42.26
7	Aibonito	43.17		38.68		89.44		41.65	
	Comerio	45.29		37.92		87.75		43.91	
	Barros	47.03		41.84		89.32		42.94	
			44.90		39.77		88.84		42.94
8	Coamo	52.26		46.67		89.86		42.68	
	Juana Diaz	51.60		44.49		86.47		40.94	
	Santa Isabel	47.69		39.74		83.37		40.50	
			51.33		44.87		86.66		41.60

TABLE II.—*Average daily enrollment, average daily attendance, and average number of days actual teaching per school for the common schools and for each respective class of special schools*—Continued.

COMMON SCHOOLS—Continued.

School district.	Locality.	Average daily enrollment per school.		Average daily attendance per school.		Per cent attendance.		Average number days actual teaching per school.	
		Municipality.	District.	Municipality.	District.	Municipality.	District.	Municipality.	District.
9	Ponce	45.83	45.83	40.16	40.16	90.58	90.58	42.78	42.78
10	Yauco	50.48		44.85		87.95		41.46	
	Sabana Grande	48.73	49.81	42.61	43.93	86.29	87.15	42.63	41.90
11	San German	47.10		40.23		85.43		43.79	
	Lajas	52.45		44.20		85.24		43.64	
	Cabo Rojo	48.00	48.45	42.26	41.73	88.49	86.38	43.45	43.66
12	Mayaguez	47.34		41.89		88.23		42.82	
	Añasco	47.63		42.68		89.52		42.42	
	Maricao	46.91	47.37	41.26	42.15	88.36	88.75	42.29	43.22
13	Aguadilla	46.77		39.37		84.38		40.76	
	Aguada	46.16		39.48		83.47		42.66	
	Isabela	52.32	48.09	41.02	39.81	78.08	82.50	42.29	41.45
14	San Sebastian	47.08		40.63		87.80		42.06	
	Lares	47.64		41.72		88.74		42.53	
	Las Marias	45.03	46.82	37.57	40.32	84.23	87.03	42.70	42.37
15	Utuado	50.18		42.06		85.43		41.77	
	Adjuntas	48.32	49.33	41.75	41.91	86.69	86.04	42.83	42.12
16	Arecibo	47.66		41.18		86.57		42.37	
	Camuy	47.99	47.74	38.73	40.33	78.38	84.48	42.06	42.28
17	Manati	53.35		46.36		87.39		42.89	
	Ciales	52.32		42.06		81.54		42.84	
	Morovis	54.62	54.62	46.05	45.03	82.53	83.84	42.22	42.78
18	Toa Alta	55.19		44.54		80.61		43.37	
	Vega Baja	51.37	53.36	45.48	44.38	88.56	84.44	42.56	42.97
19	Bayamon	44.08	44.08	37.29	37.29	84.79	84.79	41.88	41.88
	Total		47.59		41.26		86.06		42.34

SPECIAL SCHOOLS (HIGH AND INDUSTRIAL).

Locality.	Average daily enrollment per school.		Average daily attendance per school.		Average number days actual teaching per school.	
	High schools.	Industrial schools.	High schools.	Industrial schools.	High schools.	Industrial schools.
San Juan	44.47	105.29	42.93	94.20	42.00	44.00
Guayama		65.19		58.54		44.00
Ponce	31.02	128.00	29.70	123.70	44.00	44.00
Mayaguez	20.68	86.48	19.18	67.17	44.00	44.00
Arecibo		106.00		95.18		44.00
Island	31.87	99.11	30.42	88.67	43.33	44.00

TABLE II.—*Average daily enrollment, average daily attendance, and average number of days actual teaching per school for the common schools and for each respective class of special schools*—Continued.

SPECIAL SCHOOLS (NIGHT).

Locality.	Average daily enrollment per school.	Average daily attendance per school.	Average number days actual teaching per school.	Locality.	Average daily enrollment per school.	Average daily attendance per school.	Average number days actual teaching per school
San Juan	33.76	29.49	43.25	Sabana Grande	56.59	50.43	44.00
Carolina	31.60	23.65	43.00	District	45.33	39.04	43.66
Rio Grande	28.00	23.26	42.00				
District	29.82	23.46	42.50	San German	26.81	16.86	44.00
				Lajas	22.91	17.57	44.00
Fajardo	45.60	36.23	40.00	District	23.74	16.48	44.00
Naguabo	37.00	35.20	40.00				
District	40.13	35.71	40.00	Mayaguez	42.14	37.90	44.00
				Añasco	40.00	35.09	43.00
Humacao	31.00	23.74	43.00	District	41.08	36.50	43.50
Caguas	36.14	26.30	43.00	Aguadilla	39.14	31.07	44.00
San Lorenzo	30.00	20.69	39.00				
District	33.22	23.63	41.00	San Sebastian	46.05	36.45	40.00
				Lares	40.64	28.61	44.00
Guayama	57.24	48.88	41.00	District	43.43	32.34	42.00
Cayey	40.00	36.89	38.00				
District	48.06	43.11	39.50	Utuado	43.00	28.47	43.00
				Arecibo	36.29	29.90	41.00
Aibonito	18.00	17.75	41.00				
				Manati	25.00	16.25	44.00
Coamo	25.88	24.18	44.00				
Juana Diaz	37.00	31.70	44.00	Toa Alta	29.79	22.44	43.00
District	31.46	27.94	44.00	Bayamon	24.40	18.93	42.00
Ponce	31.56	27.03	42.40	Island	35.04	28.76	42.22
Yauco	39.63	33.28	43.50				

SPECIAL SCHOOLS (AGRICULTURAL).

Locality.	Average daily enrollment per school.	Average daily attendance per school.	Average number days actual teaching per school.	Locality.	Average daily enrollment per school.	Average daily attendance per school.	Average number days actual teaching per school.
Carolina	40.00	33.27	44.00	Cabo Rojo	45.85	42.47	44.00
Guayama	39.59	31.95	44.00	Camuy	47.97	38.97	42.00
Barros	42.56	38.91	42.00	Toa Alta	53.70	48.31	44.00
Ponce	41.00	39.77	44.00	Bayamon	49.75	43.00	44.00
Sabana Grande	52.00	49.49	43.00				
Lajas	54.77	50.45	44.00	Total	46.37	41.42	43.36

SPECIAL SCHOOLS (ISLAND).

	Aggregate number days attendance.	Aggregate number days actual teaching.	Average daily enrollment per school.	Average daily attendance per school.	Average number days actual teaching per school.
High schools	3,954.0	130.0	31.87	30.42	43.33
Industrial	19,308.0	220.0	99.11	88.67	44.00
Night	44,004.0	1,530.0	35.04	28.76	42.22
Agricultural	19,768.0	477.0	46.37	41.42	43.36
Island	87,034.0	2,357.0	43.05	32.64	42.86
Common schools, island	1,759,277.5	42,635.0	47.59	41.26	42.34
All schools, island	1,846,311.5	44,992.0	45.32	36.95	42.60

TABLE II.—*Average daily enrollment, average daily attendance, and average number of days actual teaching per school for the common schools and for each respective class of special schools*—Continued.

School year, 1904–5.

COMMON SCHOOLS.

School district.	Locality.	Average daily enrollment per school.		Average daily attendance per school.		Per cent attendance.		Average number days actual teaching per school.	
		Municipality.	District.	Municipality.	District.	Municipality.	District.	Municipality.	District.
1	San Juan	40.09		32.66		90.89		169.19	
	Rio Piedras	46.30		40.68		87.41		158.25	
			40.61		37.08		89.05		167.35
2	Carolina	48.74		41.33		84.79		156.73	
	Rio Grande	55.01		50.84		92.42		153.23	
			52.09		46.43		91.05		154.83
3	Fajardo	50.02		44.35		87.76		152.48	
	Naguabo	52.85		47.25		89.12		145.83	
	Vieques, Culebra	47.85		41.03		85.66		151.28	
			50.07		44.15		87.58		149.75
4	Humacao	46.29		39.32		84.91		147.16	
	Yabucoa	48.09		43.77		91.34		158.33	
	Patillas	54.14		43.22		81.64		147.14	
			48.12		41.47		85.88		150.99
5	Caguas	47.15		40.73		87.13		165.47	
	San Lorenzo	44.70		35.47		80.29		143.26	
	Aguas Buenas	43.54		37.02		86.59		148.71	
			46.10		37.70		84.04		155.93
6	Guayama	49.84		40.35		86.61		165.19	
	Cayey	45.85		40.68		88.52		154.27	
			48.07		42.14		87.64		160.11
7	Aibonito	44.63		40.37		90.70		163.27	
	Comerio	44.48		39.53		88.18		143.69	
	Barros	46.70		41.93		90.61		160.61	
			45.45		40.65		89.44		156.48
8	Coamo	52.19		46.72		89.01		166.48	
	Juana Diaz	49.03		42.59		87.66		151.29	
	Santa Isabel	47.71		41.36		86.27		149.44	
			50.89		44.92		88.05		158.21
9	Ponce	43.39		39.20		90.34		162.98	
			43.39		39.20		90.34		162.98
10	Yauco	49.01		43.59		88.74		149.84	
	Sabana Grande	48.38		43.12		89.20		169.27	
			48.78		43.43		88.96		156.62
11	San German	46.08		40.07		86.99		166.72	
	Lajas	50.63		43.75		87.84		167.87	
	Cabo Rojo	49.29		43.91		89.24		164.25	
			48.02		42.06		88.05		164.37
12	Mayaguez	46.93		41.65		88.45		166.76	
	Añasco	46.91		41.26		87.87		169.87	
	Maricao	39.34		35.12		90.05		156.87	
			46.11		40.85		88.73		166.51
13	Aguadilla	46.54		37.55		80.64		163.98	
	Aguada	45.92		39.43		86.18		143.14	
	Isabela	52.63		44.26		83.94		170.29	
			47.96		39.53		83.92		161.61
14	San Sebastian	50.15		42.67		86.74		154.11	
	Lares	43.41		36.87		85.06		159.25	
	Las Marias	39.35		32.62		80.03		171.70	
			45.08		38.12		84.65		168.64
15	Utuado	49.61		41.39		83.57		167.90	
	Adjuntas	45.61		39.88		91.25		164.08	
			48.22		40.85		87.72		164.59
16	Arecibo	48.91		42.34		86.55		159.05	
	Camuy	50.06		40.21		84.17		167.00	
			49.35		42.26		85.34		162.02
17	Manatí	52.37		45.82		86.25		166.25	
	Ciales	51.69		45.02		87.23		156.00	
	Morovis	53.09		44.79		84.16		164.22	
			52.33		45.38		85.99		162.81
18	Toa Alta	51.79		44.15		85.21		153.37	
	Vega Baja	51.23		44.88		87.12		163.97	
			51.66		44.51		86.34		158.42
19	Bayamon	45.67		38.13		83.81		160.06	
			45.67		38.13		83.81		160.06
	Total		47.29		41.27		86.90		158.88

TABLE II.—*Average daily enrollment, average daily attendance, and average number of days actual teaching per school for the common schools and for each respective class of special schools*—Continued.

SPECIAL SCHOOLS (HIGH AND INDUSTRIAL).

Locality.	Average daily enrollment per school.		Average daily attendance per school.		Average number days actual teaching per school.	
	High schools.	Industrial schools.	High schools.	Industrial schools.	High schools.	Industrial schools.
San Juan	47.44	120.27	46.24	109.62	171	173
Guayama	.....	84.77	.....	74.13	.....	167
Ponce	37.82	129.74	35.67	120.45	173	173
Mayaguez	26.61	91.21	24.48	75.30	173	174
Arecibo	.....	113.25	.....	96.15	.....	175
Island	39.20	108.29	35.42	97.74	172.33	172.40

SPECIAL SCHOOLS (NIGHT SCHOOLS).

Locality.	Average daily enrollment per school.	Average daily attendance per school.	Average number days actual teaching per school.
San Juan	34.89	31.17	130.00
Carolina	34.71	27.32	83.00
Rio Grande	31.91	27.67	146.00
District	33.19	27.32	114.50
Fajardo	43.35	34.69	130.00
Naguabo	36.01	33.48	154.00
District	39.40	34.03	142.00
Humacao	42.07	26.82	150.00
Caguas	33.88	25.46	150.00
San Lorenzo	27.04	20.69	39.00
District	32.46	24.53	94.50
Guayama	59.33	47.63	151.00
Cayey	42.99	38.26	146.00
District	51.30	43.03	148.50
Aibonito	18.98	18.67	81.00
Coamo	31.93	27.26	149.00
Juana Diaz	39.00	33.71	170.00
District	35.70	30.78	159.50
Ponce	33.47	29.17	151.40
Yauco	47.86	37.05	145.00
Sabana Grande	53.42	48.69	157.00
District	49.85	41.13	151.00
San German	35.50	22.46	154.00
Lajas	24.15	18.00	155.00
District	29.81	20.22	154.50
Mayaguez	36.28	30.80	155.00
Añasco	37.74	32.26	155.00
District	37.01	31.53	155.00
Aguadilla	39.98	29.99	153.00
San Sebastian	43.75	33.85	163.00
Lares	43.05	29.68	151.00
District	43.41	31.95	157.00
Utuado	49.99	34.32	148.00
Adjuntas	59.00	40.00	10.00
District	50.56	35.20	79.00
Arecibo	36.57	30.45	80.00
Manati	36.27	27.20	147.00
Toa Alta	35.93	29.67	85.00
Bayamon	34.03	23.00	156.00
Island	38.52	30.91	134.73

TABLE II.—*Average daily enrollment, average daily attendance, and average number of days actual teaching per school for the common schools and for each respective class of special schools*—Continued.

SPECIAL SCHOOLS (AGRICULTURAL).

Locality.	Average daily enrollment per school.	Average daily attendance per school.	Average number days actual teaching per school.	Locality.	Average daily enrollment per school.	Average daily attendance per school.	Average number days actual teaching per school.
Carolina	43.21	33.72	171.00	Cabo Rojo	50.77	45.93	172.00
Guayama	42.41	33.21	172.00	Camuy	46.01	38.81	171.00
Barros	47.18	42.75	164.50	Toa Alta	56.92	50.27	172.00
Ponce	36.52	34.40	168.00	Bayamon	49.89	44.39	172.00
Sabana Grande	47.25	44.13	171 00				
Lajas	50.35	45.01	171.00	Island	47.13	41.43	169.91

SPECIAL SCHOOLS (ISLAND).

	Aggregate number days attendance.	Aggregate number days actual teaching.	Average daily enrollment per school.	Average daily attendance per school.	Average number days actual teaching per school.
High schools	18,315	517	39.20	35.42	172.33
Industrial	82,248.5	862	108.29	97.74	172.40
Night	154,105	4,985	38.52	30.91	134.73
Agricultural	77,424	1,869	47.13	41.43	169.91
Island	332,092.5	8,233	47.70	40.34	147.02
Common schools, island	6,899,943.5	167,203.5	47.29	41.27	158.88
All schools, island	7,232,036	175,436.5	47.49	40.81	152.95

TABLE III.—*Average number of pupils taught each day, common schools and special schools, by municipalities and school districts and for the island, showing the averages for the common schools and for each class of special schools, and total averages for the same for the island.*

First term, 1904–5.

COMMON SCHOOLS AND SPECIAL SCHOOLS.

School district.	Locality.	Common schools.		High schools.	Industrial schools.	Night schools.		Agricultural.	
		Municipality.	District.			Municipality.	District.	Municipality.	District.
1	San Juan	2,401.20		48.87	118.13	100.91		.....	
	Rio Piedras	536.10		.....	.....	.....		.....	
			2,937.30	.....	.....		100.91		
2	Carolina	914.59		.....	.....	.....		35.81	
	Rio Grande	1,304.24		.....	.....	38.69		.....	
			2,218.83				38.69		35.81
3	Fajardo	984.85		.....	.....	34.69		.....	
	Naguabo	370.28		.....	.....	32.35		.....	
	Vieques	335.75		.....	.....	.....		.....	
	Culebra	50.88		.....	.....	.....		.....	
			1,741.76				67.04		
4	Humacao	725.80		.....	.....	32.66		.....	
	Yabucoa	609.24		.....	.....	.....		.....	
	Patillas	253.76		.....	.....	.....		.....	
			1,588.80				32.66		
5	Caguas	1,197.00		.....	.....	26.52		.....	
	San Lorenzo	600.03		.....	.....	23.88		.....	
	Aguas Buenas	266.60		.....	.....	.....		.....	
			2,063.63				50.40		
6	Guayama	1,158.59		.....	88.06	49.40		30.50	
	Cayey	778.27		.....	.....	41.20		.....	
			1,936.86				90.60		30.50
7	Aibonito	527.36		.....	.....	.....		.....	
	Comerio	418.85		.....	.....	.....		.....	
	Barros	696.32		.....	.....	.....		87.96	
			1,642.53						87.96
8	Coamo	1,142.30		.....	.....	37.60		.....	
	Juana Diaz	758.70		.....	.....	36.37		.....	
	Santa Isabel	372.69		.....	.....	.....		.....	
			2,273.69				73.97		
9	Ponce	2,887.33	2,887.33	39.79	109.44	140.89	140.89	24.16	24.16
10	Yauco	1,071.27		.....	.....	84.90		.....	
	Sabana Grande	606.99		.....	.....	44.64		36.61	
			1,678.26				129.54		36.61
11	San German	1,031.24		.....	.....	29.28		.....	
	Lajas	432.18		.....	.....	23.41		39.08	
	Cabo Rojo	894.76		.....	.....	.....		50.19	
			2,358.18				52.69		89.27
12	Mayaguez	1,804.76		29.52	92.89	27.43		.....	
	Añasco	815.40		.....	.....	31.94		.....	
	Maricao	214.78		.....	.....	.....		.....	
			2,834.94				59.37		
13	Aguadilla	1,294.89		.....	.....	33.62		.....	
	Aguada	382.18		.....	.....	.....		.....	
	Isabela	649.27		.....	.....	.....		.....	
			2,326.34				33.62		
14	San Sebastian	658.38		.....	.....	35.32		.....	
	Lares	449.00		.....	.....	24.42		.....	
	Las Marias	234.86		.....	.....	.....		.....	
			1,342.24				59.74		
15	Utuado	1,198.70		.....	.....	39.50		.....	
	Adjuntas	566.88		.....	.....	48.00		.....	
			1,765.58				87.50		
16	Arecibo	1,802.94		.....	99.06	.....		.....	
	Camuy	1,002.77		.....	.....	.....		38.09	
			2,805.71						38.09
17	Manati	988.24		.....	.....	46.02		.....	
	Ciales	500.97		.....	.....	.....		.....	
	Morovis	371.06		.....	.....	.....		.....	
			1,860.27				46.02		
18	Toa Alta	893.27		.....	.....	.....		52.20	
	Vega Baja	893.77		.....	.....	.....		.....	
			1,787.04						52.20
19	Bayamon	2,172.41	2,172.41	.....	.....	35.68	35.68	44.46	44.46
	Total		40,221.70	118.18	505.58	.....	1,099.32	.....	439.06

TABLE III.—*Average number of pupils taught each day, common schools and special schools, by municipalities and school districts and for the island, showing the averages for the common schools and for each class of special schools, and total averages for the same for the island*—Continued.

Second term, 1904–5.

COMMON SCHOOLS AND SPECIAL SCHOOLS.

School district.	Locality.	Common schools.		High schools.	Industrial schools.	Night schools.		Agricultural.	
		Municipality.	District.			Municipality.	District.	Municipality.	District.
1	San Juan	2,310.48		45.58	113.61	125.80			
	Rio Piedras	571.28							
			2,881.76				125.80		
2	Carolina	893.08				31.28		32.04	
	Rio Grande	1,219.67				23.05			
			2,112.75				54.33		32.04
3	Fajardo	1,132.11				33.33			
	Naguabo	440.76				33.23			
	Vieques	392.31							
	Culebra	31.44							
			1,996.62				66.56		
4	Humacao	848.10				24.45			
	Yabucoa	648.80							
	Patillas	289.15							
			1,786.05				24.45		
5	Caguas	1,277.71				24.14			
	San Lorenzo	611.47				19.43			
	Aguas Buenas	253.80							
			2,142.98				43.57		
6	Guayama	1,264.58			72.47	42.65		36.59	
	Cayey	1,013.64				37.04			
			2,278.22				79.69		36.59
7	Aibonito	548.78				19.62			
	Comerio	521.32							
	Barros	764.88						87.32	
			1,834.98				19.62		87.32
8	Coamo	1,190.55				22.98			
	Juana Diaz	844.42				32.63			
	Santa Isabel	380.73							
			2,415.70				55.61		
9	Ponce	3,760.55	3,760.55	35.79	128.20	155.40	155.40	39.58	39.58
10	Yauco	1,149.56				69.69			
	Sabana Grande	668.62				50.42		47.55	
			1,818.18				120.11		47.55
11	San German	1,100.58				21.42			
	Lajas	486.96				17.57		46.75	
	Cabo Rojo	868.91						44.24	
			2,456.45				38.99		90.99
12	Mayaguez	1,811.14		23.26	79.12	28.39			
	Añasco	819.00				30.92			
	Maricao	309.35							
			2,939.49				59.31		
13	Aguadilla	1,280.78				26.34			
	Aguada	400.00							
	Isabela	620.57							
			2,301.35				26.34		
14	San Sebastian	733.38				30.65			
	Lares	639.85				33.95			
	Las Marias	379.28							
			1,752.51				64.60		
15	Utuado	1,292.20				35.04			
	Adjuntas	729.62							
			2,021.82				35.04		
16	Arecibo	1,760.33			94.10	31.02			
	Camuy	973.76						39.34	
			2,734.09				31.02		39.34
17	Manati	1,013.88				19.64			
	Ciales	670.18							
	Morovis	422.17							
			2,106.23				19.64		
18	Toa Alta	909.20				37.07		50.38	
	Vega Baja	899.36							
			1,808.56				37.07		50.38
19	Bayamon	2,197.23	2,197.23			16.37	16.37	45.25	45.25
	Total		43,345.52	104.63	487.50		1,073.52		469.04

TABLE III.—*Average number of pupils taught each day, common schools and special schools, by municipalities and school districts and for the island, showing the averages for the common schools and for each class of special schools and total averages for the same for the island*—Continued.

Third term, 1904–5.

COMMON SCHOOLS AND SPECIAL SCHOOLS.

School district.	Locality.	Common schools.		High schools.	Industrial schools.	Night schools.		Agricultural.	
		Municipality.	District.			Municipality.	District.	Municipality.	District.
1	San Juan	2,133.53		42.93	94.12	117.77		.....	
	Rio Piedras	530.48		.....	.....	.....		.....	
			2,664.01				117.77		
2	Carolina	824.12		.....	.....	24.35		33.27	
	Rio Grande	1,076.56		.....	.....	23.26		.....	
			1,900.68				47.61		33.27
3	Fajardo	1,101.53		.....	.....	36.23		.....	
	Naguabo	395.54		.....	.....	35.20		.....	
	Vieques	387.94		.....	.....	.....		.....	
	Culebra	.....		.....	.....	.....		.....	
			1,885.01				71.43		
4	Humacao	832.28		.....	.....	23.74		.....	
	Yabucoa	651.04		.....	.....	.....		.....	
	Patillas	261.62		.....	.....	.....		.....	
			1,744.94				23.74		
5	Caguas	1,233.37		.....	.....	26.30		.....	
	San Lorenzo	572.59		.....	.....	20.69		.....	
	Aguas Buenas	250.64		.....	.....	.....		.....	
			2,056.60				46.99		
6	Guayama	1,207.35		.....	58.56	48.88		31.95	
	Cayey	1,007.79		.....	.....	36.89		.....	
			2,215.14				85.77		31.95
7	Aibonito	500.41		.....	.....	17.75		.....	
	Comerio	417.71		.....	.....	.....		.....	
	Barros	710.96		.....	.....	.....		87.81	
			1,629.08				17.75		87.81
8	Coamo	1,166.65		.....	.....	24.18		.....	
	Juana Diaz	757.06		.....	.....	31.70		.....	
	Santa Isabel	314.72		.....	.....	.....		.....	
			2,238.43				55.88		
9	Ponce	3,700.64	3,700.64	29.70	123.70	136.53	136.53	39.77	39.77
10	Yauco	1,122.05		.....	.....	66.44		.....	
	Sabana Grande	636.80		.....	.....	50.43		49.49	
			1,758.85				116.87		49.49
11	San German	1,045.85		.....	.....	16.84		.....	
	Lajas	486.29		.....	.....	17.57		50.45	
	Cabo Rojo	846.41		.....	.....	.....		42.47	
			2,378.55				34.41		92.92
12	Mayaguez	1,843.44		19.17	67.07	37.90		.....	
	Añasco	853.80		.....	.....	35.09		.....	
	Maricao	288.74		.....	.....	.....		.....	
			2,985.98				72.99		
13	Aguadilla	1,300.99		.....	.....	31.07		.....	
	Aguada	355.20		.....	.....	.....		.....	
	Isabela	574.39		.....	.....	.....		.....	
			2,230.58				31.07		
14	San Sebastian	732.60		.....	.....	36.45		.....	
	Lares	667.19		.....	.....	28.61		.....	
	Las Marias	375.72		.....	.....	.....		.....	
			1,775.51				65.06		
15	Utuado	1,266.70		.....	.....	28.47		.....	
	Adjuntas	668.36		.....	.....	.....		.....	
			1,929.06				28.47		
16	Arecibo	1,770.73		.....	95.18	29.90		.....	
	Camuy	900.09		.....	.....	.....		38.97	
			2,670.82				29.90		38.97
17	Manati	1,020.14		.....	.....	16.25		.....	
	Ciales	549.61		.....	.....	.....		.....	
	Morovis	413.06		.....	.....	.....		.....	
			1,982.81				16.25		
18	Toa Alta	890.40		.....	.....	22.44		48.31	
	Vega Baja	864.02		.....	.....	.....		.....	
			1,754.42				22.44		48.31
19	Bayamon	2,045.15	2,045.15	.....	.....	18.93	18.93	43.00	43.00
	Total	.....	41,546.26	91.80	438.63	.....	1,039.86	.....	465.49

TABLE III.—*Average number of pupils taught each day, common schools and special schools, by municipalities and school districts and for the island, showing the averages for the common schools and for each class of special schools and total averages for the same for the island*—Continued.

School year, 1904–5.

COMMON SCHOOLS AND SPECIAL SCHOOLS.

School district.	Locality.	Common schools.		High schools.	Industrial schools.	Night schools.		Agricultural.	
		Municipality.	District.			Municipality.	District.	Municipality.	District.
1	San Juan	2,326.24		46.24	109.62	126.29			
	Rio Piedras	569.86							
			2,896.10				126.29		
2	Carolina	907.28				27.32		33.72	
	Rio Grande	1,329.82				27.67			
			2,237.10				54.99		33.72
3	Fajardo	1,110.65				34.69			
	Naguabo	425.49				33.48			
	Vieques	446.24							
	Culebra								
			1,982.38				68.17		
4	Humacao	865.81				26.82			
	Yabucoa	656.82							
	Patillas	303.46							
			1,826.09				26.82		
5	Caguas	1,261.83				25.46			
	San Lorenzo	663.85				21.04			
	Aguas Buenas	257.05							
			2,182.73				46.50		
6	Guayama	1,212.03			74.13	47.63		33.21	
	Cayey	975.42				38.26			
			2,187.45				85.89		33.21
7	Aibonito	525.16				18.67			
	Comerio	506.87							
	Barros	754.86						85.54	
			1,786.89				18.67		85.54
8	Coamo	1,168.25				27.26			
	Juana Diaz	835.84				33.71			
	Santa Isabel	368.75							
			2,372.84				60.97		
9	Ponce	3,489.15	3,489.15	35.67	120.45	145.44	145.44	34.40	34.40
10	Yauco	1,221.50				72.64			
	Sabana Grande	647.32				48.69		44.13	
			1,868.82				121.33		44.13
11	San German	1,081.63				22.46			
	Lajas	481.58				18.00		45.01	
	Cabo Rojo	877.50						45.93	
			2,440.71				40.46		90.94
12	Mayaguez	1,831.00		24.48	75.30	30.80			
	Añasco	819.80				32.26			
	Maricao	281.73							
			2,932.53				63.06		
13	Aguadilla	1,277.38				29.99			
	Aguada	433.41							
	Isabela	619.67							
			2,330.46				29.99		
14	San Sebastian	765.18				33.85			
	Lares	587.76				29.68			
	Las Marias	326.12							
			1,679.06				63.53		
15	Utuado	1,235.90				34.32			
	Adjuntas	679.13				48.00			
			1,915.03				82.32		
16	Arecibo	1,822.27			96.15	30.45			
	Camuy	968.98						38.87	
			2,791.25				30.45		38.87
17	Manati	995.24				27.20			
	Ciales	587.36							
	Morovis	403.21							
			1,985.81				27.20		
18	Toa Alta	975.64				59.51		50.27	
	Vega Baja	896.46							
			1,872.10				59.51		50.27
19	Bayamon	2,212.77	2,212.77			23.00	23.00	44.39	44.39
	Total		42,989.27	106.39	475.65		1,174.59		455.47

TABLE IV.—*Table showing per cent increase in average enrollment per school and average daily attendance per school by municipality and district, school years 1903–4 and 1904–5.*

School year 1904–5.

COMMON SCHOOLS.

School district.	Locality.	Average enrollment per school.			Average daily attendance per school.		
		1904–5.	1903–4.	Increase (+) or decrease (−).	1904–5.	1903–4.	Increase (+) or decrease (−).
1	San Juan	52.00	50.87	+0.02	32.66	33.29	−0.01
	Rio Piedras	62.22	61.29	+ .02	40.68	37.86	+ .07
	District	53.83	48.98	+ .09	37.08	34.03	+ .08
2	Carolina	61.25	59.48	+ .03	41.33	39.46	+ .07
	Rio Grande	64.66	64.77	− .002	50.84	46.26	+ .09
	District	62.98	61.00	+ .07	46.43	43.06	+ .07
3	Fajardo	63.56	61.70	+ .05	44.35	44.30	+ .001
	Naguabo	67.55	64.00	+ .05	47.25	44.61	+ .06
	Vieques, Culebra	62.34	66.40	− .08	41.03	36.76	+ .11
	District	64.36	60.43	+ .06	44.15	42.64	+ .03
4	Humacao	57.19	57.00	+ .003	39.32	36.02	+ .08
	Yabucoa	57.20	50.13	+ .11	43.77	45.08	− .03
	Patillas	63.28	50.00	+ .21	43.22	32.40	+ .25
	District	58.16	53.27	+ .09	41.47	38.52	+ .07
5	Caguas	61.50	61.76	− .004	40.73	38.37	+ .06
	San Lorenzo	55.84	58.24	− .04	35.47	33.02	+ .07
	Aguas Buenas	55.15	56.57	− .03	37.02	35.60	+ .04
	District	58.73	58.80	− .01	37.70	36.26	+ .04
6	Guayama	63.89	60.43	+ .06	40.35	44.55	− .09
	Cayey	63.96	60.28	+ .06	40.68	37.60	+ .08
	District	63.90	60.36	+ .06	42.14	39.24	+ .07
7	Aibonito	60.77	61.31	− .01	40.37	37.95	+ .06
	Comerio	53.38	48.42	+ .09	39.53	39.53	+ .02
	Barros	56.77	51.90	+ .09	41.93	39.15	+ .07
	District	56.95	53.63	+ .06	40.65	38.62	+ .05
8	Coamo	62.28	61.87	+ .01	46.72	43.83	+ .08
	Juana Diaz	59.95	63.50	− .06	42.59	44.38	− .04
	Santa Isabel	64.00	65.87	− .02	41.36	40.14	+ .03
	District	61.73	63.10	− .02	44.92	43.54	+ .03
9	Ponce	65.89	49.76	+ .24	39.20	36.47	+ .07
10	Yauco	60.78	53.27	+ .12	43.59	38.37	+ .10
	Sabana Grande	62.07	52.27	+ .16	43.12	42.53	+ .01
	District	61.26	52.93	+ .14	43.43	39.92	+ .08
11	San German	58.37	54.32	+ .07	40.07	35.96	+ .11
	Lajas	69.64	59.00	+ .15	43.75	41.43	+ .05
	Cabo Rojo	63.30	66.59	− .05	43.91	40.66	+ .07
	District	62.22	59.23	+ .05	42.06	37.86	+ .10
12	Mayaguez	70.20	62.10	+ .12	41.65	33.39	+ .20
	Añasco	72.15	53.58	+ .26	41.26	35.83	+ .13
	Maricao	62.87	64.71	− .03	35.12	32.35	+ .08
	District	72.71	60.16	+ .17	40.85	33.91	+ .17
13	Aguadilla	60.47	58.81	+ .03	37.55	35.71	+ .05
	Aguada	56.00	49.90	+ .11	39.43	28.51	+ .27
	Isabela	59.29	69.71	− .15	44.26	41.34	+ .07
	District	59.37	59.94	− .01	39.53	35.85	+ .09

TABLE IV.—*Table showing per cent increase in average enrollment per school and average daily attendance per school by municipality and district, school years 1903–4 and 1904–5*—Continued.

COMMON SCHOOLS—Continued.

School district.	Locality.	Average enrollment per school.			Average daily attendance per school.		
		1904–5.	1903–4.	Increase (+) or decrease (−).	1904–5.	1903–4.	Increase (+) or decrease (−).
14	San Sebastian	60.61	62.77	− .03	42.67	36.06	+ .15
	Lares	65.81	62.19	+ .06	36.87	35.06	+ .04
	Las Marias	63.60	56.55	+ .11	32.62	26.24	+ .19
	District	63.19	61.00	+ .03	38.12	33.22	+ .13
15	Utuado	62.10	61.10	+ .02	41.39	35.49	+ .14
	Adjuntas	61.35	56.25	+ .08	39.88	35.34	+ .11
	District	61.83	59.38	+ .04	40.85	35.44	+ .13
16	Arecibo	62.49	54.16	+ .13	42.34	37.15	+ .12
	Camuy	62.69	59.75	+ .05	40.21	44.45	− .10
	District	62.58	54.52	+ .13	42.26	39.83	+ .06
17	Manati	61.32	65.83	− .07	45.82	43.02	+ .06
	Ciales	63.92	69.50	− .08	45.02	35.12	+ .23
	Morovis	63.44	65.44	− .03	44.79	41.83	+ .07
	District	64.79	66.98	− .03	45.38	40.26	+ .22
18	Toa Alta	63.50	62.60	+ .01	44.15	38.15	+ .14
	Vega Baja	67.75	60.10	+ .11	44.88	39.62	+ .11
	District	65.52	61.35	+ .06	44.51	39.15	+ .22
19	Bayamon	57.25	56.04	+ .02	38.13	33.86	+ .11
	Total	61.26	56.65	+ .08	41.27	37.75	+ .09

SPECIAL SCHOOLS (ISLAND).

High schools	50.33	37.33	+0.26	35.42	28.84	+0.19
Industrial	159.00	151.00	+ .05	97.74	89.97	+ .08
Night	73.65	67.15	+ .09	30.91	30.48	+ .01
Agricultural	61.09	60.93	+ .01	41.43	36.24	+ .03
Island	77.55	69.26	+ .11	40.34	37.01	+ .08

TABLE V (A1).—*Distribution (pupils) by sex and color, common schools and special schools, including reënrollments.*

School year 1904–5.

COMMON SCHOOLS, BY COLOR.

School district.	Color and locality.	Males.			Females.			Total graded.	Total rural.	Total.
		Graded.	Rural.	Total.	Graded.	Rural.	Total.			
	WHITE.									
1	San Juan	1,008	135	1,143	849	118	967	1,857	253	2,110
	Rio Piedras	123	180	303	112	108	220	235	288	523
	District	1,131	315	1,446	961	226	1,187	2,092	541	2,633
2	Carolina	173	326	499	184	188	372	357	514	871
	Rio Grande	138	390	528	125	240	365	263	630	893
	District	311	716	1,027	309	428	737	620	1,144	1,764
3	Fajardo	345	242	587	353	211	564	698	453	1,151
	Naguabo	105	145	250	81	123	204	186	268	454
	Vieques, Culebra	115	124	239	146	92	238	261	216	477
	District	565	511	1,076	580	426	1,006	1,145	937	2,082
4	Humacao	260	300	560	248	216	464	508	516	1,024
	Yabucoa	119	201	320	105	95	200	224	296	520
	Patillas	41	151	192	53	51	104	94	202	296
	District	420	652	1,072	406	362	768	826	1,014	1,840
5	Caguas	359	369	728	334	278	622	703	647	1,350
	San Lorenzo	239	239	478	223	152	375	462	391	853
	Aguas Buenas	53	144	197	56	75	131	109	219	328
	District	651	752	1,403	623	505	1,128	1,274	1,257	2,531
6	Guayama	325	270	595	239	109	348	564	379	943
	Cayey	382	331	713	360	156	516	742	487	1,229
	District	707	601	1,308	599	265	864	1,306	866	2,172
7	Aibonito	162	197	359	146	139	285	308	336	644
	Comerio	146	243	389	100	93	193	246	336	582
	Barros	172	424	596	102	214	316	274	638	912
	District	480	864	1,344	348	446	794	828	1,310	2,138
8	Coamo	209	401	610	181	267	448	390	668	1,058
	Juana Diaz	153	347	500	122	206	328	275	553	828
	Santa Isabel	102	85	187	84	76	160	186	161	347
	District	464	833	1,297	387	549	936	851	1,382	2,233
9	Ponce	1,222	929	2,151	1,168	742	1,910	2,390	1,671	4,061
10	Yauco	298	425	723	308	246	554	606	671	1,277
	Sabana Grande	268	196	464	209	155	364	477	351	828
	District	566	621	1,187	517	401	918	1,083	1,022	2,105
11	San German	327	303	630	247	261	508	574	564	1,138
	Lajas	131	224	355	114	214	328	245	438	683
	Cabo Rojo	302	326	628	235	225	460	537	551	1,088
	District	760	853	1,613	596	700	1,296	1,356	1,553	2,909
12	Mayaguez	598	653	1,251	509	494	1,003	1,107	1,147	2,254
	Añasco	272	349	621	251	257	508	523	606	1,129
	Maricao	74	142	216	63	82	145	137	224	361
	District	944	1,144	2,088	823	833	1,656	1,767	1,977	3,744
13	Aguadilla	425	599	1,024	302	273	575	727	872	1,599
	Aguada	114	192	306	82	95	177	196	287	483
	Isabela	131	345	476	117	165	282	248	510	758
	District	670	1,136	1,806	501	533	1,034	1,171	1,669	2,840

TABLE V (A1).—*Distribution (pupils) by sex and color, common schools and special schools, including reënrollments*—Continued.

COMMON SCHOOLS, BY COLOR—Continued.

School district.	Color and locality	Males.			Females.			Total graded.	Total rural.	Total.
		Graded.	Rural.	Total.	Graded.	Rural.	Total.			
	WHITE—continued.									
14	San Sebastian	180	449	629	151	228	379	331	677	1,008
	Lares	203	406	609	140	229	367	343	635	978
	Las Marias	57	265	322	52	173	225	109	438	547
	District	440	1,120	1,560	343	630	973	783	1,750	2,533
15	Utuado	278	774	1,052	246	430	676	524	1,204	1,728
	Adjuntas	235	334	569	186	218	404	421	552	973
	District	513	1,108	1,621	432	648	1,080	945	1,756	2,701
16	Arecibo	436	665	1,101	461	443	904	897	1,108	2,005
	Camuy	394	450	844	312	189	501	706	639	1,345
	District	830	1,115	1,945	773	632	1,405	1,603	1,747	3,350
17	Manati	253	370	623	190	239	429	443	609	1,052
	Ciales	188	357	545	153	182	335	341	539	880
	Morovis	83	297	380	45	103	148	128	400	528
	District	524	1,024	1,548	388	524	912	912	1,548	2,460
18	Toa Alta	225	370	595	193	237	430	418	607	1,025
	Vega Baja	332	301	633	292	196	488	624	497	1,121
	District	557	671	1,228	485	433	918	1,042	1,104	2,146
19	Bayamon	465	723	1,188	398	509	907	863	1,232	2,095
	Total white	12,220	15,688	27,908	10,637	9792	20,429	22,857	25,480	48,337
	COLORED.									
1	San Juan	466	151	617	491	110	601	957	261	1,218
	Rio Piedras	82	116	198	54	96	150	136	212	348
	District	548	267	815	545	206	751	1,093	473	1,566
2	Carolina	80	186	266	79	132	211	159	318	477
	Rio Grande	108	341	449	113	220	333	221	561	782
	District	188	527	715	192	352	544	380	879	1,259
3	Fajardo	146	79	225	161	52	213	307	131	438
	Naguabo	18	66	84	13	67	80	31	133	164
	Vieques, Culebra	37	88	125	48	39	87	85	127	212
	District	201	233	434	222	158	380	423	391	814
4	Humacao	70	65	135	55	44	99	125	109	234
	Yabucoa	70	138	208	50	80	130	120	218	338
	Patillas	14	68	82	20	45	65	34	113	147
	District	154	271	425	125	169	294	279	440	719
5	Caguas	133	197	330	93	133	226	226	330	556
	San Lorenzo	47	82	129	40	39	79	87	121	208
	Aguas Buenas	14	26	40	8	10	18	22	36	58
	District	194	305	499	141	182	323	335	487	822
6	Guayama	292	202	494	263	88	351	555	290	845
	Cayey	85	98	183	79	44	123	164	142	306
	District	377	300	677	342	132	474	719	432	1,151
7	Aibonito	52	52	104	24	18	42	76	70	146
	Comerio	40	24	64	36	12	48	76	36	112
	Barros	35	43	78	18	14	32	53	57	110
	District	127	119	146	78	44	122	205	163	368

TABLE V (A1).—*Distribution (pupils) by sex and color, common schools and special schools, including reënrollments*—Continued.

COMMON SCHOOLS, BY COLOR—Continued.

School district.	Color and locality.	Males.			Females.			Total graded.	Total rural.	Total.
		Graded.	Rural.	Total.	Graded.	Rural.	Total.			
	COLORED—continued.									
8	Coamo	154	142	296	120	83	203	274	225	499
	Juana Diaz	60	121	181	71	59	130	131	180	311
	Santa Isabel	48	70	118	51	60	111	99	130	229
	District	262	333	595	242	202	444	504	535	1,039
9	Ponce	605	416	1,021	443	340	783	1,048	756	1,804
10	Yauco	150	129	279	95	51	146	245	180	425
	Sabana Grande	28	34	62	26	15	41	54	49	103
	District	178	163	341	121	66	187	299	229	528
11	San German	140	118	258	90	90	180	230	208	438
	Lajas	13	35	48	7	28	35	20	63	83
	Cabo Rojo	31	69	100	22	56	78	53	125	178
	District	184	222	406	119	174	293	303	396	699
12	Mayaguez	273	167	440	239	156	395	512	323	835
	Añasco	92	54	146	83	85	168	175	139	314
	Maricao	28	59	87	15	40	55	43	99	142
	District	393	280	673	337	281	618	730	561	1,291
13	Aguadilla	118	126	244	134	79	213	252	205	457
	Aguada	39	33	72	26	35	61	65	68	133
	Isabela	14	24	38	13	21	34	27	45	72
	District	171	183	354	173	135	308	344	318	662
14	San Sebastian	29	21	50	19	14	33	48	35	83
	Lares	24	17	41	24	10	34	48	27	75
	Las Marias	2	54	56	5	28	33	7	82	89
	District	55	92	147	48	52	100	103	144	247
15	Utuado	44	43	87	27	21	48	71	64	135
	Adjuntas	16	36	52	8	10	18	24	46	70
	District	60	79	139	35	31	66	95	110	205
16	Arecibo	178	205	383	161	138	299	339	343	682
	Camuy	41	21	62	26	9	35	67	30	97
	District	219	226	445	187	147	334	406	373	779
17	Manati	73	102	175	63	59	122	136	161	297
	Ciales	16	18	34	14	3	17	30	21	51
	Morovis	3	33	36	2	5	7	5	38	43
	District	92	153	245	79	67	146	171	220	391
18	Toa Alta	122	83	205	84	83	167	206	166	372
	Vega Baja	68	72	140	46	48	94	114	120	234
	District	190	155	345	130	131	261	320	286	606
19	Bayamon	304	368	672	265	288	553	569	656	1,225
	Total colored.	4,502	4,692	9,194	3,824	3,157	6,981	8,326	7,849	16,173

TABLE V (A1).—*Distribution (pupils) by sex and color, common schools and special schools, including reënrollments*—Continued.

COMMON SCHOOLS, BY SEX.

School district.	Locality.	Graded.			Rural.			Total males.	Total females.	Total enrollment.
		Males.	Females.	Total.	Males.	Females.	Total.			
1	San Juan	1,474	1,340	2,814	286	228	514	1,760	1,568	3,328
	Rio Piedras	205	166	371	296	204	500	501	370	871
	District	1,679	1,506	3,185	582	432	1,014	2,261	1,938	4,199
2	Carolina	253	263	516	512	320	832	765	583	1,348
	Rio Grande	246	238	484	731	460	1,191	977	698	1,675
	District	499	501	1,000	1,243	780	2,023	1,742	1,281	3,023
3	Fajardo	491	514	1,005	321	263	584	812	777	1,589
	Naguabo	123	94	217	211	190	401	334	284	618
	Vieques, Culebra	152	194	346	212	131	343	364	325	689
	District	766	802	1,568	744	584	1,328	1,510	1,386	2,896
4	Humacao	330	303	633	365	260	625	695	563	1,258
	Yabucoa	189	155	344	339	175	514	528	330	858
	Patillas	55	73	128	219	96	315	274	169	443
	District	574	531	1,105	923	531	1,454	1,497	1,062	2,559
5	Caguas	492	437	929	566	411	977	1,058	848	1,906
	San Lorenzo	286	263	549	321	191	512	607	454	1,061
	Aguas Buenas	67	64	131	170	85	255	237	149	386
	District	845	764	1,609	1,057	687	1,744	1,902	1,451	3,353
6	Guayama	617	502	1,119	472	197	669	1,089	699	1,788
	Cayey	467	439	906	429	200	629	896	639	1,535
	District	1,084	941	2,025	901	397	1,298	1,985	1,338	3,323
7	Aibonito	214	170	384	249	157	406	463	327	790
	Comerio	186	136	322	267	105	372	453	241	694
	Barros	207	120	327	467	228	695	674	348	1,022
	District	607	426	1,033	983	490	1,473	1,590	916	2,506
8	Coamo	363	301	664	543	350	893	906	651	1,557
	Juana Diaz	213	193	406	468	265	733	681	458	1,139
	Santa Isabel	150	135	285	155	136	291	305	271	576
	District	726	629	1,355	1,166	751	1,917	1,892	1,380	3,272
9	Ponce	1,827	1,611	3,438	1,345	1,082	2,427	3,172	2,693	5,865
10	Yauco	448	403	851	554	297	851	1,002	700	1,702
	Sabana Grande	296	235	531	230	170	400	526	405	931
	District	744	638	1,382	784	467	1,251	1,528	1,105	2,633
11	San German	467	337	804	421	351	772	888	688	1,576
	Lajas	144	121	265	259	242	501	403	363	766
	Cabo Rojo	333	257	590	395	281	676	728	538	1,266
	District	944	715	1,659	1,075	874	1,949	2,019	1,589	3,608
12	Mayaguez	871	748	1,619	820	650	1,470	1,691	1,398	3,089
	Añasco	364	334	698	403	342	745	767	676	1,443
	Maricao	102	78	180	201	122	323	303	200	503
	District	1,337	1,160	2,497	1,424	1,114	2,538	2,761	2,274	5,035
13	Aguadilla	543	436	979	725	352	1,077	1,268	788	2,056
	Aguada	153	108	261	225	130	355	378	238	616
	Isabela	145	130	275	369	186	555	514	316	830
	District	841	674	1,515	1,319	668	1,987	2,160	1,342	3,502
14	San Sebastian	209	170	379	470	242	712	679	412	1,091
	Lares	227	164	391	423	239	662	650	403	1,053
	Las Marias	59	57	116	319	201	520	378	258	636
	District	495	391	886	1,212	682	1,894	1,707	1,073	2,780

TABLE V (A1).—*Distribution (pupils) by sex and color, common schools and special schools, including reënrollments*—Continued.

COMMON SCHOOLS, BY SEX—Continued.

School district.	Locality.	Graded.			Rural.			Total males.	Total females.	Total enrollment.
		Males.	Females.	Total.	Males.	Females.	Total.			
15	Utuado	322	273	595	817	451	1,268	1,139	724	1,863
	Adjuntas	251	194	445	370	228	598	621	422	1,043
	District	573	467	1,040	1,187	679	1,866	1,760	1,146	2,906
16	Arecibo	614	622	1,236	870	581	1,451	1,484	1,203	2,687
	Camuy	435	338	773	471	198	669	906	536	1,442
	District	1,049	960	2,009	1,341	779	2,120	2,390	1,739	4,129
17	Manati	326	253	579	472	298	770	798	551	1,349
	Ciales	204	167	371	375	185	560	579	352	931
	Morovis	86	47	133	330	108	438	416	155	571
	District	616	467	1,083	1,177	591	1,768	1,793	1,058	2,851
18	Toa Alta	347	277	624	453	320	773	800	597	1,397
	Vega Baja	400	338	738	373	244	617	773	582	1,355
	District	747	615	1,362	826	564	1,390	1,573	1,179	2,752
19	Bayamon	769	663	1,432	1,091	797	1,888	1,860	1,460	3,320
	Total	16,722	14,461	31,183	20,380	12,949	33,329	37,102	27,410	64,512

TABLE V (A1).—*Distribution (pupils) by sex and color, common schools and special schools, including reënrollments*—Continued.

REËNROLLMENT, COMMON SCHOOLS.

	Locality.	Graded.	Rural.	Total.
1	San Juan	310	35	345
	Rio Piedras	18	28	46
	District	328	63	391
2	Carolina	51	22	73
	Rio Grande	21	34	55
	District	72	56	128
3	Fajardo	118	35	153
	Naguabo	11	32	43
	Vieques	46	31	77
	Culebra			
	District	175	98	273
4	Humacao	41	.....	41
	Yabucoa	38	1	39
	Patillas	21	4	25
	District	100	5	105
5	Caguas	115	24	139
	San Lorenzo	34	18	52
	Aguas Buenas	3	81	84
	District	152	123	275
6	Guayama	95	21	116
	Cayey	196	22	218
	District	291	43	334
7	Aibonito	70	4	74
	Comerio	73	6	79
	Barros	10	11	21
	District	153	21	174
8	Coamo	106	5	111
	Juana Diaz	27	11	38
	Santa Isabel	63	2	65
	District	196	18	214
9	Ponce	1,073	79	1,152
10	Yauco	75	22	97
	Sabana Grande	101	4	105
	District	176	26	202
11	San German	50	22	72
	Lajas	17	32	49
	Cabo Rojo	76	11	87
	District	143	65	208
12	Mayaguez	226	61	287
	Añasco	122	8	130
	Maricao	16	4	20
	District	364	73	437
13	Aguadilla	141	28	169
	Aguada	53	10	63
	Isabela	1	7	8
	District	195	45	240
14	San Sebastian	25	11	36
	Lares	66	15	81
	Las Marias	14	2	16
	District	105	28	133
15	Utuado	52	33	85
	Adjuntas	86	16	102
	District	138	49	187
16	Arecibo	224	43	267
	Camuy	94	4	98
	District	318	47	365
17	Manati	93	7	100
	Ciales	45	23	68
	Morovis	11	6	17
	District	149	36	185
18	Toa Alta	65	26	91
	Vega Baja	160	30	190
	District	225	56	281
19	Bayamon	155	31	186
	Total	4,508	962	5,470

REËNROLLMENT, SPECIAL SCHOOLS.

Locality.	High.	Industrial.	Night.	Agricultural.	Total reënrollment.
San Juan	14	30	.....	.....	44
Naguabo	.....	.....	2	.....	2
Caguas	.....	.....	2	.....	2
Juana Diaz	.....	.....	1	.....	1
Ponce	.....	15	.....	32	47
Yauco	.....	.....	9	.....	9
Lajas	.....	.....	.....	10	10
Cabo Rojo	.....	.....	.....	2	2
Mayaguez	1	37	.....	.....	38
Adjuntas	.....	.....	3	.....	3
Camuy	.....	.....	.....	2	2
Bayamon	.....	.....	.....	2	2
Total	15	82	17	48	162

TABLE V (A1).—*Distribution (pupils) by sex and color, common schools and special schools, including reënrollments*—Continued.

SPECIAL SCHOOLS, BY COLOR.

	Color and locality.	Males.					Females.					Total.
		High.	Industrial.	Night.	Agricultural.	Total.	High.	Industrial.	Night.	Agricultural.	Total.	
	WHITE.											
1	San Juan	50	63	89	.....	202	14	91	45	.....	150	352
2	Carolina	....	.....	27	24	51	....	.....	.....	.....	.....	51
	Rio Grande	....	.....	16	.....	16	....	.....	.....	1	1	17
	District	....	.....	43	24	67	....	.....	.....	1	1	68
3	Fajardo	....	.....	39	.....	39	....	.....	7	.....	7	46
	Naguabo	....	.....	23	.....	23	....	.....	6	.....	6	29
	District	....	.....	62	.....	62	....	.....	13	.....	13	75
4	Humacao	....	.....	55	.....	55	....	.....	.....	.....	.....	55
5	Caguas	....	.....	42	.....	42	....	.....	13	.....	13	55
	San Lorenzo	....	.....	44	.....	44	....	.....	.....	.....	.....	44
	District	....	.....	86	.....	86	....	.....	13	.....	13	99
6	Guayama	....	40	30	5	75	....	46	8	5	59	134
	Cayey	....	.....	47	.....	47	....	.....	.....	.....	.....	47
	District	....	40	77	5	122	....	46	8	5	59	181
7	Aibonito	....	.....	7	.....	7	....	.....	10	.....	10	17
	Barros	....	.....	.....	69	69	....	.....	.....	32	32	101
	District	....	.....	7	69	76	....	.....	10	32	42	118
8	Coamo	....	.....	17	.....	17	....	.....	21	.....	21	38
	Juana Diaz	....	.....	29	.....	29	....	.....	9	.....	9	38
	District	....	.....	46	.....	46	....	.....	30	.....	30	76
9	Ponce	18	56	137	25	236	21	33	53	5	112	348
10	Yauco	....	.....	119	.....	119	....	.....	28	.....	28	147
	Sabana Grande	....	.....	50	24	74	....	.....	38	21	59	133
	District	....	.....	169	24	193	....	.....	66	21	87	280
11	San German	....	.....	60	.....	60	....	.....	.....	.....	.....	60
	Lajas	....	.....	27	56	83	....	.....	.....	5	5	88
	Cabo Rojo	....	.....	.....	30	30	....	.....	.....	31	31	61
	District	....	.....	87	86	173	....	.....	.....	36	36	209
12	Mayaguez	18	69	57	.....	144	14	67	2	.....	83	227
	Añasco	....	.....	56	.....	56	....	.....	.....	.....	.....	56
	District	18	69	113	.....	200	14	67	2	.....	83	283
13	Aguadilla	....	.....	55	.....	55	....	.....	6	.....	6	61
14	San Sebastian	....	.....	59	.....	59	....	.....	16	.....	16	75
	Lares	....	.....	66	.....	66	....	.....	32	.....	32	98
	District	....	.....	125	.....	125	....	.....	48	.....	48	173
15	Utuado	....	.....	66	.....	66	....	.....	11	.....	11	77
	Adjuntas	....	.....	31	.....	31	....	.....	11	.....	11	42
	District	....	.....	97	.....	97	....	.....	22	.....	22	119
16	Arecibo	....	47	28	.....	75	....	84	.....	.....	84	159
	Camuy	....	.....	.....	50	50	....	.....	.....	9	9	59
	District	....	47	28	50	125	....	84	.....	9	93	218
17	Manati	....	.....	33	.....	33	....	.....	.....	.....	.....	33
18	Toa Alta	....	.....	35	36	71	....	.....	.....	19	19	90
19	Bayamon	....	.....	40	18	58	....	.....	5	17	22	80
	Total	86	275	1,384	337	2,082	49	321	321	145	836	2,919

TABLE V (A1).—*Distribution (pupils) by sex and color, common schools and special schools, including reënrollments*—Continued

SPECIAL SCHOOLS, BY COLOR—Continued.

	Color and locality.	Males.					Females.					Total.
		High.	Industrial.	Night.	Agricultural.	Total.	High.	Industrial.	Night.	Agricultural.	Total.	
	COLORED.											
1	San Juan	6	22	67	.....	95	1	32	24	.....	57	152
2	Carolina	....	.....	16	28	44	....	.....	.....	3	3	47
	Rio Grande	....	.....	24	.....	24	....	.....	.....	.....	.....	24
	District	....	.....	40	28	68	....	.....	.....	3	3	71
3	Fajardo	....	.....	49	.....	49	....	.....	1	.....	1	50
	Naguabo	....	.....	8	.....	8	....	.....	4	.....	4	12
	District	....	.....	57	.....	57	....	.....	5	.....	5	62
4	Humacao	....	.....	39	.....	39	....	.....	.....	.....	.....	39
5	Caguas	....	.....	12	.....	12	....	.....	10	.....	10	22
	San Lorenzo	....	.....	15	.....	15	....	.....	.....	.....	.....	15
	District	....	.....	27	.....	27	....	.....	10	.....	10	37
6	Guayama	....	16	46	38	100	....	13	27	9	49	149
	Cayey	....	.....	25	.....	25	....	.....	.....	.....	.....	25
	District	....	16	71	38	125	....	13	27	9	49	174
7	Aibonito	....	.....	1	.....	1	....	.....	2	.....	2	3
	Barros	....	.....	.....	9	9	....	.....	.....	1	1	10
	District	....	.....	1	9	10	....	.....	2	1	3	13
8	Coamo	....	.....	10	.....	10	....	.....	4	.....	4	14
	Juana Diaz	....	.....	48	.....	48	....	.....	9	.....	9	57
	District	....	.....	58	.....	58	....	.....	13	.....	13	71
9	Ponce	3	28	120	31	182	1	37	67	4	109	291
10	Yauco	....	.....	34	.....	34	....	.....	22	.....	22	56
	Sabana Grande	....	.....	1	7	8	....	.....	.....	4	4	12
	District	....	.....	35	7	42	....	.....	22	4	26	68
11	San German	....	.....	23	.....	23	....	.....	.....	.....	.....	23
	Lajas	....	.....	10	5	15	....	.....	.....	.....	.....	15
	Cabo Rojo	....	.....	.....	5	5	....	.....	.....	1	1	6
	District	....	.....	33	10	43	....	.....	.....	1	1	44
12	Mayaguez	2	15	26	.....	43	3	23	.....	.....	26	69
	Añasco	....	.....	31	.....	31	....	.....	.....	.....	.....	31
	District	2	15	57	.....	74	3	23	.....	.....	26	100
13	Aguadilla	....	.....	35	.....	35	....	.....	7	.....	7	42
14	San Sebastian	....	.....	16	.....	16	....	.....	5	.....	5	21
	Lares	....	.....	14	.....	14	....	.....	8	.....	8	22
	District	....	.....	30	.....	30	....	.....	13	.....	13	43
15	Utuado	....	.....	15	.....	15	....	.....	1	.....	1	16
	Adjuntas	....	.....	16	.....	16	....	.....	1	.....	1	17
	District	....	.....	31	.....	31	....	.....	2	.....	2	33
16	Arecibo	....	3	19	.....	22	....	10	.....	.....	10	32
	Camuy	....	.....	.....	2	2	....	.....	.....	.....	.....	2
	District	....	3	19	2	24	....	10	.....	.....	10	34
17	Manati	....	.....	43	.....	43	....	.....	.....	.....	.....	43
18	Toa Alta	....	.....	15	11	26	....	.....	.....	3	3	29
19	Bayamon	....	.....	38	15	53	....	.....	12	14	26	79
	Total	11	84	816	151	1,062	5	115	204	39	363	1,425

TABLE V (A1).—*Distribution (pupils) by sex and color, common schools and special schools, including reënrollments*—Continued.

SPECIAL SCHOOLS, BY SEX.

	Locality.	High.			Industrial.			Night.			Agricultural.			Total males.	Total females.	Total enrollment.
		Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.			
1	San Juan	56	15	71	85	123	208	156	69	225	....	....	....	297	207	504
2	Carolina	....	....	....	....	....	....	43	....	43	52	4	56	95	4	99
	Rio Grande	....	....	....	....	....	....	40	....	40	....	....	....	40	.....	40
	District	....	....	....	....	....	....	83	....	83	52	4	56	135	4	139
3	Fajardo	....	....	....	....	....	....	88	8	96	....	....	....	88	8	96
	Naguabo	....	....	....	....	....	....	31	10	41	....	....	....	31	10	41
	District	....	....	....	....	....	....	119	18	137	....	....	....	119	18	137
4	Humacao	....	....	....	....	....	....	94	....	94	....	....	....	94	.....	94
5	Caguas	....	....	....	....	....	....	54	23	77	....	....	....	54	23	77
	San Lorenzo	....	....	....	....	....	....	59	....	59	....	....	....	59	.....	59
	District	....	....	....	....	....	....	113	23	136	....	....	....	113	23	136
6	Guayama	....	....	....	56	59	115	76	35	111	43	14	57	175	108	283
	Cayey	....	....	....	....	....	....	72	....	72	....	....	....	72	.....	72
	District	....	....	....	56	59	115	148	35	183	43	14	57	247	108	355
7	Aibonito	....	....	....	....	....	....	8	12	20	....	....	....	8	12	20
	Barros	....	....	....	....	....	....	.....	....	.....	78	33	111	78	33	111
	District	....	....	....	....	....	....	8	12	20	78	33	111	86	45	131
8	Coamo	....	....	....	....	....	....	27	25	52	....	....	....	27	25	52
	Juana Diaz	....	....	....	....	....	....	77	18	95	....	....	....	77	18	95
	District	....	....	....	....	....	....	104	43	147	....	....	....	104	43	147
9	Ponce	21	22	43	84	70	154	257	120	377	56	9	65	418	221	639
10	Yauco	....	....	....	....	....	....	153	50	203	....	....	....	153	50	203
	Sabana Grande	....	....	....	....	....	....	51	38	89	31	25	56	82	63	145
	District	....	....	....	....	....	....	204	88	292	31	25	56	235	113	348
11	San German	....	....	....	....	....	....	83	....	83	....	....	....	83	.....	83
	Lajas	....	....	....	....	....	....	37	....	37	61	5	66	98	5	103
	Cabo Rojo	....	....	....	....	....	....	.....	....	.....	35	32	67	35	32	67
	District	....	....	....	....	....	....	120	....	120	96	37	133	216	37	253
12	Mayaguez	20	17	37	84	90	174	83	2	85	....	....	....	187	109	296
	Añasco	....	....	....	....	....	....	87	....	87	....	....	....	87	.....	87
	District	20	17	37	84	90	174	170	2	172	....	....	....	274	109	383
13	Aguadilla	....	....	....	....	....	....	90	13	103	....	....	....	90	13	103
14	San Sebastian	....	....	....	....	....	....	75	21	96	....	....	....	75	21	96
	Lares	....	....	....	....	....	....	80	40	120	....	....	....	80	40	120
	District	....	....	....	....	....	....	155	61	216	....	....	....	155	61	216
15	Utuado	....	....	....	....	....	....	81	12	93	....	....	....	81	12	93
	Adjuntas	....	....	....	....	....	....	47	12	59	....	....	....	47	12	59
	District	....	....	....	....	....	....	128	24	152	....	....	....	128	24	152
16	Arecibo	....	....	....	50	94	144	47	....	47	....	....	....	97	94	191
	Camuy	....	....	....	....	....	....	.....	....	.....	52	9	61	52	9	61
	District	....	....	....	50	94	144	47	....	47	52	9	61	149	103	252
17	Manati	....	....	....	....	....	....	76	....	76	....	....	....	76	.....	76
18	Toa Alta	....	....	....	....	....	....	50	....	50	47	22	69	97	22	119
19	Bayamon	....	....	....	....	....	....	78	17	95	33	31	64	111	48	159
	Total	97	54	151	359	436	795	2,200	525	2,725	488	184	672	3,144	1,199	4,343

TABLE V (A1).—*Distribution (pupils) by sex and color, common schools and special schools, including reënrollments*—Continued.

SPECIAL SCHOOLS, BY COLOR.

School district.	Locality.	High.			Industrial.			Night.			Agricultural.			Total white.	Total colored.	Total enrollment.
		White.	Colored.	Total.	White.	Colored.	Total.	White.	Colored.	Total.	White.	Colored.	Total.			
1	San Juan	64	7	71	154	54	208	134	91	225	....	....	....	352	152	504
2	Carolina	....	....	....	....	....	....	27	16	43	25	31	56	52	47	99
	Rio Grande	....	....	....	....	....	....	16	24	40	....	....	....	16	24	40
	District	....	....	....	....	....	....	43	40	83	25	31	56	68	71	139
3	Fajardo	....	....	....	....	....	....	46	50	96	....	....	....	46	50	96
	Naguabo	....	....	....	....	....	....	29	12	41	....	....	....	29	12	41
	District	....	....	....	....	....	....	75	62	137	....	....	....	75	62	137
4	Humacao	....	....	....	....	....	....	55	39	94	....	....	....	55	39	94
5	Caguas	....	....	....	....	....	....	55	22	77	....	....	....	55	22	77
	San Lorenzo	....	....	....	....	....	....	44	15	59	....	....	....	44	15	59
	District	....	....	....	....	....	....	99	37	136	....	....	....	99	37	136
6	Guayama	....	....	....	86	29	115	38	73	111	10	47	57	134	149	283
	Cayey	....	....	....	....	....	....	47	25	72	....	....	....	47	25	72
	District	....	....	....	86	29	115	85	98	183	10	47	57	181	174	355
7	Aibonito	....	....	....	....	....	....	17	3	20	....	....	....	17	3	20
	Barros	....	....	....	....	....	....	.....	.....	.....	101	10	111	101	10	111
	District	....	....	....	....	....	....	17	3	20	101	10	111	118	13	131
8	Coamo	....	....	....	....	....	....	38	14	52	....	....	....	38	14	52
	Juana Diaz	....	....	....	....	....	....	38	57	95	....	....	....	38	57	95
	District	....	....	....	....	....	....	76	71	147	....	....	....	76	71	147
9	Ponce	39	4	43	89	65	154	190	187	377	30	35	65	348	291	639
10	Yauco	....	....	....	....	....	....	147	56	203	....	....	....	147	56	203
	Sabana Grande	....	....	....	....	....	....	88	1	89	45	11	56	133	12	145
	District	....	....	....	....	....	....	235	57	292	45	11	56	280	68	348
11	San German	....	....	....	....	....	....	60	23	83	....	....	....	60	23	83
	Lajas	....	....	....	....	....	....	27	10	37	61	5	66	88	15	103
	Cabo Rojo	....	....	....	....	....	....	.....	.....	.....	61	6	67	61	6	67
	District	....	....	....	....	....	....	87	33	120	122	11	133	209	44	253
12	Mayaguez	32	5	37	136	38	174	59	26	85	....	....	....	227	69	296
	Añasco	....	....	....	....	....	....	56	31	87	....	....	....	56	31	87
	District	32	5	37	136	38	174	115	57	172	....	....	....	283	100	383
13	Aguadilla	....	....	....	....	....	....	61	42	103	....	....	....	61	42	103
14	San Sebastian	....	....	....	....	....	....	75	21	96	....	....	....	75	21	96
	Lares	....	....	....	....	....	....	98	22	120	....	....	....	98	22	120
	District	....	....	....	....	....	....	173	43	216	....	....	....	173	43	216
15	Utuado	....	....	....	....	....	....	77	16	93	....	....	....	77	16	93
	Adjuntas	....	....	....	....	....	....	42	17	59	....	....	....	42	17	59
	District	....	....	....	....	....	....	119	33	152	....	....	....	119	33	152
16	Arecibo	....	....	....	131	13	144	28	19	47	....	....	....	159	32	191
	Camuy	....	....	....	....	....	....	.....	.....	.....	59	2	61	59	2	61
	District	....	....	....	131	13	144	28	19	47	59	2	61	218	34	252
17	Manati	....	....	....	....	....	....	33	43	76	....	....	....	33	43	76
18	Toa Alta	....	....	....	....	....	....	35	15	50	47	22	69	82	37	119
19	Bayamon	....	....	....	....	....	....	45	50	95	35	29	64	80	79	159
	Total	135	16	151	596	199	795	1,705	1,020	2,725	474	198	672	2,910	1,433	4,343

TABLE V (A1).—*Distribution (pupils) by sex and color, common schools and special schools, including reënrollments*—Continued.

ENROLLMENT, BY SEX AND COLOR, FOR EACH SCHOOL YEAR FOR THE HIGH SCHOOLS.

Locality.	First.				Second.				Third.				Fourth.				Total.
	Males.	Females.	White.	Colored.	Males.	Females.	White.	Colored.	Males.	Females.	White.	Colored.	Males.	Females.	White.	Colored.	
San Juan	30	7	32	5	11	2	13	....	11	5	14	2	4	1	5	....	71
Ponce	6	12	17	1	8	7	14	1	7	3	8	2	....	....	....	....	43
Mayaguez	17	8	22	3	3	9	10	2	....	....	....	....	....	....	....	....	37
Total	53	27	71	9	22	18	37	3	18	8	22	4	4	1	5	....	151

COMMON SCHOOLS, BY SEX AND COLOR.

School district.	Locality.	White.			Colored.			Total males.	Total females.	Total enrollment.
		Males.	Females.	Total.	Males.	Females.	Total.			
1	San Juan	1,143	967	2,110	617	601	1,218	1,760	1,568	3,328
	Rio Piedras	303	220	523	198	150	348	501	370	871
	District	1,446	1,187	2,633	815	751	1,566	2,261	1,938	4,199
2	Carolina	499	372	871	266	211	477	765	583	1,348
	Rio Grande	528	365	893	449	333	782	977	698	1,675
	District	1,027	737	1,764	715	544	1,259	1,742	1,281	3,023
3	Fajardo	587	564	1,151	225	213	438	812	777	1,589
	Naguabo	250	204	454	84	80	164	334	284	618
	Vieques, Culebra	239	238	477	125	87	212	364	325	689
	District	1,076	1,006	2,082	434	380	814	1,510	1,386	2,896
4	Humacao	560	464	1,024	135	99	234	695	563	1,258
	Yabucoa	320	200	520	208	130	338	528	330	858
	Patillas	192	104	296	82	65	147	274	169	443
	District	1,072	768	1,840	425	294	719	1,497	1,062	2,559
5	Caguas	728	622	1,350	330	226	556	1,058	848	1,906
	San Lorenzo	478	375	853	129	79	208	607	454	1,061
	Aguas Buenas	197	131	328	40	18	58	237	149	386
	District	1,403	1,128	2,531	499	323	822	1,902	1,451	3,353
6	Guayama	595	348	943	494	351	845	1,089	699	1,788
	Cayey	713	516	1,229	183	123	306	896	639	1,535
	District	1,308	864	2,172	677	474	1,151	1,985	1,338	3,323
7	Aibonito	359	285	644	104	42	146	463	327	790
	Comerio	389	193	582	64	48	112	453	241	694
	Barros	596	316	912	78	32	110	674	348	1,022
	District	1,344	794	2,138	246	122	368	1,590	916	2,506
8	Coamo	610	448	1,058	296	203	499	906	651	1,557
	Juana Diaz	500	328	828	181	130	311	681	458	1,139
	Santa Isabel	187	160	347	118	111	229	305	271	576
	District	1,297	936	2,233	595	444	1,039	1,892	1,380	3,272
9	Ponce	2,151	1,910	4,061	1,021	783	1,804	3,172	2,693	5,865
10	Yauco	723	554	1,277	279	146	425	1,002	700	1,702
	Sabana Grande	464	364	828	62	41	103	526	405	931
	District	1,187	918	2,105	341	187	528	1,528	1,105	2,633
11	San German	630	508	1,138	258	180	438	888	688	1,576
	Lajas	355	328	683	48	35	83	403	363	766
	Cabo Rojo	628	460	1,088	100	78	178	728	538	1,266
	District	1,613	1,296	2,909	406	293	699	2,019	1,589	3,608

TABLE V (A1).—*Distribution (pupils) by sex and color, common schools and special schools, including reënrollments*—Continued.

COMMON SCHOOLS, BY SEX AND COLOR—Continued.

School district.	Locality.	White.			Colored.			Total males.	Total females.	Total enrollment.
		Males.	Females.	Total.	Males.	Females.	Total.			
12	Mayaguez	1,251	1,003	2,254	440	395	835	1,691	1,398	3,089
	Añasco	621	508	1,129	146	168	314	767	676	1,443
	Maricao	216	145	361	87	55	142	303	200	503
	District	2,088	1,656	3,744	673	618	1,291	2,761	2,274	5,035
13	Aguadilla	1,024	575	1,599	244	213	457	1,268	788	2,056
	Aguada	306	177	483	72	61	133	378	238	616
	Isabela	476	282	758	38	34	72	514	316	830
	District	1,806	1,034	2,840	354	308	662	2,160	1,342	3,502
14	San Sebastian	629	379	1,008	50	33	83	679	412	1,091
	Lares	609	369	978	41	34	75	650	403	1,053
	Las Marias	322	225	547	56	33	89	378	258	636
	District	1,560	973	2,533	147	100	247	1,707	1,073	2,780
15	Utuado	1,052	676	1,728	87	48	135	1,139	724	1,863
	Adjuntas	569	404	973	52	18	70	621	422	1,043
	District	1,621	1,080	2,701	139	66	205	1,760	1,146	2,906
16	Arecibo	1,101	904	2,005	383	299	682	1,484	1,203	2,687
	Camuy	844	501	1,345	62	35	97	906	536	1,442
	District	1,945	1,405	3,350	445	334	779	2,390	1,739	4,129
17	Manati	623	429	1,052	175	122	297	798	551	1,349
	Ciales	545	335	880	34	17	51	579	352	931
	Morovis	380	148	528	36	7	43	416	155	571
	District	1,548	912	2,460	245	146	391	1,793	1,058	2,851
18	Toa Alta	595	430	1,025	205	167	372	800	597	1,397
	Vega Baja	633	488	1,121	140	94	234	773	582	1,355
	District	1,228	918	2,146	345	261	606	1,573	1,179	2,752
19	Bayamon	1,188	907	2,095	672	553	1,225	1,860	1,460	3,320
	Total	27,908	20,429	48,337	9,194	6,981	16,175	37,102	27,410	64,512

COMMON SCHOOLS AND SPECIAL SCHOOLS, BY SEX AND COLOR.

1	San Juan	1,345	1,117	2,462	712	658	1,370	2,057	1,775	3,832
	Rio Piedras	303	220	523	198	150	348	501	370	871
	District	1,648	1,337	2,985	910	808	1,718	2,558	2,145	4,703
2	Carolina	550	373	923	310	214	524	860	587	1,447
	Rio Grande	544	365	909	473	333	806	1,017	698	1,715
	District	1,094	738	1,832	783	547	1,330	1,877	1,285	3,162
3	Fajardo	626	571	1,197	274	214	488	900	785	1,685
	Naguabo	273	210	483	92	84	176	365	294	659
	Vieques, Culebra	239	238	477	125	87	212	364	325	689
	District	1,138	1,019	2,157	491	385	876	1,629	1,404	3,033
4	Humacao	615	464	1,079	174	99	273	789	563	1,352
	Yabucoa	320	200	520	208	130	338	528	330	858
	Patillas	192	104	296	82	65	147	274	169	443
	District	1,127	768	1,895	464	294	758	1,591	1,062	2,653
5	Caguas	770	635	1,405	342	236	578	1,112	871	1,983
	San Lorenzo	522	375	897	144	79	223	666	454	1,120
	Aguas Buenas	197	131	328	40	18	58	237	149	386
	District	1,489	1,141	2,630	526	333	859	2,015	1,474	3,489

TABLE V (A1).—*Distribution (pupils) by sex and color, common schools and special schools, including reënrollments*—Continued.

COMMON SCHOOLS AND SPECIAL SCHOOLS, BY SEX AND COLOR—Continued.

School district.	Locality.	White.			Colored.			Total males.	Total females.	Total enrollment.
		Males.	Females.	Total.	Males.	Females.	Total.			
6	Guayama	670	407	1,077	594	400	994	1,264	807	2,071
	Cayey	760	516	1,276	208	123	331	968	639	1,607
	District	1,430	923	2,353	802	523	1,325	2,232	1,446	3,678
7	Aibonito	366	295	661	105	44	149	471	339	810
	Comerio	389	193	582	64	48	112	453	241	694
	Barros	665	348	1,013	87	33	120	752	381	1,133
	District	1,420	836	2,256	256	125	381	1,676	961	2,637
8	Coamo	627	469	1,096	306	207	513	933	676	1,609
	Juana Diaz	529	337	866	229	139	368	758	476	1,234
	Santa Isabel	187	160	347	118	111	229	305	271	576
	District	1,343	966	2,309	653	457	1,110	1,996	1,423	3,419
9	Ponce	2,387	2,022	4,409	1,203	892	2,095	3,590	2,914	6,504
10	Yauco	842	582	1,424	313	168	481	1,155	750	1,905
	Sabana Grande	538	423	961	70	45	115	608	468	1,076
	District	1,380	1,005	2,385	383	213	596	1,763	1,218	2,981
11	San German	690	508	1,198	281	180	461	971	688	1,659
	Lajas	438	333	771	63	35	98	501	368	869
	Cabo Rojo	658	491	1,149	105	79	184	763	570	1,333
	District	1,786	1,332	3,118	449	294	743	2,235	1,626	3,861
12	Mayaguez	1,395	1,086	2,481	483	421	904	1,878	1,507	3,385
	Añasco	677	508	1,185	177	168	345	854	676	1,530
	Maricao	216	145	361	87	55	142	303	200	503
	District	2,288	1,739	4,027	747	644	1,391	3,035	2,383	5,418
13	Aguadilla	1,079	581	1,660	279	220	499	1,358	801	2,159
	Aguada	306	177	483	72	61	133	378	238	616
	Isabela	476	282	758	38	34	72	514	316	830
	District	1,861	1,040	2,901	389	315	704	2,250	1,355	3,605
14	San Sebastian	688	395	1,083	66	38	104	754	433	1,187
	Lares	675	401	1,076	55	42	97	730	443	1,173
	Las Marias	322	225	547	56	33	89	378	258	636
	District	1,685	1,021	2,706	177	113	290	1,862	1,134	2,996
15	Utuado	1,118	687	1,805	102	49	151	1,220	736	1,956
	Adjuntas	600	415	1,015	68	19	87	668	434	1,102
	District	1,718	1,102	2,820	170	68	238	1,888	1,170	3,058
16	Arecibo	1,176	988	2,164	405	309	714	1,581	1,297	2,878
	Camuy	894	510	1,404	64	35	99	958	545	1,503
	District	2,070	1,498	3,568	469	344	813	2,539	1,842	4,381
17	Manati	656	429	1,085	218	122	340	874	551	1,425
	Ciales	545	335	880	34	17	51	579	352	931
	Morovis	380	148	528	36	7	43	416	155	571
	District	1,581	912	2,493	288	146	434	1,869	1,058	2,927
18	Toa Alta	666	449	1,115	231	170	401	897	619	1,516
	Vega Baja	633	488	1,121	140	94	234	773	582	1,355
	District	1,299	937	2,236	371	264	635	1,670	1,201	2,871
19	Bayamon	1,246	929	2,175	725	579	1,304	1,971	1,508	3,479
	Total	29,990	21,265	51,255	10,256	7,344	17,600	40,246	28,609	68,855

TABLE VI.—*Distribution (pupils) by grades, common schools, high schools, and agricultural schools, and by age of pupils, special schools.*

School year, 1904–5.

GRADED SCHOOLS.

School district.	Locality.	Grade. 1	2	3	4	5	6	7	8	Enrollment.
1	San Juan	1,067	684	462	267	159	101	41	33	2,814
	Rio Piedras	163	60	46	49	36	17	.....	.....	371
	District	1,230	744	508	316	195	118	41	33	3,185
2	Carolina	211	103	94	48	28	13	12	7	516
	Rio Grande	165	101	70	66	40	32	10	.....	484
	District	376	204	164	114	68	45	22	7	1,000
3	Fajardo	329	182	230	89	69	38	46	22	1,005
	Naguabo	82	38	32	37	17	11	.....	.....	217
	Vieques / Culebra	114	109	69	34	8	12	.....	.....	346
	District	525	329	331	160	94	61	46	22	1,568
4	Humacao	232	140	103	69	26	25	23	15	633
	Yabucoa	115	51	48	52	30	.....	35	13	344
	Patillas	46	25	30	20	7	.....	.....	.....	128
	District	393	216	181	141	63	25	58	28	1,105
5	Caguas	157	337	182	157	37	28	21	10	929
	San Lorenzo	186	111	123	104	25	.....	.....	.....	549
	Aguas Buenas	62	31	28	10	.....	.....	.....	.....	131
	District	405	479	333	271	62	28	21	10	1,609
6	Guayama	459	276	210	94	38	28	14	.....	1,119
	Cayey	339	182	174	97	63	24	27	.....	906
	District	798	458	384	191	101	52	41	.....	2,025
7	Aibonito	207	70	39	18	31	19	.....	.....	384
	Comerio	180	83	23	30	6	.....	.....	.....	322
	Barros	179	89	21	12	11	15	.....	.....	327
	District	566	242	83	60	48	34	.....	.....	1,033
8	Coamo	221	192	126	66	42	7	10	.....	664
	Juana Diaz	124	93	94	46	24	11	14	.....	406
	Santa Isabel	77	82	74	40	12	.....	.....	.....	285
	District	422	367	294	152	78	18	24	.....	1,355
9	Ponce	1,338	985	501	258	204	78	42	32	3,438
10	Yauco	364	146	135	86	74	31	15	.....	851
	Sabana Grande	194	165	56	44	22	32	18	.....	531
	District	558	311	191	130	96	63	33	.....	1,382
11	San German	282	147	111	89	101	34	26	14	804
	Lajas	96	55	46	38	21	9	.....	.....	265
	Cabo Rojo	326	108	44	67	20	19	.....	6	590
	District	704	310	201	194	142	62	26	20	1,659
12	Mayaguez	482	425	350	141	84	73	21	43	1,619
	Añasco	318	123	68	101	58	8	22	.....	698
	Maricao	92	43	32	13	.....	.....	.....	.....	180
	District	892	591	450	255	142	81	43	43	2,497
13	Aguadilla	511	221	124	71	19	16	12	5	979
	Aguada	127	64	29	30	11	.....	.....	.....	261
	Isabela	114	56	36	18	24	15	12	.....	275
	District	752	341	189	119	54	31	24	5	1,515
14	San Sebastian	196	52	55	32	27	9	.....	8	379
	Lares	177	58	28	44	56	11	17	.....	391
	Las Marias	72	17	9	18	.....	.....	.....	.....	116
	District	445	127	92	94	83	20	17	8	886

TABLE VI.—*Distribution (pupils) by grades, common schools, high schools, and agricultural schools, and by age of pupils, special schools*—Continued.

GRADED SCHOOLS—Continued.

School district.	Locality.	Grade. 1	2	3	4	5	6	7	8	Enrollment.
15	Utuado	196	188	89	73	28	13	8	.....	595
	Adjuntas	134	135	67	46	19	18	26	.....	445
	District	330	323	156	119	47	31	34	.....	1,040
16	Arecibo	616	240	217	68	51	23	.....	21	1,236
	Camuy	418	135	106	59	36	19	.....	.....	773
	District	1,034	375	323	127	87	42	.....	21	2,009
17	Manati	190	196	69	85	18	11	.....	10	579
	Ciales	233	29	66	25	7	11	.....	.....	371
	Morovis	54	20	24	20	15	.....	.....	.....	133
	District	477	245	159	130	40	22	.....	10	1,083
18	Toa Alta	330	128	66	30	50	20	.....	.....	624
	Vega Baja	293	189	100	85	15	48	8	.....	738
	District	623	317	166	115	65	68	8	.....	1,362
19	Bayamon	849	273	183	68	35	10	14	.....	1,432
	Total	12,717	7,237	4,889	3,014	1,704	889	494	239	31,183

RURAL SCHOOLS.

1	San Juan	448	56	10	.....	.....	.....	.....	.....	514
	Rio Piedras	284	162	54	.....	.....	.....	.....	.....	500
	District	732	218	64	.....	.....	.....	.....	.....	1,014
2	Carolina	443	255	129	5	.....	.....	.....	.....	832
	Rio Grande	588	333	196	40	20	14	.....	.....	1,191
	District	1,031	588	325	45	20	14	.....	.....	2,023
3	Fajardo	297	189	93	5	.....	.....	.....	.....	584
	Naguabo	192	96	84	29	.....	.....	.....	.....	401
	Vieques, Culebra	235	97	11	.....	.....	.....	.....	.....	343
	District	724	382	188	34	.....	.....	.....	.....	1,328
4	Humacao	448	149	28	.....	.....	.....	.....	.....	625
	Yabucoa	330	125	59	.....	.....	.....	.....	.....	514
	Patillas	197	96	22	.....	.....	.....	.....	.....	315
	District	975	370	109	.....	.....	.....	.....	.....	1,454
5	Caguas	681	231	65	.....	.....	.....	.....	.....	977
	San Lorenzo	380	96	30	6	.....	.....	.....	.....	512
	Aguas Buenas	217	27	11	.....	.....	.....	.....	.....	255
	District	1,278	354	106	6	.....	.....	.....	.....	1,744
6	Guayama	427	202	40	.....	.....	.....	.....	.....	669
	Cayey	433	145	51	.....	.....	.....	.....	.....	629
	District	860	347	91	.....	.....	.....	.....	.....	1,298
7	Aibonito	225	141	40	.....	.....	.....	.....	.....	406
	Comerio	249	102	21	.....	.....	.....	.....	.....	372
	Barros	361	198	121	15	.....	.....	.....	.....	695
	District	835	441	182	15	.....	.....	.....	.....	1,473
8	Coamo	449	251	193	.....	.....	.....	.....	.....	893
	Juana Diaz	498	178	57	.....	.....	.....	.....	.....	733
	Santa Isabel	167	107	17	.....	.....	.....	.....	.....	291
	District	1,114	536	267	.....	.....	.....	.....	.....	1,917
9	Ponce	1,488	655	266	18	.....	.....	.....	.....	2,427

TABLE VI.—*Distribution (pupils) by grades, common schools, high schools, and agricultural schools, and by age of pupils, special schools*—Continued.

RURAL SCHOOLS—Continued.

School district.	Locality.	Grade. 1	2	3	4	5	6	7	8	Enrollment.
10	Yauco	564	205	82	.....	.....	.....	.....	.....	851
	Sabana Grande	267	105	28	.....	.....	.....	.....	.....	400
	District	831	310	110	.....	.....	.....	.....	.....	1,251
11	San German	455	193	124	.....	.....	.....	.....	.....	772
	Lajas	292	132	77	.....	.....	.....	.....	.....	501
	Cabo Rojo	369	193	114	.....	.....	.....	.....	.....	676
	District	1,116	518	315	.....	.....	.....	.....	.....	1,949
12	Mayaguez	1,025	323	110	12	.....	.....	.....	.....	1,470
	Añasco	452	182	111	.....	.....	.....	.....	.....	745
	Maricao	224	65	32	2	.....	.....	.....	.....	323
	District	1,701	570	253	14	.....	.....	.....	.....	2,538
13	Aguadilla	564	316	197	.....	.....	.....	.....	.....	1,077
	Aguada	242	68	45	.....	.....	.....	.....	.....	355
	Isabela	296	157	84	18	.....	.....	.....	.....	555
	District	1,102	541	326	18	.....	.....	.....	.....	1,987
14	San Sebastian	411	211	90	.....	.....	.....	.....	.....	712
	Lares	368	192	102	.....	.....	.....	.....	.....	662
	Las Marias	357	126	37	.....	.....	.....	.....	.....	520
	District	1,136	529	229	.....	.....	.....	.....	.....	1,894
15	Utuado	572	369	292	35	.....	.....	.....	.....	1,268
	Adjuntas	342	142	101	13	.....	.....	.....	.....	598
	District	914	511	393	48	.....	.....	.....	.....	1,866
16	Arecibo	894	406	151	.....	.....	.....	.....	.....	1,451
	Camuy	330	247	92	.....	.....	.....	.....	.....	669
	District	1,224	653	243	.....	.....	.....	.....	.....	2,120
17	Manati	465	215	78	4	.....	8	.....	.....	770
	Ciales	368	123	63	6	.....	.....	.....	.....	560
	Morovis	240	115	83	.....	.....	.....	.....	.....	438
	District	1,073	453	224	10	.....	8	.....	.....	1,768
18	Toa Alta	503	170	96	4	.....	.....	.....	.....	773
	Vega Baja	331	158	128	.....	.....	.....	.....	.....	617
	District	834	328	224	4	.....	.....	.....	.....	1,390
19	Bayamon	1,185	479	215	9	.....	.....	.....	.....	1,888
	Total	20,153	8,783	4,130	221	20	22	.....	.....	33,329

COMMON SCHOOLS.

1	San Juan	1,515	740	472	267	159	101	41	33	3,328
	Rio Piedras	447	222	100	49	36	17	.....	.....	871
	District	1,962	962	572	316	195	118	41	33	4,199
2	Carolina	654	358	223	53	28	13	12	7	1,348
	Rio Grande	753	434	266	106	60	46	10	.....	1,675
	District	1,407	792	489	159	88	59	22	7	3,023
3	Fajardo	626	371	323	94	69	38	46	22	1,589
	Naguabo	274	134	116	66	17	11	.....	.....	618
	Vieques, Culebra	349	206	80	34	8	12	.....	.....	689
	District	1,249	711	519	194	94	61	46	22	2,896

TABLE VI.—*Distribution (pupils) by grades, common schools, high schools, and agricultural schools, and by age of pupils, special schools*—Continued.

COMMON SCHOOLS—Continued.

School district.	Locality.	Grade.								Enrollment.
		1	2	3	4	5	6	7	8	
4	Humacao	680	289	131	69	26	25	23	15	1,258
	Yabucoa	445	176	107	52	30	.....	35	13	858
	Patillas	443	121	52	20	7	.....	.....	.....	443
	District	1,368	586	290	141	63	25	58	28	2,559
5	Caguas	838	568	247	157	37	28	21	10	1,906
	San Lorenzo	566	207	153	110	25	.....	.....	.....	1,061
	Aguas Buenas	279	58	39	10	.....	.....	.....	.....	386
	District	1,683	833	439	277	62	28	21	10	3,353
6	Guayama	886	478	250	94	38	28	14	.....	1,788
	Cayey	772	327	225	97	63	24	27	.....	1,535
	District	1,658	805	475	191	101	52	41	.....	3,323
7	Aibonito	432	211	79	18	31	19	.....	.....	790
	Comerío	429	185	44	30	6	.....	.....	.....	694
	Barros	540	287	142	27	11	15	.....	.....	1,022
	District	1,401	683	265	75	48	34	.....	.....	2,506
8	Coamo	670	443	319	66	42	7	10	.....	1,557
	Juana Diaz	622	271	151	46	24	11	14	.....	1,139
	Santa Isabel	244	189	91	40	12	.....	.....	.....	576
	District	1,536	903	561	152	78	18	24	.....	3,272
9	Ponce	2,826	1,640	767	276	204	78	42	32	5,865
10	Yauco	928	351	217	86	74	31	15	.....	1,702
	Sabana Grande	461	270	84	44	22	32	18	.....	931
	District	1,389	621	301	130	96	63	33	.....	2,633
11	San German	737	340	235	89	101	34	26	14	1,576
	Lajas	388	187	123	38	21	9	.....	.....	766
	Cabo Rojo	695	301	158	67	20	19	.....	6	1,266
	District	1,820	828	516	194	142	62	26	20	3,608
12	Mayaguez	1,507	748	460	153	84	73	21	43	3,089
	Añasco	770	305	179	101	58	8	22	.....	1,443
	Maricao	316	108	64	15	.....	.....	.....	.....	503
	District	2,593	1,161	703	269	142	81	43	43	5,035
13	Aguadilla	1,075	537	321	71	19	16	12	5	2,056
	Aguada	369	132	74	30	11	.....	.....	.....	616
	Isabela	410	213	120	36	24	15	12	.....	830
	District	1,854	882	515	137	54	31	24	5	3,502
14	San Sebastian	607	263	145	32	27	9	.....	8	1,091
	Lares	545	250	130	44	56	11	17	.....	1,053
	Las Marías	429	143	46	18	.....	.....	.....	.....	636
	District	1,581	656	321	94	83	20	17	8	2,780
15	Utuado	768	557	381	108	28	13	8	.....	1,863
	Adjuntas	476	277	168	59	19	18	26	.....	1,043
	District	1,244	834	549	167	47	31	34	.....	2,906
16	Arecibo	1,510	646	368	68	51	23	.....	21	2,687
	Camuy	748	382	198	59	36	19	.....	.....	1,442
	District	2,258	1,028	566	127	87	42	.....	21	4,129
17	Manatí	655	411	147	89	18	19	.....	10	1,349
	Ciales	601	152	129	31	7	11	.....	.....	931
	Morovis	294	135	107	20	15	.....	.....	.....	571
	District	1,550	698	383	140	40	30	.....	10	2,851

TABLE VI.—*Distribution (pupils) by grades, common schools, high schools, and agricultural schools, and by age of pupils, special schools*—Continued.

COMMON SCHOOLS—Continued.

School district.	Locality.	Grade.								Enrollment.
		1	2	3	4	5	6	7	8	
18	Toa Alta	833	298	162	34	50	20	.....	.....	1,397
	Vega Baja	624	347	228	85	15	48	8	.....	1,355
	District	1,457	645	390	119	65	68	8	.....	2,752
19	Bayamon	2,034	752	398	77	35	10	14	.....	3,320
	Total	32,870	16,020	9,019	3,235	1,724	911	494	239	64,512

SPECIAL SCHOOLS—HIGH.

Locality.	Under 5 years.	5, 6, and 7 years.	8, 9, and 10 years.	11, 12, and 13 years.	14 to 18 years.	Over 18 years.	Enrollment.	9	10	11	12
San Juan	.....	.....	.....	4	62	5	71	37	13	16	5
Ponce	.....	.....	.....	3	38	2	43	18	15	10	.....
Mayaguez	.....	.....	.....	1	33	3	37	25	12	.....	.....
Total high	.....	.....	.....	8	133	10	151	80	40	26	5

SPECIAL SCHOOLS—INDUSTRIAL.

Locality.	Under 5 years.	5, 6, and 7 years.	8, 9, and 10 years.	11, 12, and 13 years.	14 to 18 years.	Over 18 years.	Enrollment.	Preparatory.	First year.	Second year.	Third year.
San Juan	.....	.....	.....	25	162	21	208	56	49	67	36
Guayama	.....	.....	.....	15	83	17	115	59	34	22	.....
Ponce	.....	.....	.....	26	127	1	154	40	46	37	31
Mayaguez	.....	.....	3	55	110	6	174	33	26	39	76
Arecibo	.....	.....	2	22	98	22	144	107	20	1	16
Total industrial	.....	.....	5	143	580	67	795	295	175	166	159

TABLE VI.—*Distribution (pupils) by grades, common schools, high schools, and agricultural schools, and by age of pupils, special schools*—Continued.

SPECIAL SCHOOLS—NIGHT.

District.	Under 5 years.	5, 6, and 7 years.	8, 9, and 10 years.	11, 12, and 13 years.	14 to 18 years.	Over 18 years.	Enrollment.	1	2	3	4	5	6
San Juan	....	.....	14	55	95	61	225	112	113	.....	....	....	....
Carolina	....	.....	7	18	18	.....	43	43	.....	.....	....	....	....
Rio Grande	....	.....	.....	3	19	18	40	23	17	.....	....	....	....
District	....	.....	7	21	37	18	83	66	17	.....	....	....	....
Fajardo	....	9	14	34	34	5	96	68	28	.....	....	....	....
Naguabo	....	.....	11	13	16	1	41	41	.....	.....	....	....	....
District	....	9	25	47	50	6	137	109	28	.....	....	....	....
Humacao	....	1	15	35	35	8	94	47	21	26	....	....	....
Caguas	....	.....	.....	12	63	2	77	77	.....	.....	....	....	....
San Lorenzo	....	.....	3	11	32	13	59	59	.....	.....	....	....	....
District	....	.....	3	23	95	15	136	136	.....	.....	....	....	....
Guayama	....	.....	2	23	66	20	111	69	.....	42	....	....	....
Caycy	....	.....	3	18	40	11	72	44	28	.....	....	....	....
District	....	.....	5	41	106	31	183	113	28	42	....	....	....
Aibonito	....	.....	.....	.....	10	10	20	20	.....	.....	....	....	....
Coamo	....	.....	1	18	22	11	52	19	33	.....	....	....	....
Juana Diaz	....	2	16	24	43	10	95	77	18	.....	....	....	....
District	....	2	17	42	65	21	147	96	51	.....	....	....	....
Ponce	....	.....	.....	.....	269	108	377	312	65	.....	....	....	....
Yauco	....	2	45	41	98	17	203	203	.....	.....	....	....	....
Sabana Grande	....	.....	23	37	28	1	89	89	.....	.....	....	....	....
District	....	2	68	78	126	18	292	292	.....	.....	....	....	....
San German	....	.....	.....	11	34	38	83	42	28	13	....	....	....
Lajas	....	.....	.....	.....	22	15	37	16	13	5	3	....	....
District	....	.....	.....	11	56	53	120	58	41	18	3	....	....
Mayaguez	....	.....	.....	15	57	13	85	36	35	14	....	....	....
Añasco	....	.....	.....	8	50	29	87	65	22	.....	....	....	....
District	....	.....	.....	23	107	42	172	101	57	14	....	....	....
Aguadilla	....	.....	.....	7	64	32	103	77	26	.....	....	....	....
San Sebastian	....	.....	.....	18	44	34	96	48	31	17	....	....	....
Lares	....	1	12	30	49	28	120	91	25	4	....	....	....
District	....	1	12	48	93	62	216	139	56	21	....	....	....
Utuado	....	.....	2	5	30	56	93	50	34	9	....	....	....
Adjuntas	....	.....	.....	9	24	26	59	40	19	.....	....	....	....
District	....	.....	2	14	54	82	152	90	53	9	....	....	....
Arecibo	....	.....	.....	1	9	37	47	47	.....	.....	....	....	....
Manati	....	.....	.....	6	23	47	76	50	26	.....	....	....	....
Toa Alta	....	.....	.....	.....	6	44	50	35	15	.....	....	....	....
Bayamon	....	1	.....	18	47	29	95	32	11	43	....	....	9
Total night	....	16	168	470	1,347	724	2,725	1,932	608	173	3	....	9

TABLE VI.—*Distribution (pupils) by grades, common schools, high schools, and agricultural schools, and by age of pupils, special schools*—Continued.

SPECIAL SCHOOLS—AGRICULTURAL.

District.	Under 5 years.	5, 6, and 7 years.	8, 9, and 10 years.	11, 12, and 13 years.	14 to 18 years.	Over 18 years.	Enrollment.	1	2	3	4	5	6
Carolina	....	11	16	20	9	.....	56	30	13	13	....	....	....
Guayama	4	15	25	11	2	.....	57	52	5	.....	....	....	....
Barros	....	13	34	37	27	.....	111	44	16	21	22	....	8
Ponce	....	.....	8	37	20	.....	65	15	40	10	....	....	....
Sabana Grande	....	5	27	23	1	.....	56	40	16	.....	....	....	....
Lajas	....	12	35	14	5	.....	66	45	15	6	....	....	....
Cabo Rojo	....	9	28	19	11	.....	67	39	20	8	....	....	....
Camuy	....	9	19	19	14	.....	61	29	32	.....	....	....	....
Toa Alta	....	7	34	22	6	.....	69	27	27	.....	15	....	....
Bayamon	....	14	24	20	6	.....	64	30	21	13	....	....	....
Total agricultural....	4	95	250	222	101	.....	672	351	205	71	37	....	8

SUMMARY ISLAND, SPECIAL SCHOOLS.

Under 5 years	4
5, 6, and 7 years	111
8, 9, and 10 years	423
11, 12, and 13 years	843
14 to 18 years	2,161
Over 18 years	801
Enrollment	4,343

TABLE VII.—*Distribution (pupils) by age, common schools, and special schools, including reënrollment.*

School Year, 1904-5.

GRADED SCHOOLS.

School district.	Locality.	Age (years).						Enrollment.
		Under 5.	5, 6, and 7.	8, 9, and 10.	11, 12, and 13.	14 to 18.	Over 18.	
1	San Juan	.....	327	962	1,128	392	5	2,814
	Rio Piedras	.....	12	112	178	69	.....	371
	District	.....	339	1,074	1,306	461	5	3,185
2	Carolina	2	97	166	181	68	2	516
	Rio Grande	.....	68	152	177	87	.....	484
	District	2	165	318	358	155	2	1,000
3	Fajardo	.....	147	364	334	152	8	1,005
	Naguabo	.....	13	71	92	41	.....	217
	Vieques	.....	52	145	123	26	.....	346
	Culebra							
	District	.....	212	580	549	219	8	1,568
4	Humacao	1	93	246	235	57	1	633
	Yabucoa	.....	17	100	161	66	.....	344
	Patillas	.....	7	59	53	9	.....	128
	District	1	117	405	449	132	1	1,105
5	Caguas	.....	50	394	376	108	1	929
	San Lorenzo	.....	152	259	125	13	.....	549
	Aguas Buenas	.....	19	46	50	16	.....	131
	District	.....	221	699	551	137	1	1,609

TABLE VII.—*Distribution (pupils) by age, common schools, and special schools, including reënrollment*—Continued.

GRADED SCHOOLS—Continued.

School district.	Locality.	Age (years).						Enrollment.
		Under 5.	5, 6, and 7.	8, 9, and 10.	11, 12, and 13.	14 to 18.	Over 18.	
6	Guayama	.....	103	449	452	113	2	1,119
	Caycy	.....	90	345	355	113	3	906
	District	.....	193	794	807	226	5	2,025
7	Aibonito	.....	55	186	130	13	.....	384
	Comerio	1	60	130	106	25	.....	322
	Barros	1	79	106	94	47	.....	327
	District	2	194	422	330	85	.....	1,033
8	Coamo	.....	130	279	222	33	.....	664
	Juana Diaz	.....	52	125	177	52	.....	406
	Santa Isabel	.....	35	104	114	32	.....	285
	District	.....	217	508	513	117	.....	1,355
9	Ponce	.....	243	1,173	1,447	575	.....	3,438
10	Yauco	.....	140	316	272	121	2	851
	Sabana Grande	.....	52	184	184	111	.....	531
	District	.....	192	500	456	232	2	1,382
11	San German	.....	80	259	288	171	6	804
	Lajas	.....	42	77	97	49	.....	265
	Cabo Rojo	2	98	253	173	64	.....	590
	District	2	220	589	558	284	6	1,659
12	Mayaguez	.....	155	605	601	257	1	1,619
	Añasco	.....	117	244	238	99	.....	698
	Maricao	1	64	58	36	21	.....	180
	District	1	336	907	875	377	1	2,497
13	Aguadilla	1	115	388	344	128	3	979
	Aguada	.....	58	84	83	35	1	261
	Isabela	.....	59	82	93	41	.....	275
	District	1	232	554	520	204	4	1,515
14	San Sebastian	.....	77	154	118	30	.....	379
	Lares	.....	49	140	119	82	1	391
	Las Marias	.....	50	52	11	3	.....	116
	District	.....	176	346	248	115	1	886
15	Utuado	.....	93	208	214	80	.....	595
	Adjuntas	.....	95	156	114	80	.....	445
	District	.....	188	364	328	160	.....	1,040
16	Arecibo	.....	142	457	481	154	2	1,236
	Camuy	.....	175	273	193	96	36	773
	District	.....	317	730	674	250	38	2,009
17	Manati	.....	21	209	271	78	.....	579
	Ciales	2	91	139	109	30	.....	371
	Morovis	.....	10	50	53	20	.....	133
	District	2	122	398	433	128	.....	1,083
18	Toa Alta	.....	181	257	140	46	.....	624
	Vega Baja	.....	199	298	169	72	.....	738
	District	.....	380	555	309	118	.....	1,362
19	Bayamon	15	334	588	360	135	.....	1,432
	Total	26	4,398	11,504	11,071	4,110	74	31,183

TABLE VII.—*Distribution (pupils) by age, common schools, and special schools, including reënrollment*—Continued.

RURAL SCHOOLS.

School district.	Locality.	Age (years).						Enrollment.
		Under 5.	5, 6, and 7.	8, 9, and 10.	11, 12, and 13.	14 to 18.	Over 18.	
1	San Juan	.....	118	204	154	38	.....	514
	Rio Piedras	2	71	211	157	57	2	500
	District	2	189	415	311	95	2	1,014
2	Carolina	.....	174	317	256	84	1	832
	Rio Grande	½	235	473	358	122	1	1,191
	District	2	409	790	614	206	2	2,023
3	Fajardo	.....	120	223	169	72	.....	584
	Naguabo	.....	62	144	129	66	.....	401
	Vieques, Culebra	.....	115	164	58	6	.....	343
	District	.....	297	531	356	144	.....	1,328
4	Humacao	6	194	230	146	47	2	625
	Yabucoa	.....	104	249	146	15	.....	514
	Patillas	2	83	132	78	19	1	315
	District	8	381	611	370	81	3	1,454
5	Caguas	2	231	449	272	23	.....	977
	San Lorenzo	.....	131	233	122	26	.....	512
	Aguas Buenas	.....	49	121	63	22	.....	255
	District	2	411	803	457	71	.....	1,744
6	Guayama	.....	122	274	226	47	.....	669
	Cayey	.....	120	285	188	36	.....	629
	District	.....	242	559	414	83	.....	1,298
7	Aibonito	.....	67	169	129	41	.....	406
	Comerio	4	99	161	99	9	.....	372
	Barros	.....	132	274	207	82	.....	695
	District	4	298	604	435	132	.....	1,473
8	Coamo	.....	99	355	354	85	.....	893
	Juana Diaz	2	87	309	264	71	.....	733
	Santa Isabel	.....	58	125	90	18	.....	291
	District	2	244	789	708	174	.....	1,917
9	Ponce	.....	331	956	895	243	2	2,427
10	Yauco	.....	146	353	289	63	.....	851
	Sabana Grande	.....	81	191	110	18	.....	400
	District	.....	227	544	399	81	.....	1,251
11	San German	1	173	286	241	71	.....	772
	Lajas	2	81	193	159	59	7	501
	Cabo Rojo	1	116	283	224	52	.....	676
	District	4	370	762	624	182	7	1,949
12	Mayaguez	.....	223	593	534	120	.....	1,470
	Añasco	.....	159	282	250	54	.....	745
	Maricao	1	83	120	106	13	.....	323
	District	1	465	995	890	187	.....	2,538
13	Aguadilla	.....	128	419	369	159	2	1,077
	Aguada	.....	72	153	99	31	.....	355
	Isabela	.....	68	224	177	86	.....	555
	District	.....	268	796	645	276	2	1,987
14	San Sebastian	4	121	292	230	64	1	712
	Lares	.....	93	277	197	94	1	662
	Las Marias	.....	91	197	172	60	.....	520
	District	4	305	766	599	218	2	1,894

TABLE VII.—*Distribution (pupils) by age, common schools, and special schools, including reënrollment*—Continued.

RURAL SCHOOLS—Continued.

School district.	Locality.	Age (years).						Enrollment.
		Under 5.	5, 6, and 7.	8, 9, and 10.	11, 12, and 13.	14 to 18.	Over 18.	
15	Utuado	1	197	505	394	170	1	1,268
	Adjuntas	.....	97	229	208	64	.....	598
	District	1	294	734	602	234	1	1,866
16	Arecibo	6	193	639	479	134	.....	1,451
	Camuy	.....	93	257	239	80	.....	669
	District	6	286	896	718	214	.....	2,120
17	Manati	.....	149	317	238	65	1	770
	Ciales	1	87	245	169	58	.....	560
	Morovis	.....	71	160	149	58	.....	438
	District	1	307	722	556	181	1	1,768
18	Toa Alta	1	138	301	262	71	.....	773
	Vega Baja	.....	119	249	209	40	.....	617
	District	1	257	550	471	111	.....	1,390
19	Bayamon	3	357	811	545	171	1	1,888
	Total	41	5,938	13,634	10,609	3,084	23	33,329

COMMON SCHOOLS.

1	San Juan	.....	445	1,166	1,282	430	5	3,328
	Rio Piedras	2	83	323	335	126	2	871
	District	2	528	1,489	1,617	556	7	4,199
2	Carolina	2	271	483	437	152	3	1,348
	Rio Grande	2	303	625	535	209	1	1,675
	District	4	574	1,108	972	361	4	3,023
3	Fajardo	.....	267	587	503	224	8	1,589
	Naguabo	.....	75	215	221	107	.....	618
	Vieques / Culebra	.....	167	309	181	32	.....	689
	District	.....	509	1,111	905	363	8	2,896
4	Humacao	7	287	476	381	104	3	1,258
	Yabucoa	.....	121	349	307	81	.....	858
	Patillas	2	90	191	131	28	1	443
	District	9	498	1,016	819	213	4	2,559
5	Caguas	2	281	843	648	131	1	1,906
	San Lorenzo	.....	283	492	247	39	.....	1,061
	Aguas Buenas	.....	68	167	113	38	.....	386
	District	2	632	1,502	1,008	208	1	3,353
6	Guayama	.....	225	723	678	160	2	1,788
	Cayey	.....	210	630	543	149	3	1,535
	District	.....	435	1,353	1,221	309	5	3,323
7	Aibonito	.....	122	355	259	54	.....	790
	Comerio	5	159	291	205	34	.....	694
	Barros	1	211	380	301	129	.....	1,022
	District	6	492	1,026	765	217	.....	2,506
8	Coamo	.....	229	634	576	118	.....	1,557
	Juana Diaz	2	139	434	441	123	.....	1,139
	Santa Isabel	.....	93	229	204	50	.....	576
	District	2	461	1,297	1,221	291	.....	3,272
9	Ponce	.....	574	2,129	2,342	818	2	5,865

TABLE VII.—*Distribution (pupils) by age, common schools, and special schools, including reënrollment*—Continued.

COMMON SCHOOLS—Continued.

School district.	Locality.	Age (years).						Enrollment.
		Under 5.	5, 6, and 7.	8, 9, and 10.	11, 12, and 13.	14 to 18.	Over 18.	
10	Yauco	.....	286	669	561	184	2	1,702
	Sabana Grande	.....	133	375	294	129	.....	931
	District	.....	419	1,044	855	313	2	2,633
11	San German	1	253	545	529	242	6	1,576
	Lajas	2	123	270	256	108	7	766
	Cabo Rojo	3	214	536	397	116	.....	1,266
	District	6	590	1,351	1,182	466	13	3,608
12	Mayaguez	.....	378	1,198	1,135	377	1	3,089
	Añasco	.....	276	526	488	153	.....	1,443
	Maricao	2	147	178	142	34	.....	503
	District	2	801	1,902	1,765	564	1	5,035
13	Aguadilla	1	243	807	713	287	5	2,056
	Aguada	.....	130	237	182	66	1	616
	Isabela	.....	127	306	270	127	.....	830
	District	1	500	1,350	1,165	480	6	3,502
14	San Sebastian	4	198	446	348	94	1	1,091
	Lares	.....	142	417	316	176	2	1,053
	Las Marias	.....	141	249	183	63	.....	636
	District	4	481	1,112	847	333	3	2,780
15	Utuado	1	290	713	608	250	1	1,863
	Adjuntas	.....	192	385	322	144	.....	1,043
	District	1	482	1,098	930	394	1	2,906
16	Arecibo	6	335	1,096	960	288	2	2,687
	Camuy	.....	268	530	432	176	36	1,442
	District	6	603	1,626	1,392	464	38	4,129
17	Manati	.....	170	526	509	143	1	1,349
	Ciales	3	178	384	278	88	.....	931
	Morovis	.....	81	210	202	78	.....	571
	District	3	429	1,120	989	309	1	2,851
18	Toa Alta	1	319	558	402	117	.....	1,397
	Vega Baja	.....	318	547	378	112	.....	1,355
	District	1	637	1,105	780	229	.....	2,752
19	Bayamon	18	691	1,399	905	306	1	3,320
	Total	67	10,336	25,138	21,680	7,194	97	64,512

SPECIAL SCHOOLS.

1	San Juan	.....	.....	14	84	319	87	504
2	Carolina	.....	11	23	38	27	.....	99
	Rio Grande	.....	.....	.....	3	19	18	40
	District	.....	11	23	41	46	18	139
3	Fajardo	.....	9	14	34	34	5	96
	Naguabo	.....	.....	11	13	16	1	41
	District	.....	9	25	47	50	6	137
4	Humacao	.....	1	15	35	35	8	94
5	Caguas	.....	.....	.....	12	63	2	77
	San Lorenzo	.....	.....	3	11	32	13	59
	District	.....	.....	3	23	95	15	136

TABLE VII.—*Distribution (pupils) by age, common schools, and special schools, including reënrollment*—Continued.

SPECIAL SCHOOLS—Continued.

School district.	Locality.	Age (years).						Enrollment.
		Under 5.	5, 6, and 7.	8, 9, and 10.	11, 12, and 13.	14 to 18.	Over 18.	
6	Guayama	4	15	27	49	151	37	283
	Cayey	.....	.....	3	18	40	11	72
	District	4	15	30	67	191	48	355
7	Aibonito	.....	.....	.....	.....	10	10	20
	Barros	.....	13	34	37	27	.....	111
	District	.....	13	34	37	37	10	131
8	Coamo	.....	.....	1	18	22	11	52
	Juana Diaz	.....	2	16	24	43	10	95
	District	.....	2	17	42	65	21	147
9	Ponce	.....	.....	8	66	454	111	639
10	Yauco	.....	2	45	41	98	17	203
	Sabana Grande	.....	5	50	60	29	1	145
	District	.....	7	95	101	127	18	348
11	San German	.....	.....	.....	11	34	38	83
	Lajas	.....	12	35	14	27	15	103
	Cabo Rojo	.....	9	28	19	11	.....	67
	District	.....	21	63	44	72	53	253
12	Mayaguez	.....	.....	3	71	200	22	296
	Añasco	.....	.....	.....	8	50	29	87
	District	.....	.....	3	79	250	51	383
13	Aguadilla	.....	.....	.....	7	64	32	103
14	San Sebastian	.....	.....	.....	18	44	34	96
	Lares	.....	1	12	30	49	28	120
	District	.....	1	12	48	93	62	216
15	Utuado	.....	.....	2	5	30	56	93
	Adjuntas	.....	.....	.....	9	24	26	59
	District	.....	.....	2	14	54	82	152
16	Arecibo	.....	.....	2	23	107	59	191
	Camuy	.....	9	19	19	14	.....	61
	District	.....	9	21	42	121	59	252
17	Manati	.....	.....	.....	6	23	47	76
18	Toa Alta	.....	7	34	22	12	44	119
19	Bayamon	.....	15	24	38	53	29	159
	Total	4	111	423	843	2,161	801	4,343

COMMON SCHOOLS AND SPECIAL SCHOOLS.

1	San Juan	.....	445	1,180	1,366	749	92	3,832
	Rio Piedras	2	83	323	335	126	2	871
	District	2	528	1,503	1,701	875	94	4,703
2	Carolina	2	282	506	475	179	3	1,447
	Rio Grande	2	303	625	538	228	19	1,715
	District	4	585	1,131	1,013	407	22	3,162
3	Fajardo	.....	276	601	537	258	13	1,685
	Naguabo	.....	75	226	234	123	1	659
	Vieques	.....	167	309	181	32	.....	689
	Culebra	.....						
	District	.....	518	1,136	952	413	14	3,033

TABLE VII.—*Distribution (pupils) by age, common schools, and special schools, including reënrollment*—Continued.

COMMON SCHOOLS AND SPECIAL SCHOOLS—Continued.

School district.	Locality.	Age (years).						Enrollment.
		Under 5.	5, 6, and 7.	8, 9, and 10.	11, 12, and 13.	14 to 18.	Over 18.	
4	Humacao	7	288	491	416	139	11	1,352
	Yabucoa	.....	121	349	307	81	.....	858
	Patillas	2	90	191	131	28	1	443
	District	9	499	1,031	854	248	12	2,653
5	Caguas	2	281	843	660	194	3	1,983
	San Lorenzo	.....	283	495	258	71	13	1,120
	Aguas Buenas	.....	68	167	113	38	.....	386
	District	2	632	1,505	1,031	303	16	3,489
6	Guayama	4	240	750	727	311	39	2,071
	Cayey	.....	210	633	561	189	14	1,607
	District	4	450	1,383	1,288	500	53	3,678
7	Aibonito	.....	122	355	259	64	10	810
	Comerio	5	159	291	205	34	.....	694
	Barros	1	224	414	338	156	.....	1,133
	District	6	505	1,060	802	254	10	2,637
8	Coamo	.....	229	635	594	140	11	1,609
	Juana Diaz	2	141	450	465	166	10	1,234
	Santa Isabel	.....	93	229	204	50	.....	576
	District	2	463	1,314	1,263	356	21	3,419
9	Ponce	.....	574	2,137	2,408	1,272	113	6,504
10	Yauco	.....	288	714	602	282	19	1,905
	Sabana Grande	.....	138	425	354	158	1	1,076
	District	.....	426	1,139	956	440	20	2,981
11	San German	1	253	545	540	276	44	1,659
	Lajas	2	135	305	270	135	22	869
	Cabo Rojo	3	223	564	416	127	.....	1,333
	District	6	611	1,414	1,226	538	66	3,861
12	Mayaguez	.....	378	1,201	1,206	577	23	3,385
	Añasco	.....	276	526	496	203	29	1,530
	Maricao	2	147	178	142	34	.....	503
	District	2	801	1,905	1,844	814	52	5,418
13	Aguadilla	1	243	807	720	351	37	2,159
	Aguada	.....	130	237	182	66	1	616
	Isabela	.....	127	306	270	127	.....	830
	District	1	500	1,350	1,172	544	38	3,605
14	San Sebastian	4	198	446	366	138	35	1,187
	Lares	.....	143	429	346	225	30	1,173
	Las Marias	.....	141	249	183	63	.....	636
	District	4	482	1,124	895	426	65	2,996
15	Utuado	1	290	715	613	280	57	1,956
	Adjuntas	.....	192	385	331	168	26	1,102
	District	1	482	1,100	944	448	83	3,058
16	Arecibo	6	335	1,098	983	395	61	2,878
	Camuy	.....	277	549	451	190	36	1,503
	District	6	612	1,647	1,434	585	97	4,381
17	Manati	.....	170	526	515	166	48	1,425
	Ciales	3	178	384	278	88	.....	931
	Morovis	.....	81	210	202	78	.....	571
	District	3	429	1,120	995	332	48	2,927

TABLE VII.—*Distribution (pupils) by age, common schools, and special schools, including reënrollment*—Continued.

COMMON SCHOOLS AND SPECIAL SCHOOLS—Continued.

School district.	Locality.	Age (years).						Enrollment.
		Under 5.	5, 6, and 7.	8, 9, and 10.	11, 12, and 13.	14 to 18.	Over 18.	
18	Toa Alta	1	326	592	424	129	44	1,516
	Vega Baja	.....	318	547	378	112	.....	1,355
	District	1	644	1,139	802	241	44	2,871
19	Bayamon	18	706	1,423	943	359	30	3,479
	Total	71	10,447	25,561	22,523	9,355	898	68,855

PRISON RURAL SCHOOLS (ALL MALES).

	Enrollment.			Age (years).					Grade.		
	White.	Colored.	Total.	8, 9, and 10	11, 12, and 13	14 to 18	Over 18	Total.	1	2	Total.
San Juan	144	151	295	5	49	120	121	295	179	116	295
Ponce	119	33	152	1	8	28	115	152	119	33	152
Total	263	184	447	6	57	148	236	447	298	149	447

AVERAGE DAILY ENROLLMENT AND AVERAGE DAILY ATTENDANCE.

	Average daily enrollment per school.	Average daily attendance per school.
San Juan	50.25	50.08
Ponce	40.90	38.41
Total	49.81	47.59

TABLE VIII.—*Distribution (teachers) by sex and color, common schools and special schools.*

School year 1904–5.

COMMON SCHOOLS.

School district.	Locality.	Males.							Females.							Grand total.
		Principal.	Graded.	Rural.	English.	Agricultural.	Music and drawing.	Total.	Principal.	Graded.	Rural.	English.	Agricultural.	Music and drawing.	Total.	
	WHITE.															
1	San Juan	3	6	1	1	....	....	11	3	47	7	7	....	5	69	80
	Rio Piedras	1	4	3	1	....	....	9	....	1	3	1	....	....	5	14
	District	4	10	4	2	....	....	20	3	48	10	8	....	5	74	94
2	Carolina	1	4	13	2	1	....	21	....	3	....	....	....	....	3	24
	Rio Grande	....	5	15	1	....	....	21	....	3	3	1	....	....	7	28
	District	1	9	28	3	1	....	42	....	6	3	1	....	....	10	52
3	Fajardo	1	6	7	1	....	....	15	....	6	3	1	....	....	10	25
	Naguabo	....	1	4	....	....	....	5	....	1	1	1	....	....	3	8
	Vieques	....	3	3	1	....	....	7	....	1	2	....	....	....	3	10
	District	1	10	14	2	....	....	27	....	8	6	2	....	....	16	43
4	Humacao	1	5	7	1	....	....	14	....	5	4	2	....	....	11	25
	Yabucoa	1	3	5	1	....	....	10	....	3	4	1	....	....	8	18
	Patillas	....	1	4	1	....	....	6	....	1	1	....	....	....	2	8
	District	2	9	16	3	....	....	30	....	9	9	3	....	....	21	51
5	Caguas	1	8	8	1	....	....	18	....	6	4	3	....	....	13	31
	San Lorenzo	....	4	7	1	....	....	12	....	3	1	1	....	....	5	17
	Aguas Buenas	....	....	3	....	....	....	3	....	1	1	1	....	....	3	6
	District	1	12	18	2	....	....	33	....	10	6	5	....	....	21	54
6	Guayama	2	7	6	2	1	....	18	....	6	3	2	....	....	11	29
	Cayey	1	11	3	....	....	....	15	....	3	5	2	....	....	10	25
	District	3	18	9	2	1	....	33	....	9	8	4	....	....	21	54
7	Aibonito	....	3	6	1	....	....	10	....	2	1	....	....	....	3	13
	Comerio	....	3	6	2	....	....	11	....	1	1	....	....	....	2	13
	Barros	....	6	10	1	2	....	19	....	....	....	1	....	....	1	20
	District	....	12	22	4	2	....	40	....	3	2	1	....	....	6	46
8	Coamo	....	4	13	....	....	....	17	....	4	3	2	....	....	9	26
	Juana Diaz	....	2	8	....	....	....	10	....	3	3	2	....	....	8	18
	Santa Isabel	....	3	2	1	....	....	6	....	1	2	....	....	....	3	9
	District	....	9	23	1	....	....	33	....	8	8	4	....	....	20	53
9	Ponce	5	10	19	....	1	....	35	....	34	20	1	....	3	58	93
10	Yauco	1	6	10	1	....	....	18	....	6	3	2	....	....	11	29
	Sabana Grande	1	5	2	....	....	....	8	....	2	5	1	....	....	8	16
	District	2	11	12	1	....	....	26	....	8	8	3	....	....	19	45
11	San German	1	3	1	1	....	....	6	....	6	6	2	....	....	14	20
	Lajas	....	....	9	....	....	....	9	....	1	1	....	....	....	2	11
	Cabo Rojo	....	4	12	1	....	....	17	....	1	2	....	....	....	3	20
	District	1	7	22	2	....	....	32	....	8	9	2	....	....	19	51
12	Mayaguez	1	11	10	....	....	....	22	....	10	13	3	....	2	28	50
	Añasco	1	6	7	1	....	....	15	....	2	4	....	....	....	6	21
	Maricao	....	2	3	2	....	....	7	....	....	....	....	....	....	....	7
	District	2	19	20	3	....	....	44	....	12	17	3	....	2	34	78
13	Aguadilla	1	4	13	....	....	....	18	....	6	2	3	....	....	11	29
	Aguada	....	2	5	1	....	....	8	....	1	1	....	....	....	2	10
	Isabela	....	4	6	....	....	....	10	....	....	3	1	....	....	4	14
	District	1	10	24	1	....	....	36	....	7	6	4	....	....	17	53

TABLE VIII.—*Distribution (teachers) by sex and color, common schools and special schools*—Continued.

COMMON SCHOOLS—Continued.

School district.	Locality.	Males.							Females.							Grand total.
		Principal.	Graded.	Rural.	English.	Agricultural.	Music and drawing.	Total.	Principal.	Graded.	Rural.	English.	Agricultural.	Music and drawing.	Total.	
	WHITE—continued.															
14	San Sebastian	1	3	10	1	....	....	15	....	1	2	....	....	....	3	18
	Lares	1	4	5	....	....	....	10	....	.....	5	1	....	....	6	16
	Las Marias	....	1	4	1	....	....	6	....	1	1	....	....	....	2	8
	District	2	8	19	2	....	....	31	....	2	8	1	....	....	11	42
15	Utuado	1	7	19	2	....	....	29	....	2	2	....	....	....	4	33
	Adjuntas	....	4	7	....	....	....	11	....	2	2	2	....	....	6	17
	District	1	11	26	2	....	....	40	....	4	4	2	....	....	10	50
16	Arecibo	1	8	16	....	....	....	25	....	9	4	3	....	....	16	41
	Camuy	....	9	9	1	1	....	20	....	2	3	2	....	....	7	27
	District	1	17	25	1	1	....	45	....	11	7	5	....	....	23	68
17	Manati	....	5	9	1	....	....	15	....	6	2	1	....	....	9	24
	Cranes	....	3	6	1	....	....	10	....	2	2	....	....	....	4	14
	Morovis	....	.....	6	....	....	....	6	....	.....	1	....	....	....	1	7
	District	....	8	21	2	....	....	31	....	8	5	1	....	....	14	45
18	Toa Alta	....	3	7	3	1	....	14	....	5	3	....	....	....	8	22
	Vega Baja	....	6	6	1	....	....	13	....	1	1	1	....	....	3	16
	District	....	9	13	4	1	....	27	....	6	4	1	....	....	11	38
19	Bayamon	1	1	17	3	1	....	23	....	8	8	1	....	....	17	40
	Total	28	200	352	40	8	....	628	3	209	148	52	....	10	422	1,050
	COLORED.															
1	San Juan	....	1	1	....	....	....	2	....	1	2	....	....	....	3	5
	Rio Piedras	....	1	.....	....	....	....	1	....	.....	2	....	....	....	2	3
	District	....	2	1	....	....	....	3	....	1	4	....	....	....	5	8
2	Rio Grande	....	.....	.....	....	....	....	.....	....	.....	1	....	....	....	1	1
3	Fajardo	....	1	.....	....	....	....	1	....	1	.....	....	....	....	1	2
	Naguabo	....	1	.....	....	....	....	1	....	.....	.....	....	....	....	.....	1
	Vieques	....	1	.....	....	....	....	1	....	.....	1	....	....	....	1	2
	District	....	3	.....	....	....	....	3	....	1	1	....	....	....	2	5
5	Caguas	....	.....	1	....	....	....	1	....	.....	1	....	....	....	1	2
	San Lorenzo	....	1	.....	....	....	....	1	....	1	.....	....	....	....	1	2
	Aguas Buenas	....	.....	.....	....	....	....	.....	....	1	.....	....	....	....	1	1
	District	....	1	1	....	....	....	2	....	2	1	....	....	....	3	5
6	Guayama	....	1	2	....	....	....	3	....	1	.....	....	....	....	1	4
	Cayey	....	.....	1	....	....	....	1	....	.....	1	....	....	....	1	2
	District	....	1	3	....	....	....	4	....	1	1	....	....	....	2	6
7	Aibonito	....	1	.....	....	....	....	1	....	.....	.....	....	....	....	.....	1
	Barros	....	.....	2	....	....	....	2	....	.....	.....	....	....	....	.....	2
	District	....	1	2	....	....	....	3	....	.....	.....	....	....	....	.....	3
8	Coamo	....	1	.....	....	....	....	1	....	.....	.....	....	....	....	.....	1
	Juana Diaz	....	.....	1	....	....	....	1	....	1	.....	....	....	....	1	2
	Santa Isabel	....	.....	1	....	....	....	1	....	.....	.....	....	....	....	.....	1
	District	....	1	2	....	....	....	3	....	1	.....	....	....	....	1	4
9	Ponce	....	1	2	....	....	....	3	....	1	2	....	....	....	3	6

TABLE VIII.—*Distribution (teachers) by sex and color, common schools and special schools*—Continued.

COMMON SCHOOLS—Continued.

School district.	Locality.	Males.							Females.							Grand total.
		Principal.	Graded.	Rural.	English.	Agricultural.	Music and drawing.	Total.	Principal.	Graded.	Rural.	English.	Agricultural.	Music and drawing.	Total.	
	COLORED—continued.															
10	Sabana Grande	....	.....	.....	....	1	....	1	....	.....	1	....	....	....	1	2
11	San German	....	.....	3	....	....	....	3	....	1	4	....	....	....	5	8
	Lajas	....	1	1	....	....	....	2	....	.....	.....	....	....	....	.....	2
	Cabo Rojo	1	.....	2	....	....	....	3	....	.....	.....	....	....	....	.....	3
	District	1	1	6	....	....	....	8	....	1	4	....	....	....	5	13
12	Mayaguez	....	.....	1	....	....	....	1	....	1	2	....	....	....	3	4
	Maricao	....	.....	2	....	....	....	2	....	.....	.....	....	....	....	.....	2
	District	....	.....	3	....	....	....	3	....	1	2	....	....	....	3	6
13	Aguadilla	....	2	2	....	....	....	4	....	.....	.....	....	....	....	.....	4
	Aguada	....	.....	1	....	....	....	1	....	1	.....	....	....	....	1	2
	Isabela	....	.....	.....	....	....	....	.....	....	1	.....	....	....	....	1	1
	District	....	2	3	....	....	....	5	....	2	.....	....	....	....	2	7
14	Las Marias	....	.....	3	....	....	....	3	....	.....	.....	....	....	....	.....	3
15	Utuado	....	.....	.....	....	....	....	.....	....	.....	1	....	....	....	1	1
	Adjuntas	1	.....	.....	....	....	....	1	....	.....	.....	....	....	....	.....	1
	District	1	.....	.....	....	....	....	1	....	.....	1	....	....	....	1	2
16	Arecibo	....	.....	2	....	....	....	2	....	1	2	....	....	....	3	5
	Camuy	....	1	.....	....	....	....	1	....	.....	.....	....	....	....	.....	1
	District	....	1	2	....	....	....	3	....	1	2	....	....	....	3	6
17	Manati	....	.....	2	....	....	....	2	....	.....	1	....	....	....	1	3
	Morovis	....	1	.....	....	....	....	1	....	1	.....	....	....	....	1	2
	District	....	1	2	....	....	....	3	....	1	1	....	....	....	2	5
18	Toa Alta	....	1	.....	....	....	....	1	....	.....	.....	....	....	....	.....	1
	Vega Baja	....	1	2	....	....	....	3	....	.....	2	....	....	....	2	5
	District	....	2	2	....	....	....	4	....	.....	2	....	....	....	2	6
19	Bayamon	1	3	2	....	....	....	6	....	4	3	1	....	....	8	14
	Total	3	20	34	....	1	....	58	....	17	26	1	....	....	44	102

TABLE VIII.—*Distribution (teachers) by sex and color, common schools and special schools*—Continued.

SPECIAL SCHOOLS, BY SEX.

School district.	Locality.	Males.					Females.					Grand total.
		High.	Night.[a]	Night.[b]	Industrial.	Total.	High.	Night.[a]	Night, exclusive of duplicates.[b]	Industrial.	Total.	
1	San Juan	5	1	....	5	10	2	4	.....	5	7	17
2	Carolina	....	1	....	....	....	....	....	.....	....	....	....
	Rio Grande	....	1	....	....	....	....	....	.....	....	....	....
	District	....	2	....	....	....	....	....	.....	....	....	....
3	Fajardo	....	1	....	....	....	....	....	.....	....	....	....
	Naguabo	....	1	....	....	....	....	....	.....	....	....	....
	District	....	2	....	....	....	....	....	.....	....	....	....
4	Humacao	....	3	....	....	....	....	....	.....	....	....	....
5	Caguas	....	1	....	....	....	....	....	.....	....	....	....
	San Lorenzo	....	1	....	....	....	....	....	.....	....	....	....
	District	....	2	....	....	....	....	....	.....	....	....	....
6	Guayama	....	....	1	4	5	....	....	.....	4	4	9
	Caycy	....	1	....	....	....	....	....	.....	....	....	....
	District	....	1	1	4	5	....	....	.....	4	4	9
7	Aibonito	....	1	....	....	....	....	....	.....	....	....	....
8	Coamo	....	1	....	....	....	....	....	.....	....	....	....
	Juana Diaz	....	1	....	....	....	....	....	.....	....	....	....
	District	....	2	....	....	....	....	....	.....	....	....	....
9	Ponce	3	1	....	4	7	1	5	.....	6	7	14
10	Yauco	....	3	....	....	....	....	....	.....	....	....	....
	Sabana Grande	....	....	....	....	....	....	1	.....	....	....	....
	District	....	3	....	....	....	....	1	.....	....	....	....
11	San German	....	1	....	....	....	....	....	.....	....	....	....
	Lajas	....	1	....	....	....	....	....	.....	....	....	....
	District	....	2	....	....	....	....	....	.....	....	....	....
12	Mayaguez	3	1	....	4	7	....	....	.....	4	4	11
	Añasco	....	1	....	....	....	....	....	.....	....	....	....
	District	3	2	....	4	7	....	....	.....	4	4	11
13	Aguadilla	....	1	....	....	....	....	....	.....	....	....	....
14	San Sebastian	....	1	....	....	....	....	....	.....	....	....	....
	Lares	....	1	....	....	....	....	....	.....	....	....	....
	District	....	2	....	....	....	....	....	.....	....	....	....
15	Utuado	....	1	....	....	....	....	....	.....	....	....	....
	Adjuntas	....	1	....	....	....	....	....	.....	....	....	....
	District	....	2	....	....	....	....	....	.....	....	....	....
16	Arecibo	....	1	....	2	2	....	....	.....	5	5	7
17	Manati	....	1	....	....	....	....	....	.....	....	....	....
18	Toa Alta	....	1	....	....	....	....	....	.....	....	....	....
19	Bayamon	....	2	....	....	....	....	....	.....	....	....	....
	Total	11	32	1	19	31	3	10	.....	24	27	58

[a] Duplicates, not included in totals.

[b] Not duplicates, included in totals.

TABLE VIII.—*Distribution (teachers) by sex and color, common schools and special schools*—Continued.

TEACHERS, BY COLOR.

School district.	Locality.	Principal.	Graded.	Rural.	English.	Agricultural.	Music and drawing.	High.	Industrial.	Night.[a]	Night, exclusive of duplicates.[b]	Total.
	WHITE.											
1	San Juan	6	53	8	8	....	5	7	10	5	.....	97
	Rio Piedras	1	5	6	2	....	.....	....	....	.....	.....	14
	District	7	58	14	10	....	5	7	10	5	.....	111
2	Carolina	1	7	13	2	1	.....	....	....	1	.....	24
	Rio Grande	....	8	18	2	....	.....	....	....	1	.....	28
	District	1	15	31	4	1	.....	....	....	2	.....	52
3	Fajardo	1	12	10	2	....	.....	....	....	1	.....	25
	Naguabo	....	2	5	1	....	.....	....	....	1	.....	8
	Vieques / Culebra	....	4	5	1	....	.....	....	....	.....	.....	10
	District	1	18	20	4	....	.....	....	....	2	.....	43
4	Humacao	1	10	11	3	....	.....	....	....	3	.....	25
	Yabucoa	1	6	9	2	....	.....	....	....	.....	.....	18
	Patillas	....	2	5	1	....	.....	....	....	.....	.....	8
	District	2	18	25	6	....	.....	....	....	3	.....	51
5	Caguas	1	14	12	4	....	.....	....	....	1	.....	31
	San Lorenzo	....	7	8	2	....	.....	....	....	1	.....	17
	Aguas Buenas	....	1	4	1	....	.....	....	....	.....	.....	6
	District	1	22	24	7	....	.....	....	....	2	.....	54
6	Guayama	2	13	9	4	1	.....	....	8	.....	1	38
	Cayey	1	14	8	2	....	.....	....	....	1	.....	25
	District	3	27	17	6	1	.....	....	8	1	1	63
7	Aibonito	....	5	7	1	....	.....	....	....	1	.....	13
	Comerio	....	4	7	2	....	.....	....	....	.....	.....	13
	Barros	....	6	10	2	2	.....	....	....	.....	.....	20
	District	....	15	24	5	2	.....	....	....	1	.....	46
8	Coamo	....	8	16	2	....	.....	....	....	1	.....	26
	Juana Diaz	....	5	11	2	....	.....	....	....	1	.....	18
	Santa Isabel	....	4	4	1	....	.....	....	....	.....	.....	9
	District	....	17	31	5	....	.....	....	....	2	.....	53
9	Ponce	5	44	39	1	1	3	4	10	6	.....	107
10	Yauco	1	12	13	3	....	.....	....	....	3	.....	29
	Sabana Grande	1	7	7	1	....	.....	....	....	1	.....	16
	District	2	19	20	4	....	.....	....	....	4	.....	45
11	San German	1	9	7	3	....	.....	....	....	1	.....	20
	Lajas	....	1	10	.....	....	.....	....	....	.....	.....	11
	Cabo Rojo	....	5	14	1	....	.....	....	....	.....	.....	20
	District	1	15	31	4	....	.....	....	....	1	.....	51
12	Mayaguez	1	21	23	3	....	2	3	8	1	.....	61
	Añasco	1	8	11	1	....	.....	....	....	1	.....	21
	Maricao	....	2	3	2	....	.....	....	....	.....	.....	7
	District	2	31	37	6	....	.....	3	8	2	.....	89
13	Aguadilla	1	10	15	3	....	.....	....	....	1	.....	29
	Aguada	....	3	6	1	....	.....	....	....	.....	.....	10
	Isabela	....	4	9	1	....	.....	....	....	.....	.....	14
	District	1	17	30	5	....	.....	....	....	1	.....	53

[a] Duplicates, not included in totals.

[b] Not duplicates, included in totals.

TABLE VIII.—*Distribution (teachers) by sex and color, common schools and special schools*—Continued.

TEACHERS, BY COLOR—Continued.

School district.	Locality.	Principal.	Graded.	Rural.	English.	Agricultural.	Music and drawing.	High.	Industrial.	Night.	Night, exclusive of duplicates.	Total.
	WHITE—continued.											
14	San Sebastian	1	4	12	1	....	.....	....	....	1	.....	18
	Lares	1	4	10	1	....	.....	....	....	1	.....	19
	Las Marias	....	2	5	1	....	.....	....	....	.....	.....	8
	District	2	10	27	3	....	.....	....	....	2	.....	42
15	Utuado	1	9	21	2	....	.....	....	....	1	.....	33
	Adjuntas	....	6	9	2	....	.....	....	....	1	.....	17
	District	1	15	30	4	....	.....	....	....	2	.....	50
16	Arecibo	1	17	20	3	....	.....	....	7	1	.....	48
	Camuy	....	11	12	3	1	.....	....	....	.....	.....	27
	District	1	28	32	6	1	.....	....	7	1	.....	75
17	Manati	....	11	11	2	....	.....	....	....	1	.....	24
	Ciales	....	5	8	1	....	.....	....	....	.....	.....	14
	Morovis	....	.....	7	.....	....	.....	....	....	.....	.....	7
	District	....	16	26	3	....	.....	....	....	1	.....	45
18	Toa Alta	....	8	10	3	1	.....	....	....	.....	.....	22
	Vega Baja	....	7	7	2	....	.....	....	....	.....	.....	16
	District	....	15	17	5	1	.....	....	....	.....	.....	38
19	Bayamon	1	9	25	4	1	.....	....	....	2	.....	40
	Total	31	409	500	92	8	10	14	43	40	1	1,108
	COLORED.											
1	San Juan	....	2	3	.....	....	.....	....	....	.....	.....	5
	Rio Piedras	....	1	2	.....	....	.....	....	....	.....	.....	3
	District	....	3	5	.....	....	.....	....	....	.....	.....	8
2	Rio Grande	....	.....	1	.....	....	.....	....	....	.....	.....	1
3	Fajardo	....	2	.....	.....	....	.....	....	....	.....	.....	2
	Naguabo	....	1	.....	.....	....	.....	....	....	.....	.....	1
	Vieques, Culebra	...	1	1	.....	....	.....	....	....	.....	.....	2
	District	....	4	1	.....	....	.....	....	....	.....	.....	5
5	Caguas	....	.....	2	.....	....	.....	....	....	.....	.....	2
	San Lorenzo	....	2	.....	.....	....	.....	....	....	.....	.....	2
	Aguas Buenas	....	1	.....	.....	....	.....	....	....	.....	.....	1
	District	....	3	2	.....	....	.....	....	....	.....	.....	5
6	Guayama	....	2	2	.....	....	.....	....	....	.....	.....	4
	Cayey	....	.....	2	.....	....	.....	....	....	.....	.....	2
	District	....	2	4	.....	....	.....	....	....	.....	.....	6
7	Aibonito	....	1	.....	.....	....	.....	....	....	.....	.....	1
	Barros	....	.....	2	.....	....	.....	....	....	.....	.....	2
	District	....	1	2	.....	....	.....	....	....	.....	.....	3
8	Coamo	....	1	.....	.....	....	.....	....	....	.....	.....	1
	Juana Diaz	....	1	1	.....	....	.....	....	....	.....	.....	2
	Santa Isabel	....	.....	1	.....	....	.....	....	....	.....	.....	1
	District	....	2	2	.....	....	.....	....	....	.....	.....	4
9	Ponce	....	2	4	.....	....	.....	....	....	.....	.....	6

TABLE VIII.—*Distribution (teachers) by sex and color, common schools and special schools*—Continued.

TEACHERS, BY COLOR—Continued.

School district.	Locality.	Principal.	Graded.	Rural.	English.	Agricultural.	Music and drawing.	High.	Industrial.	Night.	Night, exclusive of duplicates.	Total.
	COLORED—continued.											
10	Sabana Grande	....	.....	1	.....	1	.....	....	....	.....	.....	2
11	San German	....	1	7	.....	....	.....	....	....	.....	.....	2
	Lajas	....	1	1	.....	....	.....	....	....	1	.....	8
	Cabo Rojo	1	.....	2	.....	....	.....	....	....	....	.....	3
	District	1	2	10	.....	....	.....	....	....	1	.....	13
12	Mayaguez	....	1	3	.....	....	.....	....	....	.....	.....	4
	Maricao	....	.....	2	.....	....	.....	....	....	.....	.....	2
	District	....	1	5	.....	....	.....	....	....	.....	.....	6
13	Aguadilla	....	2	2	.....	....	.....	....	....	.....	.....	4
	Aguada	....	1	1	.....	....	.....	....	....	.....	.....	2
	Isabela	....	1	.....	.....	....	.....	....	....	.....	.....	1
	District	....	4	3	.....	....	.....	....	....	.....	.....	7
14	Las Marias	....	.....	3	.....	....	.....	....	....	.....	.....	3
15	Utuado	....	.....	1	.....	....	.....	....	....	.....	.....	1
	Adjuntas	1	.....	.....	.....	....	.....	....	....	.....	.....	1
	District	1	.....	1	.....	....	.....	....	....	.....	.....	2
16	Arecibo	....	1	4	.....	....	.....	....	....	.....	.....	5
	Camuy	....	1	.....	.....	....	.....	....	....	.....	.....	1
	District	....	2	4	.....	....	.....	....	....	.....	.....	6
17	Manati	....	.....	3	.....	....	.....	....	....	.....	.....	3
	Morovis	....	2	.....	.....	....	.....	....	....	.....	.....	2
	District	....	2	3	.....	....	.....	....	....	.....	.....	5
18	Toa Alta	....	1	.....	.....	....	.....	....	....	1	.....	1
	Vega Baja	....	1	4	.....	....	.....	....	....	.....	.....	5
	District	....	2	4	.....	....	.....	....	....	1	.....	6
19	Bayamon	1	7	5	1	....	.....	....	....	.....	.....	14
	Total	3	37	60	1	1	.....	....	....	2	.....	102

TABLE VIII.—*Distribution (teachers) by sex and color, common schools and special schools*—Continued.

TOTAL TEACHERS, ALL CLASSES.

School district.	Locality.	Principal.	Graded.	Rural	English.	Agricultural.	Music and drawing.	High.	Industrial.	Night. [a]	Night, exclusive of duplicates. [b]	Total number of teachers employed.
1	San Juan	6	55	11	8	.....	5	7	10	5	.....	102
	Rio Piedras	1	6	8	2	.....	.....	.....	.....	.....	.....	17
	District	7	61	19	10	.....	5	7	10	5	.....	119
2	Carolina	1	7	13	2	1	.....	.....	.....	1	.....	24
	Rio Grande	.....	8	19	2	.....	.....	.....	.....	1	.....	29
	District	1	15	32	4	1	.....	.....	.....	2	.....	53
3	Fajardo	1	14	10	2	.....	.....	.....	.....	1	.....	27
	Naguabo	.....	3	5	1	.....	.....	.....	.....	1	.....	9
	Vieques, Culebra	.....	5	6	1	.....	.....	.....	.....	.....	.....	12
	District	1	22	21	4	.....	.....	.....	.....	2	.....	48
4	Humacao	1	10	11	3	.....	.....	.....	.....	3	.....	25
	Yabucoa	1	6	9	2	.....	.....	.....	.....	.....	.....	18
	Patillas	.....	2	5	1	.....	.....	.....	.....	.....	.....	8
	District	2	18	25	6	.....	.....	.....	.....	3	.....	51
5	Caguas	1	14	14	4	.....	.....	.....	.....	1	.....	33
	San Lorenzo	.....	9	8	2	.....	.....	.....	.....	1	.....	19
	Aguas Buenas	.....	2	4	1	.....	.....	.....	.....	.....	.....	7
	District	1	25	26	7	.....	.....	.....	.....	2	.....	59
6	Guayama	2	15	11	4	1	.....	.....	8	.....	1	42
	Cayey	1	14	10	2	.....	.....	.....	.....	1	.....	27
	District	3	29	21	6	1	.....	.....	8	1	1	69
7	Aibonito	.....	6	7	1	.....	.....	.....	.....	1	.....	14
	Comerio	.....	4	7	2	.....	.....	.....	.....	.....	.....	13
	Barros	.....	6	12	2	2	.....	.....	.....	.....	.....	22
	District	.....	16	26	5	2	.....	.....	.....	1	.....	49
8	Coamo	.....	9	16	2	.....	.....	.....	.....	1	.....	27
	Juana Diaz	.....	6	12	2	.....	.....	.....	.....	1	.....	20
	Santa Isabel	.....	4	5	1	.....	.....	.....	.....	.....	.....	10
	District	.....	19	33	5	.....	.....	.....	.....	2	.....	57
9	Ponce	5	46	43	1	1	3	4	10	6	.....	113
10	Yauco	1	12	13	3	.....	.....	.....	.....	3	.....	29
	Sabana Grande	1	7	8	1	1	.....	.....	.....	1	.....	18
	District	2	19	21	4	1	.....	.....	.....	4	.....	47
11	San German	1	10	14	3	.....	.....	.....	.....	1	.....	28
	Lajas	.....	2	11	.....	.....	.....	.....	.....	1	.....	13
	Cabo Rojo	1	5	16	1	.....	.....	.....	.....	.....	.....	23
	District	2	17	41	4	.....	.....	.....	.....	2	.....	64
12	Mayaguez	1	22	26	3	.....	2	3	8	1	.....	65
	Añasco	1	8	11	1	.....	.....	.....	.....	1	.....	21
	Maricao	.....	2	5	2	.....	.....	.....	.....	.....	.....	9
	District	2	32	42	6	.....	2	3	8	2	.....	95
13	Aguadilla	1	12	17	3	.....	.....	.....	.....	1	.....	33
	Aguada	.....	4	7	1	.....	.....	.....	.....	.....	.....	12
	Isabela	.....	5	9	1	.....	.....	.....	.....	.....	.....	15
	District	1	21	33	5	.....	.....	.....	.....	1	.....	60

[a] Duplicates, not included in totals.

[b] Not duplicates, included in totals.

TABLE VIII.—*Distribution (teachers) by sex and color, common schools and special schools*—Continued.

TOTAL TEACHERS, ALL CLASSES—Continued.

School district.	Locality.	Principal.	Graded.	Rural.	English.	Agricultural.	Music and drawing.	High.	Industrial.	Night.	Night, exclusive of duplicates.	Total number of teachers employed.
14	San Sebastian	1	4	12	1	.....	.....	.....	.....	1	.....	18
	Lares	1	4	10	1	.....	.....	.....	.....	1	.....	16
	Las Marias	.....	2	8	1	.....	.....	.....	.....	.....	.....	11
	District	2	10	30	3	.....	.....	.....	.....	2	.....	45
15	Utuado	1	9	22	2	.....	.....	.....	.....	1	.....	34
	Adjuntas	1	6	9	2	.....	.....	.....	.....	1	.....	18
	District	2	15	31	4	.....	.....	.....	.....	2	.....	52
16	Arecibo	1	18	24	3	.....	.....	.....	7	1	.....	53
	Camuy	.....	12	12	3	1	.....	.....	.....	.....	.....	28
	District	1	30	36	6	1	.....	.....	7	1	.....	81
17	Manati	.....	11	14	2	.....	.....	.....	.....	1	.....	27
	Ciales	.....	5	8	1	.....	.....	.....	.....	.....	.....	14
	Morovis	.....	2	7	.....	.....	.....	.....	.....	.....	.....	9
	District	.....	17	29	3	.....	.....	.....	.....	1	.....	50
18	Toa Alta	.....	9	10	3	1	.....	.....	.....	1	.....	23
	Vega Baja	.....	8	11	2	.....	.....	.....	.....	.....	.....	21
	District	.....	17	21	5	1	.....	.....	.....	1	.....	44
19	Bayamon	2	16	30	5	1	.....	.....	.....	2	.....	54
	Total	34	446	560	93	9	10	14	43	42	1	1,210

TOTAL TEACHERS, BY SEX AND COLOR.

School district.	Locality.	White.			Colored.			Total males.	Total females.	Total teachers employed.
		Males.	Females.	Total.	Males.	Females.	Total.			
1	San Juan	21	76	97	2	3	5	23	79	102
	Rio Piedras	9	5	14	1	2	3	10	7	17
	District	30	81	111	3	5	8	33	86	119
2	Carolina	21	3	24	.....	.....	.....	21	3	24
	Rio Grande	21	7	28	.....	1	1	21	8	29
	District	42	10	52	.....	1	1	42	11	53
3	Fajardo	15	10	25	1	1	2	16	11	27
	Naguabo	5	3	8	1	.....	1	6	3	9
	Vieques, Culebra	7	3	10	1	1	2	8	4	12
	District	27	16	43	3	2	5	30	18	48
4	Humacao	14	11	25	.....	.....	.....	14	11	25
	Yabucoa	10	8	18	.....	.....	.....	10	8	18
	Patillas	6	2	8	.....	.....	.....	6	2	8
	District	30	21	51	.....	.....	.....	30	21	51
5	Caguas	18	13	31	1	1	2	19	14	33
	San Lorenzo	12	5	17	1	1	2	13	6	19
	Aguas Buenas	3	3	6	.....	1	1	3	4	7
	District	33	21	54	2	3	5	35	24	59

TABLE VIII.—*Distribution (teachers) by sex and color, common schools and special schools*—Continued.

TOTAL TEACHERS, BY SEX AND COLOR—Continued.

School district.	Locality.	White.			Colored.			Total males.	Total females.	Total teachers employed.
		Males.	Females.	Total.	Males.	Females.	Total.			
6	Guayama	23	15	38	3	1	4	26	16	42
	Cayey	15	10	25	1	1	2	16	11	27
	District	38	25	63	4	2	6	42	27	69
7	Aibonito	10	3	13	1	.....	1	11	3	14
	Comerio	11	2	13	.....	.....	.....	11	2	13
	Barros	19	1	20	2	.....	2	21	1	22
	District	40	6	46	3	.....	3	43	6	49
8	Coamo	17	9	26	1	.....	1	18	9	27
	Juana Diaz	10	8	18	1	1	2	11	9	20
	Santa Isabel	6	3	9	1	.....	1	7	3	10
	District	33	20	53	3	1	4	36	21	57
9	Ponce	42	65	107	2	3	6	45	68	113
10	Yauco	18	11	29	.....	.....	.....	18	11	29
	Sabana Grande	8	8	16	1	1	2	9	9	18
	District	26	19	45	1	1	2	27	20	47
11	San German	6	14	20	3	5	8	9	19	28
	Lajas	9	2	11	2	.....	2	11	2	13
	Cabo Rojo	17	3	20	1	2	3	18	5	23
	District	32	19	51	6	7	13	38	26	64
12	Mayaguez	29	32	61	1	3	4	30	35	65
	Añasco	15	6	21	.....	.....	.....	15	6	21
	Maricao	7	.....	7	2	.....	2	9	.....	9
	District	51	38	89	3	3	6	54	41	95
13	Aguadilla	18	11	29	4	.....	4	22	11	33
	Aguada	8	2	10	1	1	2	9	3	12
	Isabela	10	4	14	.....	1	1	10	5	15
	District	36	17	53	5	2	7	41	19	60
14	San Sebastian	15	3	18	.....	.....	.....	15	3	18
	Lares	10	6	16	.....	.....	.....	10	6	16
	Las Marias	6	2	8	3	.....	3	9	2	11
	District	31	11	42	3	.....	3	34	11	45
15	Utuado	29	4	33	.....	1	1	29	5	34
	Adjuntas	11	6	17	1	.....	1	12	6	18
	District	40	10	50	1	1	2	41	11	52
16	Arecibo	27	21	48	2	3	5	29	24	53
	Camuy	20	7	27	1	.....	1	21	7	28
	District	47	28	75	3	3	6	50	31	81
17	Manati	15	9	24	2	1	3	17	10	27
	Ciales	10	4	14	.....	.....	.....	10	4	14
	Morovis	6	1	7	1	1	2	7	2	9
	District	31	14	45	3	2	5	34	16	50
18	Toa Alta	14	8	22	1	.....	1	15	8	23
	Vega Baja	13	3	16	3	2	5	16	5	21
	District	27	11	38	4	2	6	31	13	44
19	Bayamon	23	17	40	6	8	14	29	25	54
	Total	659	449	1,108	56	46	102	715	495	1,210

TABLE IX.—*Total number of schools opened during the school year (number of distinct enrollments or classes), by municipalities and by school districts, for each respective class of common schools (enrollments, or classes, under special charge of principal teachers included under separate heading, "Principal"), and total for the common schools; also the same for the special schools, and total for the common schools and special schools—showing the totals for the municipalities and school districts, and for the island.*

School year 1904–5.

COMMON SCHOOLS AND SPECIAL SCHOOLS.

School district.	Locality.	Principal.	Graded.	Rural.	Total common schools.	High.	Industrial.	Night.	Agricultural.	Total, special schools.	Total, common and special schools.
1	San Juan	6	50	11	67	1	1	4	.....	6	73
	Rio Piedras	1	5	8	14	.....	.....	.....	.....	.....	14
	District	7	55	19	81	1	1	4	.....	6	87
2	Carolina	1	7	14	22	.....	.....	1	1	2	24
	Rio Grande	.....	8	18	26	.....	.....	1	.....	1	27
	District	1	15	32	48	.....	.....	2	1	3	51
3	Fajardo	1	15	9	25	.....	.....	1	.....	1	26
	Naguabo	.....	3	6	9	.....	.....	1	.....	1	10
	Vieques, Culebra	.....	5	6	11	.....	.....	.....	.....	.....	11
	District	1	23	21	45	.....	.....	2	.....	2	47
4	Humacao	1	10	11	22	.....	.....	1	.....	1	23
	Yabucoa	1	5	9	15	.....	.....	.....	.....	.....	15
	Patillas	.....	2	5	7	.....	.....	.....	.....	.....	7
	District	2	17	25	44	.....	.....	1	.....	1	45
5	Caguas	1	14	16	31	.....	.....	1	.....	1	32
	San Lorenzo	.....	9	10	19	.....	.....	1	.....	1	20
	Aguas Buenas	.....	3	4	7	.....	.....	.....	.....	.....	7
	District	1	26	30	57	.....	.....	2	.....	2	59
6	Guayama	2	15	11	28	.....	1	1	1	3	31
	Cayey	1	12	11	24	.....	.....	1	.....	1	25
	District	3	27	22	52	.....	1	2	1	4	56
7	Aibonito	.....	6	7	13	.....	.....	1	.....	1	14
	Comerio	.....	5	8	13	.....	.....	.....	.....	.....	13
	Barros	.....	6	12	18	.....	.....	.....	2	2	20
	District	.....	17	27	44	.....	.....	1	2	3	47
8	Coamo	.....	10	15	25	.....	.....	1	.....	1	26
	Juana Diaz	.....	7	12	19	.....	.....	1	.....	1	20
	Santa Isabel	.....	4	5	9	.....	.....	.....	.....	.....	9
	District	.....	21	32	53	.....	.....	2	.....	2	55
9	Ponce	3	43	45	91	1	1	5	1	8	99
10	Yauco	1	13	14	28	.....	.....	2	.....	2	30
	Sabana Grande	1	7	7	15	.....	.....	1	1	2	17
	District	2	20	21	43	.....	.....	3	1	4	47
11	San German	1	12	14	27	.....	.....	1	.....	1	28
	Lajas	.....	3	8	11	.....	.....	1	1	2	13
	Cabo Rojo	1	8	11	20	.....	.....	.....	1	1	21
	District	2	23	33	58	.....	.....	2	2	4	62
12	Mayaguez	.....	24	20	44	1	1	1	.....	3	47
	Añasco	1	9	10	20	.....	.....	1	.....	1	21
	Maricao	.....	3	5	8	.....	.....	.....	.....	.....	8
	District	1	36	35	72	1	1	2	.....	4	76

TABLE IX.—*Total number of schools opened during the school year (number of distinct enrollments or classes), by municipalities and by school districts, for each respective class of common schools (enrollments, or classes, under special charge of principal teachers included under separate heading, "Principal"), and total for the common schools; also the same for the special schools, and total for the common schools and special schools—showing the totals for the municipalities and school districts, and for the island*—Continued.

COMMON SCHOOLS AND SPECIAL SCHOOLS—Continued.

School district.	Locality.	Principal.	Graded.	Rural.	Total common schools.	High.	Industrial.	Night.	Agricultural.	Total, special schools.	Total, common and special schools.
13	Aguadilla	1	16	17	34	.....	.....	1	.....	1	35
	Aguada	.....	4	7	11	.....	.....	.....	.....	.....	11
	Isabela	.....	5	9	14	.....	.....	.....	.....	.....	14
	District	1	25	33	59	.....	.....	1	.....	1	60
14	San Sebastian	1	5	12	18	.....	.....	1	.....	1	19
	Lares	1	4	11	16	.....	.....	1	.....	1	17
	Las Marias	.....	2	8	10	.....	.....	.....	.....	.....	10
	District	2	11	31	44	.....	.....	2	.....	2	46
15	Utuado	1	9	20	30	.....	.....	1	.....	1	31
	Adjuntas	1	6	10	17	.....	.....	1	.....	1	18
	District	2	15	30	47	.....	.....	2	.....	2	49
16	Arecibo	.....	19	24	43	.....	1	1	.....	2	45
	Camuy	.....	12	11	23	.....	.....	.....	1	1	24
	District	.....	31	35	66	.....	1	1	1	3	69
17	Manati	.....	10	12	22	.....	.....	1	.....	1	23
	Ciales	.....	5	8	13	.....	.....	.....	.....	.....	13
	Morovis	.....	2	7	9	.....	.....	.....	.....	.....	9
	District	.....	17	27	44	.....	.....	1	.....	1	45
18	Toa Alta	.....	10	12	22	.....	.....	1	1	2	24
	Vega Baja	.....	9	11	20	.....	.....	.....	.....	.....	20
	District	.....	19	23	42	.....	.....	1	1	2	44
19	Bayamon	2	23	33	58	.....	.....	1	1	2	60
	Total	30	464	554	1,048	3	5	37	11	56	1,104

TABLE X.—*Number of buildings in use for schools, by municipalities and by school districts, classified as town, rural, and agricultural schools, showing the totals for the municipalities, school districts, and for the island.*

School year 1904–5.

School district.	Locality.	Town.	Rural.	Agricultural.	Total.
1	San Juan	13	2	....	15
	Rio Piedras	2	8	....	10
	District	15	10	....	25
2	Carolina	2	13	1	16
	Rio Grande	2	15	....	17
	District	4	28	1	33
3	Fajardo	7	9	....	16
	Naguabo	2	6	....	8
	Vieques	1	5	....	6
	Culebra				
	District	10	20	....	30
4	Humacao	4	8	....	12
	Yabucoa	3	9	....	12
	Patillas	2	4	....	6
	District	9	21	....	30
5	Caguas	4	13	....	17
	San Lorenzo	3	8	....	11
	Aguas Buenas	1	3	....	4
	District	8	24	....	32
6	Guayama	7	11	1	19
	Cayey	5	11	....	16
	District	12	22	1	35
7	Aibonito	2	7	....	9
	Comerio	1	8	....	9
	Barros	4	12	2	18
	District	7	27	2	36
8	Coamo	4	15	....	19
	Juana Diaz	3	12	....	15
	Santa Isabel	2	5	....	7
	District	9	32	....	41
9	Ponce	11	42	1	54
10	Yauco	4	11	....	15
	Sabana Grande	3	7	1	11
	District	7	18	1	26
11	San German	2	14	....	16
	Lajas	1	8	1	10
	Cabo Rojo	2	11	1	14
	District	5	33	2	40
12	Mayaguez	5	20	....	25
	Añasco	2	10	....	12
	Maricao	1	5	....	6
	District	8	35	....	43
13	Aguadilla	3	17	....	20
	Aguada	1	6	....	7
	Isabela	2	9	....	11
	District	6	32	....	38
14	San Sebastian	2	12	....	14
	Lares	3	11	....	14
	Las Marias	1	8	....	9
	District	6	31	....	37
15	Utuado	3	20	....	23
	Adjuntas	2	9	....	11
	District	5	29	....	34
16	Arecibo	4	24	....	28
	Camuy	5	11	1	17
	District	9	35	1	45
17	Manati	4	12	....	16
	Ciales	1	8	....	9
	Morovis	1	7	....	8
	District	6	27	....	33
18	Toa Alta	3	10	1	14
	Vega Baja	2	11	....	13
	District	5	21	1	27
19	Bayamon	7	28	1	36
	Total	149	515	11	675

TABLE XI.—*Expenses incurred by the local school boards during the fiscal year ended June 30, 1905; also indebtedness of each local school board in the several municipalities at the close of the fiscal year, by municipalities, school districts, and totals for the island.*

School year 1904–5.

School district.	Locality.	Rent of school houses. A.	House rent of teachers. B.	Local board. Salaries employees. C.	Local board. Contingent expenses. D.	School furniture and equipment. E.	Text-books and school supplies. F.	Extraordinary expenditures. G.
1	San Juan	$12,232.00	$8,864.53	$9,384.81	$255.02	$1,181.26	$2.35	$3,565.27
	Rio Piedras	509.19	968.80	398.98	49.75	.....	7.50	98.93
2	Carolina	1,534.00	1,305.16	156.09	115.91	1.98	7.87	98.25
	Rio Grande	1,376.00	1,470.61	461.42	59.35	15.50	22.25	352.78
3	Fajardo	652.38	1,102.04	572.62	105.92	132.87	10.00	285.90
	Naguabo	733.50	784.00	135.57	38.12	49.77	.....	250.12
	Vieques	546.70	645.59	490.08	76.11	196.03	6.15	169.03
4	Humacao	624.66	1,656.72	812.01	170.00	350.70	57.73	1,019.40
	Yabucoa	1,412.50	1,326.12	311.71	54.95	8.00	.50	325.62
	Patillas	516.80	669.33	16.69	11.34	20.04	16.25	292.26
5	Caguas	1,212.00	2,248.00	636.60	44.87	171.36	1.75	290.68
	San Lorenzo	834.50	1,230.20	161.12	62.51	127.35	10.25	106.53
	Aguas Buenas	247.50	271.50	117.24	28.28	9.25	4.25	48.16
6	Guayama [a]	.....	.....	.....	.....	.....	.....	.....
	Cayey	1,442.00	1,907.50	437.21	346.74	61.90	28.02	519.14
7	Aibonito	464.50	974.00	263.22	46.70	7.80	.....	100.15
	Comerio	629.00	946.00	81.35	51.22	47.35	12.00	86.75
	Barros	460.00	1,207.00	57.51	20.23	.....	10.24	412.59
8	Coamo	1,110.73	1,092.00	497.63	64.80	246.33	12.65	177.55
	Juana Diaz	1,170.00	1,278.50	348.23	179.56	213.17	21.90	523.71
	Santa Isabel	773.66	609.30	382.08	88.55	213.20	18.65	1,030.86
9	Ponce	10,966.95	8,879.40	2,573.73	393.34	2,436.93	62.02	1,658.28
10	Yauco	1,133.00	1,978.66	750.99	409.48	247.67	6.96	1,463.57
	Sabana Grande	685.00	1,376.00	230.15	58.35	37.68	5.08	167.56
11	San German	442.00	1,549.00	541.14	63.69	22.60	.....	1,082.46
	Lajas	472.00	874.00	236.29	157.13	131.13	10.20	367.25
	Cabo Rojo	600.00	1,339.80	367.41	93.88	2.00	4.00	305.10
12	Mayaguez	2,799.53	5,410.99	1,334.17	375.04	83.35	40.60	921.70
	Añasco	940.52	1,200.72	293.62	26.07	61.17	2.65	139.40
	Maricao [b]	310.00	336.40	124.39	32.75	75.50	.....	143.43
13	Aguadilla	582.64	1,950.00	439.98	67.07	309.50	.....	220.84
	Aguada	470.00	1,002.00	65.57	25.58	205.61	.50	52.77
	Isabela	788.00	660.00	103.60	70.64	68.85	6.50	94.79
14	San Sebastian	330.00	632.00	232.94	70.23	10.20	32.14	658.53
	Lares	954.00	1,264.00	326.91	124.95	82.74	23.62	725.72
	Las Marías [c]	.....	595.00	.....	17.40	2.00	.....	35.00
15	Utuado	2,513.97	2,713.22	592.05	373.23	25.25	1.50	251.14
	Adjuntas	782.00	890.00	203.46	62.47	.....	3.72	188.76
16	Arecibo	3,758.93	4,102.00	984.15	324.62	157.85	76.50	1,163.79
	Camuy	1,383.40	3,299.33	234.59	64.00	27.54	9.81	163.57
17	Manati	1,319.58	1,842.47	509.93	226.49	135.79	2.87	498.37
	Ciales [b]	86.00	494.33	183.58	81.14	26.65	.....	75.90
	Morovis	500.00	461.30	115.15	20.12	7.43	2.25	56.45
18	Toa Alta [d]	1,006.90	1,196.00	151.14	26.05	10.00	.....	88.91
	Vega Baja	804.00	1,377.00	273.30	189.19	386.26	22.42	206.33
19	Bayamon	2,237.93	2,377.00	514.70	247.03	96.50	3.00	324.20
	Total	64,347.97	78,357.52	27,105.11	5,469.87	7,704.06	566.65	20,807.50

TABLE XI.—*Expenses incurred by the local school boards during the fiscal year ended June 30, 1905; also indebtedness of each local school board in the several municipalities at the close of the fiscal year, by municipalities, school districts, and totals for the island*—Continued.

School district.	Locality.	Construction school buildings.	Amount returned account of loan.	Total disbursements.	Total receipts.	Balance on June 30, 1905.
1	San Juan	.....	.....	$35,485.24	$35,509.59	$24.35
	Rio Piedras	$1,064.55	.....	3,097.70	3,284.91	187.21
2	Carolina	.....	.....	3,219.26	3,259.60	40.34
	Rio Grande	1,100.00	.....	4,857.91	5,058.66	200.75
3	Fajardo	.....	$52.46	2,914.19	4,179.12	1,264.93
	Naguabo	.....	.....	1,991.08	1,996.37	5.29
	Vieques	.....	.....	2,129.69	7,042.25	4,912.56
4	Humacao	.....	.....	4,691.22	4,691.35	.13
	Yabucoa	1,156.92	.....	4,596.32	4,597.55	1.23
	Patillas	.....	.....	1,542.71	1,590.35	47.64
5	Caguas	.....	.....	4,605.26	4,840.07	234.81
	San Lorenzo	.....	.....	2,532.46	2,919.91	387.45
	Aguas Buenas	.....	.....	726.18	731.03	4.85
6	Guayama [a]	.....	.....	.....	.....	.....
	Cayey	.....	.....	4,742.51	4,753.69	11.18
7	Aibonito	.....	.....	1,856.37	1,861.92	5.55
	Comerio	.....	.....	1,853.67	1,865.26	11.59
	Barros	.....	.....	2,167.57	2,250.31	82.74
8	Coamo	.....	.....	3,201.69	3,217.78	16.09
	Juana Diaz	1,587.36	.....	5,322.43	6,682.50	1,360.07
	Santa Isabel	833.34	.....	3,949.64	5,280.01	1,330.37
9	Ponce	1,600.00	.....	28,570.65	32,482.21	3,911.56
10	Yauco	1,159.64	.....	7,149.97	13,825.63	6,675.66
	Sabana Grande	339.76	.....	2,899.58	2,950.12	50.54
11	San German	.....	.....	3,700.89	3,721.05	20.16
	Lajas	469.95	.....	2,717.95	2,719.17	1.22
	Cabo Rojo	550.00	.....	3,262.19	3,432.44	170.25
12	Mayaguez	.....	.....	10,965.38	11,870.44	905.06
	Añasco	740.02	.....	3,404.17	3,617.85	213.68
	Maricao [b]	946.47	.....	1,968.94	1,980.39	11.45
13	Aguadilla	.....	.....	3,570.03	3,589.02	18.99
	Aguada	.....	239.02	2,061.05	2,241.31	180.26
	Isabela	.....	.....	1,792.38	1,795.63	3.25
14	San Sebastian	916.64	.....	2,882.68	2,943.58	60.90
	Lares	.....	.....	3,501.94	4,008.22	506.28
	Las Marias [c]	1,110.50	.....	1,759.90	2,345.44	585.54
15	Utuado	.....	.....	6,470.36	6,854.98	384.62
	Adjuntas	916.65	.....	3,047.06	3,123.68	76.62
16	Arecibo	391.30	.....	10,959.14	10,979.15	20.01
	Camuy	.....	.....	5,182.24	5,227.95	45.71
17	Manati	.....	.....	4,535.50	4,856.12	320.62
	Ciales [b]	.....	.....	947.60	948.26	.66
	Morovis	.....	.....	1,162.70	1,249.54	86.84
18	Toa Alta [d]	.....	.....	2,479.00	2,765.22	286.22
	Vega Baja	.....	10.00	3,268.50	3,723.51	455.01
19	Bayamon	821.00	.....	6,621.36	6,897.39	276.03
	Total	15,704.10	301.48	220,364.26	245,760.53	25,396.27

[a] Statement of accounts not available for examination, books being in charge of judicial authorities.
[b] No accounts rendered for July 1 to December 31, 1904.
[c] Accounts not rendered for June, 1905.
[d] Accounts not rendered for May and June, 1905.

TABLE XI.—*Expenses incurred by the local school boards during the fiscal year ended June 30, 1905; also indebtedness of each local school board in the several municipalities at the close of the fiscal year, by municipalities, school districts, and totals for the island. (Indebtedness of school boards at the end of fiscal year 1904–5.)*

School year 1904-5.

[The present statement does not include as debts the amounts owed by various boards for the purpose of making repayments on loans of the insular treasury or the construction of school houses.]

School district.	Locality.	Rent of school houses. A	House rent for teachers. B	Local board. Salaries employees. C	Local board. Contingent expenses. D	School furniture and equipment. E	Textbooks and school supplies. F	Extraordinary expenditures. G	Total.
1	San Juan					$924.95			$924.95
	Rio Piedras	$5.00							5.00
2	Carolina								
	Rio Grande	4.00			$9.00		$2.25		16.25
3	Fajardo								
	Naguabo [a]								
	Vieques								
4	Humacao	118.00	$110.00	$150.00	12.00	4.50	20.16	$622.18	1,036.84
	Yabucoa	99.00	112.00		2.50			14.80	228.60
	Patillas		10.00						10.00
5	Caguas								
	San Lorenzo	296.00	605.00	50.37	1.50	115.00	6.25	16.00	1,090.12
	Aguas Buenas	750.00	351.00	48.48	.90	13.65	2.75	183.85	1,350.63
6	Guayama								
	Cayey	549.00	398.00	88.75				25.00	1,060.75
7	Aibonito			4.03				100.00	104.03
	Comerio	24.00	216.33						240.33
	Barros	448.00	268.50	23.37				16.00	755.87
8	Coamo	556.00	348.00		3.00		3.50	4.57	915.07
	Juana Diaz					117.00			117.00
	Santa Isabel	79.00	70.00	38.50	27.25	12.50		15.00	242.25
9	Ponce	413.90	415.60	47.41	6.80	23.50	30.85	16.00	954.06
10	Yauco								
	Sabana Grande	52.00	118.00	3.56	3.00			992.26	1,168.82
11	San German	137.00	440.00	73.18				31.57	681.75
	Lajas	150.00	88.00						238.00
	Cabo Rojo	120.00	20.00	5.99					145.99
12	Mayaguez	2,962.59	770.00	5.00	52.50	50.00	2.00	109.26	3,951.35
	Añasco	1,044.04	743.00	70.32	22.60	40.00		68.60	1,988.56
	Maricao								
13	Aguadilla	389.44	947.88	50.00				20.00	1,407.32
	Aguada	4.00					3.62		7.62
	Isabela	274.00	252.00	10.52					536.52
14	San Sebastian	66.00	172.00	20.00	6.00	1.48	4.50	22.00	291.98
	Lares								
	Las Marias	360.00	270.00	156.34	75.00			50.00	911.34
15	Utuado			18.00	9.00				27.00
	Adjuntas	711.00	942.00	20.00	25.40		10.10		1,708.50
16	Arecibo	196.00							196.00
	Camuy	91.00	26.00		7.50			148.47	272.97
17	Manati	413.42			6.00				419.42
	Ciales	808.46	419.00	28.50				167.80	1,423.76
	Morovis	198.00	270.00	26.75	2.80		6.00	15.00	518.65
18	Toa Alta [a]								
	Vega Baja								
19	Bayamon	720.40	1,235.00	61.50	69.00	165.00	17.00	127.94	2,395.84
	Total	12,039.25	9,617.31	1,000.57	342.15	1,467.58	108.98	2,766.30	27,342.14

[a] No information furnished.

Exhibit VII.

REPORTS OF DISTRICT SCHOOL SUPERINTENDENTS.

School District No. 1.

Department of Education of Porto Rico,
Office of District Superintendent,
San Juan, P. R., June 1, 1905.

Sir: I have the honor to submit herewith my annual report as superintendent of the district of San Juan for the school year of 1904–5.

I took charge of this district, comprising the municipalities of San Juan and Rio Piedras, on September 1, 1904. In San Juan there are 42 graded and 6 principal teachers working in 6 buildings and 10 rural teachers in 7 buildings. Besides this corps of regular teachers there are 3 graded and 1 rural substitute teachers, 1 auxiliary graded, 7 special English teachers, 4 of music and drawing, and 6 night-school teachers. Two of the teachers rated as rural are employed in the two prison schools. One of the special English teachers mentioned is assigned to special work as assistant superintendent of the district. At the present time the central graded school, the Central High School of Porto Rico, and the San Juan Industrial School are not under the supervision of the superintendent of the district, and the teachers of these schools are not included in those mentioned above. In Rio Piedras there are 6 graded and 8 rural schools and 1 special English teacher. This makes a total of 95 teachers under the supervision of the superintendent.

As in any school system as large as this, there are found here teachers who differ widely in their professional skill and in their attitude toward the work; but on the whole they have worked earnestly and with success. The district has been fortunate in having particularly good special teachers of English, drawing, and music, and the progress along these lines has been even greater than was to be expected. Among those teachers who have undertaken work along lines new to them and have carried it to a successful issue may be mentioned the principal of the Emerson School in San Juan, who has carried on the work in English with marked success; the principal of the William Penn School, who is for the first time working as a principal; the acting principal of the Hawthorne School in Rio Piedras, who has effected a complete reorganization, and the two gentlemen who have acted as assistant superintendents of the district and who have shown themselves unusually hard working, efficient, and tactful in the difficult work they have been called upon to perform.

During the present year the school board of San Juan has employed 6 truant officers. This has resulted in a marked improvement in the per cent of daily attendance, but it is doubtful if the results justify the large expense, and a change will be recommended for next year.

In the two prison schools maintained very good and important work has been done, about 200 men being taught to read, write, and to do simple arithmetic work during the present school year. Nevertheless, it seems doubtful whether the support of these schools is a legitimate field of activity for the department of education.

The exhibit of school work sent to the exposition at St. Louis was kindly loaned by the department and exhibited in the Lincoln School on April 21 and 22. Gratifying interest was shown by the parents of the school children, and during the day some 375 people signed the register opened for visitors.

On March 31 and April 1 the annual teachers' institute was held in this district under the able direction of Mr. E. N. Clopper. On the evening of the first of these two days an informal reception was tendered to all the teachers of the district by the superintendent. This was said to be the first affair of the kind ever given in the island.

School visiting among the teachers has been encouraged to an unusual extent with very good results.

During the year the graded school of Rio Piedras has undergone a complete transformation. In no other school has the change been so great and in none was it so much needed. On the last day of the old year the new 6-room Hawthorne School building was dedicated. Impressive exercises were held, addresses made by the acting governor, by the commissioner and assistant commissioner of education, and musical selections rendered by the insular police band. Only a few days before the new building was dedicated the graded schools

were put in charge of a new acting principal, Mr. Manuel Gilestra. The transformation brought about by the combination of the new building and new principal was little short of marvelous. In a few weeks time this group of graded schools, which had been without question the poorest graded, the worst disciplined, and the most troublesome in the district, had become one of the best in all these respects. While this was largely due to the excellent work of the new acting principal, yet it also gave a very good illustration of the immense importance of good material conditions in the schoolroom.

The new building is, perhaps, the best of the American-built schools in the island. It is built on the Spanish plan, having rooms arranged in a hollow square around a central patio. It has modern plumbing, a principal's office, a storeroom for books, and a bathroom with a shower. According to the report of the acting principal this shower bath has been used on the average by about 30 pupils a day, and a greater number would gladly avail themselves of the privilege if there were more showers. If it could be once generally realized in Porto Rico what a powerful instrument for the mental and moral uplifting of the youth of a community such a building as this is there would be no more difficulty in getting building appropriations.

The most imperative need of this district is proper accommodation for the city schools. At the present time we are paying something over $12,000 annually for the rent of school buildings, and the best we can secure are so poor that it seems impossible to improve to any marked degree the work now being done. Considerable work has been done both by the local school board and by the superintendent looking toward the improvement of these conditions, but it is evident that local complications make this a matter of so much difficulty that no real progress can be made until the department takes it up and there is no matter which I can more earnestly recommend to its attention.

While time and thought have been given to all the matters mentioned, the energies of the superintendent have been largely devoted to the work of organizing and systematizing. On account of the frequent changes of superintendents, principals, and the teaching force in San Juan there has been in the past little relation between the work done in any one year and that done in the next succeeding year in any school. Up to the present time little attention has been given to keeping track of pupils. Each school has opened at the beginning of each school year, taking the pupils who presented themselves, and begun work, paying little attention to where the pupils came from, what school they had formerly attended, or even as to what grade they had been in. There has also been a notable lack of uniformity in grading and in the ground covered by similar grades in different schools, although vigorous steps to correct these evils were taken by my predecessor, Mr. Clopper.

As a first move toward bettering these conditions more responsibility has been placed on the principals, strong support given them, frequent conferences held with them, and exact and definite results required from them and their schools.

As a step toward getting uniform and systematic grading, term examinations, uniform in all the schools, were held and the results obtained by each pupil in each subject registered in the office of the superintendent. The examinations in each room were given and the papers of that room corrected by another teacher than the room teacher. In order to systematically keep the results a card catalogue has been established in the office with a separate card arranged to keep a three-years' record of the standing of each child in all the graded schools. A careful study of the results thus obtained has shown many interesting and some disquieting things. There seems to exist among the teachers, as a whole, no general feeling that there is any relation between the excellence of the work done and the proportion of children who are prepared to pass to the next higher grade at the end of the year. I am convinced that the general existence of these conditions in the island largely accounts for the very great proportion of the pupils enrolled who are found in the lower grades and the consequent very small number who ever reach the upper grades.

A great amount of special help has been given to teachers through the superintendent's office in the shape of circular letters, lesson outlines, information blanks and reports, and grade examinations. From the beginning of the school year up to the present time there have been prepared and sent out from the office 32 circular letters, 11 blank forms, 8 letters of general information, 3 outline maps, 4 programmes, 60 grade examinations, 3 invitations, 9 special outlines of English work, 4 outline lessons for teachers, and 1 on blackboard drawing. Although this has entailed a great amount of work the results have justified the exertion.

My experience this year has fully confirmed the opinion expressed in my annual report of last year as to the value of furnishing the teachers with definite, carefully prepared sets of outlines of the work expected along given lines. In English work alone nine such sets of lesson outlines have so far been prepared and issued, and the results obtained constitute a strong indorsement of the plan. Even when these outlines are not pedagogically perfect their use is a great step in advance over the prevailing system of leaving the teacher to drift along as best he may in the teaching of subjects of which he knows little and about the teaching of which he knows still less. This is particularly true in the case of teachers who for the first time are doing their work in English.

In the office of the superintendent many changes have been made and an up-to-date equipment secured, by means of which the office work may now be done in a businesslike manner. There have been added to the office equipment during the present school year seven bookcase units; a 10-drawer card-index unit for 4 by 6 cards; a new desk; an additional typewriter and table; a vertical letter file; and the office has been connected by telephone with all the graded schools.

The question of the teaching of English has received more care, work, and study than has any other during the present school year. I believe that, on the whole, the special English teachers who have worked in this district this year have been of a higher average grade of skill and efficiency than any I have met in any other district of the island. Their work has been assisted in every possible way, and they have worked faithfully and well. After giving this work the assistance of every possible advantage under our present system, I feel prepared to state that it is relatively a failure.

Pupils who have been in school for five or six years are unable to sustain even the simplest conversation in English, and in this respect there is little difference between them and those who have been in school but two years. The cause of this is the unsatisfactory system of teaching English as a special subject, and not the lack of ability on the part of the teachers or dullness on the part of the children. Long ago I came to the conclusion that we should never teach English to the Porto Rican children until a large part of the teaching of the ordinary school subjects was done in that language, and my observations this year have confirmed that view. The special teacher giving a twenty-minute exercise each morning and each afternoon to each class will never be able to give her pupils any working knowledge of the language. At the end of the first term I determined to try the experiment of putting one of the graded schools on an English basis with Porto Rican teachers. With this end in view there were transferred to the McKinley School those teachers who have the best working knowledge of English, and who were also good teachers. This school was already in charge of an unusually good principal, who has a good practical knowledge of English.

They at once began the work of turning into English the knowledge of the school subjects which the children already possessed in Spanish, and of continuing the work in the new language. The lessons for the first few months were outlined in the office of the superintendent, and very close supervision was given to the work. The results were little short of marvelous. I believe it is no exaggeration to say that in the first term of the English work the pupils learned more real English than they had in the entire preceding years of their school experience. I believe that the solution of the problem of English teaching in Porto Rico lies in the teaching of most of the school subjects in that language and in giving up its teaching as a purely special subject. At the same time the teaching of Spanish should be continued in all schools. Spanish is, and will be for years to come, the home language of this country, and I believe it is the duty of the schools to teach the pupils to use it correctly, both orally and in writing.

While it would be neither advisable nor possible to do without the American teachers in carrying on the schools on the English-Spanish basis outlined above, yet it is evident that we must depend mainly on native teachers for the work. These teachers, able to do the work well in both languages, are not easy to secure, but we have already quite a number in this district, and I feel sure that there will be little difficulty in securing a sufficient number to put all grades above the first on an English basis, as I intend to do next year.

In a general way the observations made above as to the failure of the teaching of English as a special language subject in the schools apply also to the case of the English classes for the Porto Rican teachers. For the past three years the teachers have been studying English, following regular courses out-

lined by the department, and while they have worked extremely hard and considerable progress has been made, yet the results have not been what were hoped for.

I believe that this will continue to be the case so long as the courses outlined by the department keep the teachers studying about the language, rather than making a practical use of the language. As an experiment in this line I have organized a teachers' practice class, in which nine of the teachers meet twice a week and do work in practice teaching of school subjects under the direction of one of the best of the English teachers. Judging from the results that this work has given up to the present time I believe that we could secure much better results than we have in the past by outlining for the teachers a course of study which would require from them the actual use of English in connection with work which they understand and in which they are interested.

As a possible step toward solving the difficulty of how to build up a good pronunciation in the child's first work in English, I have made careful experiments with one primary grade in English, using the Ward method of teaching reading. The progress so far makes it look as if the solution of the problem was near at hand.

Respectfully submitted.

LEONARD P. AYRES,
Superintendent of schools.

The COMMISSIONER OF EDUCATION, *San Juan, P. R.*

SCHOOL DISTRICT NO. 2.

DEPARTMENT OF EDUCATION OF PORTO RICO,
OFFICE OF DISTRICT SUPERINTENDENT,
Carolina, P. R., May 1, 1905.

SIR: I have the honor to transmit herewith my sixth annual report, covering the school year 1904–5.

The district of Carolina now comprises the municipalities of Rio Grande (including Loiza) and Carolina, (including Trujillo Alto) with the following schools:

	Principal.	Acting principal.	Agricultural.	English.	Grade.	Rural.	Total.
Rio Grande	0	1	0	2	8	17	28
Carolina	1	0	1	2	8	14	26
Total	1	1	1	4	16	31	54

SCHOOL BOARDS.

The school boards are striving to render as good service as possible; that is, from their standpoint of what is just and necessary, but I am forced to confess that this is often a grand mixture of partiality and politics. One of them seems to have a very narrow view of what is needed, and is very careless and slow in making any changes or improvements. They always fall back on the old, and ever convenient, excuse of "no funds" when anything is wanted.

Rio Grande has about 11,000 children of school age. The taxes levied produced last year $4,500. Carolina has about 8,600 children of school age, while the taxes levied produced last year $2,875. From the foregoing it can easily be seen that the number of schools are out of proportion with the amount of money at hand to support them.

SCHOOLHOUSES.

Rio Grande has a good 2-story 6-room graded school building in the town of Rio Grande, and in the town of Loiza a very comfortable building for the graded schools of that place. The rural schools are, with few exceptions, well furnished with good buildings and furniture, many of the rural schools having improved desks, while all of them have water jars with cups, a clock and bell for the teacher's desk, and a janitor to sweep the room and carry water, etc. Very few are without bookcases.

The municipality of Carolina is not so fortunate, as it has no graded school building. A good opportunity to secure one with the help of the department of education presented itself last year, but through lack of interest and energy was let pass the last chance of aid from that source. The school board now pays $50 per month, twelve months a year, for this folly, and this to get a 6-room building for the graded schools in Carolina. In Trujillo Alto the building used for graded schools is very poor and badly located. Carolina rural schools are in most cases very poorly supplied with furniture, very few have improved desks, and not enough of the poor old-fashioned benches and long desks. Many have no bookcases, and none has a clock or bell or water jar, or janitor to attend to the building.

From the above you need not be told which municipality is gaining the more from her schools, or which is taking more interest in them. Some day, it is hoped, Carolina will realize what she has lost, and is still losing.

Each municipality gave 25 per cent of its funds for school purposes last year, and there seems to be a willingness to do as much this coming year, and also to vote for the levy of a school tax.

BOOKS AND SUPPLIES.

The supply of books and other material has not been as liberal as it formerly was. Several times books have been ordered, and the order half-filled or notice sent that there was none on hand. Pencils, crayon, composition books, and copy books have been issued short of actual needs. I took charge of this district so late that I had no time to separate the old, worn-out books from the good ones, and for that reason a great many books were issued which were very badly torn. Later events, however, showed that very good use could be made of even those in the worst condition, when we had no others to issue in their stead.

THE TEACHERS.

Of the 50 Porto Rican teachers in the district, there is a larger proportion of really good teachers than it has ever before been my lot to have at any time during my six years as superintendent. About one-half are good, and at least one-third are very good; but on the other hand there are some very poor ones. All have shown a disposition to do, and have done, good, faithful work, and are willing to take up any new idea tending to improve and better their schools. There are, as usual, a few exceptions. Several of the young men are lazy, of whom, I am sorry to say, are some who have spent a few months at the normal school. In their cases it seems to have given them the "big head;" they shirk in every way possible, except in signing their names, when they never fail to add "profesor rural." These lazy ones are absent under all possible excuses—toothache, earache, fever, each in turn according to their report afflicts them, and always in the middle of the week. This occurs almost every month, making their work irregular, and demoralizes the attendance, progress, and interest of their pupils.

THE PUPILS.

No doubt we have the easiest pupils to manage that it is possible to find anywhere. A great deal of the successful management, however, depends upon the teacher. Very few teachers understand their pupils as they should. They treat each pupil as merely a unit of the whole number, giving little thought, and less study, to the individual peculiarities of their pupils.

With a thoughtful, studious teacher—one who has firmness, coupled with patience and love for the pupil—it is truly surprising to see the progress that can be made. Few teachers take hold of the school as though they were the commander in chief. They are too afraid that they will hurt some one's feelings if they make everyone follow the line, allowing no tardiness and accepting no half-learned lessons. Lack of firmness is an all-too-common failing among Porto Rican teachers. Attendance, to date, has been very good, with few exceptions.

RURAL SCHOOLS.

I am an admirer of the rural pupil and the rural school. Perhaps it is for the same reason that my sympathies are always for the "under dog" in a fight. It seems to me that the rural school most certainly is the under dog

in the school question, because the tendency appears to be all against the rural school and in favor of the graded school.

I like the rural school because the pupils are more honest and industrious and give the most regular attendance, and, other things being equal, make the most progress. I like these rural boys and girls because they do all this under adverse circumstances and conditions. In the first place the schoolhouse and furniture never is expected to be equal to that of a graded school. Any old house with a backless bench in it is considered good enough for a rural school. The pupils have much farther to walk to get to school; they can never go home to lunch; and finally the teacher is in most instances only second class. He is paid about one-half what a grade teacher gets, although he must swim rivers, travel through mud and rain, and teach as many pupils and about three times as many groups or classes as a grade teacher does. I earnestly hope to see the salary of the rural teacher increased. It should be done even though the grade salary be reduced to accomplish it. Reason as you may, it can not be denied that the two salaries are out of all proportion. Reverse the salaries and see how quickly the backwoods will become popular. There would not be a vacant rural school after two weeks.

NIGHT SCHOOLS.

Two night schools have been opened this year, one in Rio Grande and one in Carolina. They are doing very good work, and in Rio Grande most excellent progress has been made. But the attendance is not nearly so good as it should be in either one of them. In my experience with night schools the attendance always leaves much to be desired.

AGRICULTURAL SCHOOLS.

There is one agricultural school in the district, located near the town of Carolina. The teacher is a Porto Rican, who is an industrious and enthusiastic gentleman. I have had no instructions, and I think he has had none, concerning what is to be accomplished. Cane has been planted on the ground, which has produced a fine crop. Vegetables have been planted, and it has been demonstrated that they can be grown to advantage. Among the vegetables raised during the fall, winter, and spring, are Irish potatoes, sweet potatoes, onions, lettuce, radishes, beans, cabbages, turnips, eggplant, peppers, peanuts, and okra.

The pupils are willing and industrious and have worked early and late to make it a success. They have had vegetables for their homes and have earned several pennies from the sale of some of their produce. And, still better, they have made just as good progress in the class room as have other rural school pupils.

Agricultural schools can be made a success if we have men who know how to work, and will get right out and work with their own hands, as this teacher has done.

ENGLISH AND ENGLISH TEACHERS.

This district has been fortunate this year in having four good teachers of English—teachers who know Spanish—and who, above all, when they give out a lesson make it distinctly understood that the lesson must be learned. The town of Carolina has been unfortunate in the past in having had female teachers of English who did not understand Spanish and did not know how to proceed without it, and usually stayed but a short time. The result is that Carolina is far behind in English. Besides this there is a dislike shown for the study of English both by the pupils and some of the teachers.

HOLIDAYS.

All the legal holidays have been observed with appropriate ceremonies and respect.

CLOSING REMARKS.

Notwithstanding the adverse criticism of our methods, our progress, and our good intentions, I think we have much to feel proud of and to encourage us. Our teachers are improving, our enrollment and attendance is much better, and

slowly we are getting better furniture and outgrowing numerous ancient customs and ideas, giving us greater freedom. Our schools are doing a thousandfold better work—better both in thoroughness and character of work done. Our teachers are a thousand times better than they were six years ago, because they teach the pupils to think for themselves and to observe and admire their surroundings. The adverse criticism makes us stronger and more determined. And what is most encouraging is to see our critics unconsciously acknowledge, in various ways, the benefits and improvements we are giving them. We have reason for much encouragement and hope for the future.

Respectfully submitted.

EDGAR L. HILL,
Superintendent of Schools, Second District.

The COMMISSIONER OF EDUCATION,
San Juan, P. R.

SCHOOL DISTRICT NO. 3.

DEPARTMENT OF EDUCATION OF PORTO RICO,
OFFICE OF DISTRICT SUPERINTENDENT,
Fajardo, June 1, 1905.

SIR: I have the honor to submit herewith my annual report for the academic year 1904–5.

This district, up to last summer, comprised the municipalities of Fajardo, Naguabo, and Rio Grande. The latter town was then detached to form a separate district in union with the town of Carolina. Fajardo thus passed to be the third district, the islands of Vieques and Culebra being added in the place of the municipality of Rio Grande. The change resulted in a diminished number of schools, but it did not simplify the work of the superintendent inasmuch as the new territory was especially difficult to cover. The scarce and slow means of communication between Fajardo and the islands of Vieques and Culebra have not only prevented me from making as many visits to these schools as I should have desired, they have also proved detrimental to several features of our school work. The spring conferences held at Fajardo were not attended by the teachers of the neighboring islands, nor has it been possible to bring together at any one time all the teachers of the district, as is being done elsewhere, owing to many of them being unwilling or unable to stand the hardships and discomfort of one or two days' sea travel in open boats. The plan of having the Vieques and Culebra schools under the immediate care of an assistant superintendent was followed in past years, and there are still many reasons to recommend its expediency.

The financial situation of the district is better than it was last year, when, as stated in my last report, it was far from satisfactory. The Vieques school board now counts with a surplus of some $4,000 which it is intended to apply to the construction of a modern graded school building. A splendid site has been donated by the municipality, and although much difficulty has been experienced in securing a clear title to the land there are reasons to believe that everything will be satisfactorily arranged at an early date. The Fajardo school board, which closed its last budget with a deficit, is now able, owing to a greater abundance of funds, to undertake extensive and much needed improvements in the Fajardo high and graded school. The Naguabo board still forms the one discordant note. Its affairs have not been better managed than they were last year, and it is hopelessly in debt.

The main feature of this year's work is a radical improvement in the general character and quality of the buildings used for school purposes. With very few exceptions the efforts made in that direction have been very successful. School boards, teachers, and house owners seem to have shown a spirit of cooperation which could not but produce good results. Some of the schoolhouses have been enlarged, nearly all have been painted over and fenced in, latrines have been constructed, flowers and shrubs have been planted about the schools, with the result that all or nearly all of the buildings show decided improvements. In a few cases, where the owners of the houses were unwilling to make the small outlay of money represented by the modifications demanded, the schools were moved to a new site and to a better building.

In three or four instances action had to be delayed and the schools have been allowed to remain in unsatisfactory buildings because no better ones

were available, and the radical step of closing the schools altogether was not deemed an advisable one under the circumstances. Education acquired under the discomfort of a leaking roof or of a broken down floor is at all times better than no education at all. In the town of Vieques, the building used for school is an old residence very ill adapted to the purpose. The rooms are relatively small, the ventilation is poor, and the general conditions are a great handicap to teachers and pupils alike.

No better building is to be had, however, and no improvement need be looked for until the proposed new building has been erected. In Naguabo the schoolhouse in use at the beginning of the year was equally unsatisfactory. The building was in a state of deterioration, and as the school board was some twelve months behind in the payment of the rent, the owners showed no disposition to carry out the necessary repairs. There, again, it was found very difficult to secure an acceptable building. Some sort of a makeshift had to be found, however, and the schools were finally moved into a new building, which, if it did not solve the difficulty altogether, was still a notable improvement on the old conditions. In Fajardo the school board is studying the question of carrying out this summer the many general changes and innovations demanded by the high and graded school building. The woodwork of this school is rapidly deteriorating. The American lumber used in the balconies and outside stairways must at an early date be replaced by native wood, which will resist much better the action of the weather. A substantial fence has to be put around the building; a cistern has to be erected in order to give to the school the supply of drinking water, which is not obtainable at the present time. All this will be carried through this summer. The insular government has assigned a fund of $1,000 for this end; the school board will contribute an equal if not a greater amount. It is thus apparent that a notable progress has been made in improving the material side of our schools, and next year ought to find this district in a most satisfactory condition in this respect. At all events the fight for better buildings will be continued with unabated energy, and, it is hoped, with continued good results.

Some advance has also been made in the way of improving the school furniture. Large blackboards mounted on substantial frames have been placed in all of the rooms. The Fajardo board at the beginning of the year secured a large number of new desks, and the Vieques and Naguabo boards had constructed old-fashioned desks and seats, which, while not as comfortable as the modern ones, have nevertheless contributed no little to the betterment of general school conditions. The question of clocks for the schoolrooms is one that is causing new difficulties each year, and at the same time occasions a rather heavy amount of expenditure. No satisfactory make of clock, capable of several years' use, has as yet been found. In the Fajardo school the question of getting a good supply of drinking water has caused many difficulties. No attempt has been made at placing filters in this school so long as the dirty river water is the only one which can be had for drinking purposes. The plan referred to above of erecting a large cistern on the school grounds will obviate this difficulty. The question of sanitation in all the schools, but especially in the rural schools has received more attention this year than in the past. In every schoolhouse satisfactory latrines have been erected, and no occasion has been allowed to pass to call the attention of the teachers to the importance of watching over this detail, which, it has been shown has a direct bearing on the health and on the death rate of the people of this island.

The janitor service has been a notable improvement over the past year. In the towns of Vieques and Fajardo the school boards have maintained and paid for janitor service in all of the schools of the municipality, rural as well as graded. This is a departure from the ordinary; but the greater expense thereby occasioned has been more than justified by the results. The teachers of the district have done much to better the general aspect of their schools. Very many of them have purchased, at their own expense, a sufficient number of pictures wherewith to decorate their rooms, and, as indicated before, not a few rural teachers have secured seeds of flowers and shrubs and have maintained a little garden about their school.

The attitude of the teachers throughout the year has been one of marked sympathy with the aims and methods pursued by the Department. In all the details of their work they have shown a spirit of good will which has contributed no little to the results achieved. This spirit has been displayed to a marked degree in their regular attendance at the English classes held each week for their

benefit. The enthusiasm for learning the English language has been even more marked than in past years, the one or two solitary exceptions to this rule but tending to bring out with more prominence the zeal and enthusiasm of the main body of teachers.

The place obtained by the teachers of this district at the recent examinations in English is not yet known to me, but the ability they displayed in the oral exercises clearly demonstrated to the examining board the great progress they have made in the English language. It is thought that a few of them will be given an opportunity to teach in English in the course of the coming year, and if they be successful, a giant step will have been taken in the way of introducing our national language in this island. The people of Porto Rico are beginning to demand, of their own accord, that greater attention be given to the teaching of English in our schools. The school board of Fajardo is willing to have English put on an equal basis with Spanish. It wishes that wherever practicable the pupils of the public schools spend one-half of the day with an English-speaking teacher and the other half with a Spanish-speaking one. In Vieques it is the desire of the authorities that our schools be placed on a strictly English basis as soon as possible. I have heard some complaints from these authorities, as well as from other prominent people of that island, to the effect that too little time was being devoted to the teaching of English and that the progress in that branch did not quite correspond to their aspirations. It would seem that this general disposition on the part of the school boards to secure more English-speaking teachers, and, on the part of our teachers to secure a thorough command of the English language, effectively disposes of the mushroom opposition which one or two newspaper reporters have seen fit to make against the introduction of the English language in our schools on a much wider basis than heretofore.

The teachers of English have, generally speaking, displayed a notable enthusiasm for their daily work. The labors of some have been crowned with good success, others have met with difficulties which prevented them from obtaining the results which they were entitled to expect. As we look back at the progress which has been made in the introduction of the English language in the island schools during the seven years which have elapsed since the American occupation, the rather meager results obtained lead us to consider whether the time has not come to take more radical measures, in order to hasten the day when we may place our schools on an English-speaking basis. We can not expect rapid progress as long as we have but one, or at most, two teachers of English in each town of the island, and as long as each one of these teachers has under his daily charge from five to seven and eight groups of pupils. The question is not, therefore, so much to employ more competent teachers as it is to secure a greater number of them. In case it be not possible to bring down a larger number of American teachers, recourse may be had to those native teachers who have acquired a sufficient knowledge of English. The number of these is, of course, still limited, but there are a few in each district, and their number will rapidly increase.

A trial will be given to them next year, and on their success or failure depends a great deal of the future of the English language in Porto Rico. It will be objected that the English spoken by these teachers will be imperfect, and that there is a danger of their passing their defects to their pupils. The danger exists, but the continued presence of some American teachers in our schools, and the growing number of American and English-speaking people settling in this island will greatly obviate this difficulty. Of course, in such places as Fajardo, where there are a sufficient number of American teachers, the plan of having one daily session taught in English and the other in Spanish is far preferable. In this way both languages may be taught by teachers in their own native tongue, both are given equal standing and importance, and the progress ought to be equally rapid in both. It is intended to try such a plan as this in Fajardo next year, and, if successful, it will be extended to other towns as soon as an opportunity presents itself.

The issuing of two and three years' licenses to some of the teachers at the close of last school year has proved a successful measure, inasmuch as it has protected deserving men in their positions, and has minimized the influence of politics in our schools. This same policy ought to be continued in the future with the limitation that no teacher be given a license for the maximum extension of time, three or five years, unless he know sufficient English to be able to teach in that language if called upon to do so.

One of the most pressing needs of our schools at the present day is a course of study for the graded schools. The one now in use is not at all adapted to local conditions. It bears little or no relation to the text-books in use; it was apparently written for teachers of much vaster accomplishments than our Porto Rican teachers possess. It attempts too much. It is generally recognized that the formal teaching of such branches as physiology, hygiene, nature study, etc., in the lower grades of our schools has not given good results, and that all these branches could very well be left out of the course of study during the first four years of school.

This would result in a saving of time and would make it possible for us to give more attention to the more elementary branches of study, such as language—English and Spanish—writing, and arithmetic. The duration of the course of study is also too long. The greater number of our pupils leave school after the third and fourth year. In many towns we take no cognizance of this fact and make an ostentatious effort to keep open the complete eight grades, with the results that our lower grades are everywhere overcrowded, while the teachers of the higher grades often find it difficult to keep a dozen or two of pupils together. The per capita cost of educating these few higher-grade pupils is enormously great, and it would seem that the money thus spent in meeting the small demand for higher grades could be much more profitably spent in meeting the very large demand for more primary grades. It is thought that our course of study could be reduced to six years, and that very little inconvenience would be caused by doing so, inasmuch as our high schools could take care of many of those pupils who would thus be thrown out, while it would allow us to reach a much larger number of pupils by making more room at the bottom, where the pressure to come in is greatest.

Another change, the necessity of which is becoming more apparent every day, is the removal of many of the text-books now in use and the introduction of better-adapted ones. Numerous school books have been especially prepared in recent years for use in our tropical possessions. They are all much better adapted to local conditions than the books introduced a few years ago. A better set of English readers, an arithmetic based on the metric system, more advanced books on Spanish language and literature, a simple text-book on physiology, such as Cornman and Gerson's, Dodge's geographies, all these are books which would meet the actual need of our schools, or could replace with advantage some of the books now employed.

Two examinations for teachers' certificates were held in the course of the year. Of the many candidates who presented themselves but one succeeded in obtaining a certificate.

This is to be regretted in view of the fact that we are everywhere short of teachers. In many instances incompetent men have to be kept solely because if we were to cancel their certificates the number of vacant schools would grow beyond proportion. School boards can no longer discriminate in the appointment of teachers. Their first object is to find the necessary number, and they are much less particular as to the kind of men they employ.

The fact that it is now very hard to secure a graded certificate is turning not a few ambitious young men away from the profession of teaching. The industrial and agricultural conditions of the island have so greatly improved of late years that it is easy for an active and resourceful young man to obtain employment at a better salary than the one now paid to rural teachers. These are some of the considerations which argue in favor of again lowering the requirements for securing teachers' certificates. The severity which is now observed in the examinations partially defeats itself, for while it gives us a few fairly educated teachers it obliges us to keep many unprogressive and careless teachers who should have made room for younger and better men long ago.

The attendance at the schools of this district has been quite up to the high average obtained last year. Were it not for the several higher grades of the town schools, in which it has not been possible to admit more than 20 or 25 pupils, the average enrollment for this district would not fall below 55 and the average daily attendance would hover between 49 and 50.

The pedagogical conferences held in Fajardo toward the middle of the month of March were beyond any doubt the most successful ones ever held in Fajardo. They were attended by all the teachers of the district, with the exception of those of Vieques and Culebra. The success of these exercises was in great part due to Mr. Paul G. Miller, who had carefully planned all the work beforehand and who succeeded in imparting a very practical character to the discussions.

All the teachers came away pleased and expressing a desire that conferences of a like nature be held each successive year. The public meeting held in the town theater in connection with these conferences was attended by well-nigh everybody in town. The addresses of Mr. E. W. Lord, Mr. Fernandez Juncos, and other speakers were thoroughly appreciated, and did much to keep alive the interest which this community has always displayed for everything connected with our schools.

In conclusion, I would say that while an observant eye could still point out numerous weak spots in the schools of this side of the island, it is none the less true that the year about to close has been marked by a notable improvement in the quality of schools, in their material as well as in their professional aspects, and that the teachers of the third district have shown themselves, by their faithful work and intelligent endeavors, worthy of the esteem and respect of all those who have the interest of the Porto Rican schools at heart.

Respectfully submitted.

M. A. DUCOUT,
Superintendent of Schools.

THE COMMISSIONER OF EDUCATION,
San Juan, P. R.

SCHOOL DISTRICT NO. 4.

DEPARTMENT OF EDUCATION OF PORTO RICO,
OFFICE OF DISTRICT SUPERINTENDENT,
Humacao, May 25, 1905.

SIR: I have the honor to submit herewith my first annual report as superintendent of the district of Humacao.

On account of the recent rearrangement of territory, this district has, I believe, gained the distinction of being one of the longest on the island. Its geographical center lies in Yabucoa, but for various reasons which will readily occur to those acquainted with the two towns, Humacao must be taken as the district headquarters. This being so, we might expect a certain inequality in the work of direct supervision, since the main body of schools recedes to a great distance from the office of the superintendent. By means of constant activity only may one overcome this natural difficulty. The poor condition of the roads heretofore, and the very frequent rains, have made the work arduous up to the present, but it is hoped that the road improvements that are being effected will lighten the task considerably.

On taking up my work here I found a fourfold problem awaiting solution, namely, the many-sided difficulties of the school boards, the necessity of further improvement in buildings and equipment, the question of developing the professional view point of the teachers, and the matter of method and efficiency in office management .

The latter issue first engaged my attention, since it was, of all these matters, the most susceptible of immediate overhauling by me. Finding things in rather a neglected state, I proceeded to work with the object of systematizing to such an extent as to make the office work easier to handle and more reliable. I have tried, however, to avoid allowing it to consume effort and time disproportionate to its importance—an error into which some of us fall on account of our fondness for extreme minuteness. In an office, it seems to me, the necessary details should be found in a handy and neat condition, but practically superfluous materials should be tabooed. I have therefore put in order all communications received, numbered and indexed outgoing letters and telegrams, and catalogued on cards—a method which can not be too strongly commended—my book account, lists of school property and furniture, teachers' absences, circulars, etc. I have also arranged on cards a series of personal opinions and appreciations of my teachers. This, I should imagine, might be of much use to any succeeding superintendent as supplementary to the regular reports. It has been possible for me to increase extensively the office equipment, so that now the Humacao office has all the necessaries. The mimeograph I have found extremely useful and labor saving. With the addition of a vertical letter file and a copying machine, which shall combine the good points of the letterpress and the carbon paper, the equipment will be fairly complete.

Of the teachers, much more may be said than I can here state. This district contains a good corps of teachers. The majority of them have worked faithfully and hard. Their schools generally have made reasonable progress, and in several cases excellent progress, as I can testify both from the visits I have paid and from the "reports on progress" which they were requested to send in toward the end of the year. From time to time, by means of circular letters, I have made suggestions toward possible improvements, and I am glad to state that, almost without exception, the suggestions were well received and acted upon. As a result of these the teachers have in several cases bettered their methods, and in all instances they have greatly improved the appearance of their rooms. To-day there is scarcely a school in the district which does not speak for the teacher's efforts to make his surroundings more attractive. Many have bought pictures and little adornments in the States, and have added to these some illustrations from the periodicals to which they have subscribed. Almost every teacher is at present a subscriber to some educational paper, and several to more than one.

But the greatest progress has been made in the matter of punctuality, both of pupils and teacher, exactness in details, improvement in the minutia of discipline, and promptness in carrying out directions. It is interesting to note that tardy marks have kept decreasing as the year has advanced, and that in the great majority of schools there has been a notable increase in enrollment, attendance, and per cent of attendance for the second term, the figures for which are the latest in my possession, as compared with those of the first term.

Special mention should be made of the teachers of Yabucoa. Here a body of faithful teachers, under the leadership of an enterprising and enthusiastic principal, has done uniformly good work. Of the seven teachers' conferences celebrated in this district, four were held in Yabucoa with excellent results, all the teachers contributing, and it is hoped gained something. A school paper issued by the pupils of the graded schools has attracted considerable attention, both for its articles and for its drawings. On Washington's birthday a programme of unusual merit was carried out, and the entire town took part in the exercises. It is to the credit of the graded teachers that they have done such good work in so poor a building. Next year a new schoolhouse, which is now almost finished, will help exceedingly toward even better results.

The teachers' institutes conducted in Humacao on March 21 and 22 by Don Felipe Janer were distinguished by the interest shown and the unfailing attendance of the teachers, some of whom came from a great distance, and at a considerable expense. Under the skillful direction of Mr. Janer, all the topics were discussed in an admirably sane, logical, and unoratorical manner. Most of the teachers took part in the discussion, and many visitors came to listen. Before passing on to the question of improvements in the schoolhouses, I wish to state that the regrettable incident that occurred in the public conference at which the commissioner of education and the secretary of the department were present was wholly unexpected by most of us, and that the termination given it was made necessary by the circumstances. It was not my intention to restrain the liberty of speech of anybody, but simply to insist on the maintenance of the common courtesies.

The improvement in the schoolhouses of this district may best be set forth by calling attention to the statement of the general superintendent of education, in which he says, after spending several days here and visiting many of our schools, that Humacao stands next to San Juan in the excellent hygienic and material condition of the school buildings. The change in the appearance of them has been much commented on by visitors to Humacao.

At the beginning of the year the owners of schoolhouses were notified that their buildings would not be rented unless they were properly repaired and painted before the opening of the school year. In the majority of cases these instructions were heeded. Several schools were enlarged in order to seat with comfort the required number of children. Of the two schools in which I found families living on the premises, one was vacated in accordance with section 10 of the school laws. The other, on account of special circumstances, continues in the former condition in spite of efforts to effect the required change. If the family should not move before the beginning of the next school year, the building will not be used for a school.

The school which has undergone the greatest improvement and enlargement is the so-called "Escuela del Pueblo," of Humacao. At first in a dilapidated condition, with poorly lighted rooms and bad hygienic conditions, it is now reckoned one of the best municipal buildings devoted to school purposes. Sep-

arate playgrounds have been provided for the boys and the girls; separate outbuildings erected; fences built, and garden plots formed, in which the teachers and pupils have raised extensive beds of flowers. Where formerly only four rooms were occupied, we now have nine, besides an excellent storeroom for books. Less rent is now paid for all this than was paid last year for the four rooms alone.

Since the Yabucoa building of six rooms is nearing completion, and since the Patillas school will probably be built during the summer, it seems certain that the district will be reasonably well provided with schools. A new schoolhouse at Maunabo is an absolute necessity.

During the year several schools were transferred to the towns, either because of failure to secure teachers or because of lack of attendance. The results have in every instance justified their removal.

Of the school boards I have little to say. It was my fate to find them all on the point of resigning, and two of them made the attempt on several occasions. They were, however, induced to continue, so that there has been no change of school boards, except through the general elections, during my term of office. They are one-man affairs, and sometimes not even that, and are little interested in the progress of education.

To summarize, I should say that the district is in a fair condition in respect of education. The schools are well equipped and well situated. More schools are needed in most of the towns, and several in the rural districts of Humacao. A library has been installed in Humacao contiguous with the Escuela del Pueblo, and it is much frequented by the school children.

A few words concerning the instruction in English may not be out of place. Wherever possible, I have given the English teacher a separate room. Real instruction in living English has been emphasized, and the mere book-method has passed away. In Humacao, beginning with the second term, the teaching in English was given an equal position in the upper grades, with the instruction in Spanish. We therefore have, in the Ponce de Leon School, the half-day system in both languages. Arithmetic, language, and geography or history are taught in English, the other subjects being given in Spanish. Good progress has been made in spite of the inconveniences to which that school has been subjected. This system, I feel, is the one that should, for the present, be made general on the Island, even though, as is quite natural, it has some serious defects. I believe that instruction entirely in English, excepting in such large cities as San Juan, Ponce, and Mayaguez, can not be made successful for some time to come. That it will come eventually, there can be no doubt. I believe that it should gradually replace the half-day system, just as the latter is replacing the so-called "special" method.

I take the liberty of making here a few suggestions which will certainly be of use to this district, and perhaps to others.

1. School boards should be instructed at the beginning of the year to enforce contracts with teachers, and not to accept their resignations without proper investigation. The school board of Humacao, which started in to accept resignations for the most petty reasons, has been brought to see how prejudicial this is to the educational interests of the community.

Recently the resignation of a certain teacher, who alleged ill health, was rejected because the teacher could not substantiate his pretext. A good precedent was then established. I believe that if the school boards were to investigate each case much labor might be saved for all of us. Although a resignation has no force unless approved by the department, many of the teachers do not understand this, and much confusion is the consequence.

2. Teachers should be given plainly to understand that they must, in case of resignation, continue at school until their resignation has been approved by the department.

3. It should be suggested to the school boards that yearly contracts for house rental should be drawn up and enforced.

4. A concerted plan of action should be formed for compelling delinquent parents to send their children to school regularly, as provided for in section 60 of the school laws; and justices of the peace should be compelled to carry out the provisions of the law mentioned. The chief obstacle to success in this matter is the justice of the peace. Not unwilling to ostentate his authority in such harmless affairs as oral warnings, he shows the greatest obstinacy in passing the only salutary corrective, namely, fine or imprisonment. Besides, it is exceedingly difficult to complain of him to his superiors, since he works very leisurely in this matter, and always has an excellent excuse. In this district

I have kept the justices busy with complaints about delinquent parents, yet, in spite of repeated transgressions, no parent has, up to the present, suffered more than an empty warning. An enthusiastic teacher and a well-conditioned school are undoubtedly most instrumental in obtaining a good attendance; but, unfortunately, many of our teachers and schools are not of this class. Besides, cases present themselves in which the official punishment is the only useful measure. On account of the great importance of this side of our work, I would suggest that the department send to the superintendents printed forms drawn up in legal phraseology, and addressed to the justices of the peace. These blanks should be used individually—that is, each case should be reported on a separate blank—and should contain the name of the parent or guardian and his residence, the name of the delinquent child, that of the teacher making the complaint, and the school and date. In addition, the department could require the superintendents to report the names of the officials who are not careful in carrying out the mandates of the school law.

5. All vaccination certificates should be filed in the office of the superintendent, thus avoiding much work and annoyance in the future.

6. It seems to me that the classes in English for Porto Rican teachers might with profit take the form of model or practice lessons, such as would be of use to them in their own teaching of that language. Two groups could be formed: one for rural teachers, the other for graded teachers. By means of some such plan the teaching of English, where there is no American teacher, would give better results, and, I think, the teachers would not be losing anything.

In closing I wish to thank the commissioner of education and his assistants for the courteous treatment and the cordial support always given me in the fulfillment of my duties.

Respectfully submitted.

J. WARSHAW,
Superintendent of Schools.

The COMMISSIONER OF EDUCATION FOR PORTO RICO.

SCHOOL DISTRICT NO. 5.

DEPARTMENT OF EDUCATION OF PORTO RICO,
OFFICE OF DISTRICT SUPERINTENDENT,
Caguas, June 30, 1905.

SIR: As required by law, I have the honor to present to you my report on the fifth school district for the academic year 1904–5.

This district is composed of the municipalities of Caguas and Gurabo, San Lorenzo and Juncos, and Aguas Buenas, with the personnel expressed below:

	Principal.	Acting principal.	Grade.	Night.	English.	Rural.	Total.
Caguas	1		11	1	3	10	26
Gurabo			3		1	4	8
San Lorenzo		1	4	1	1	6	13
Juncos		1	3		1	6	11
Aguas Buenas			2		1	5	8
Total	1	2	23	2	7	31	66

The San Lorenzo board was unable to maintain 12 rural schools, and consequently the number was reduced to 10, but, due to the scarcity of teachers, only 8 have been actually working during the year; and Aguas Buenas, for the same reason, could open but 4 rural schools.

Many teachers have resigned their positions in the course of the year, causing considerable annoyance in the schools. I think that in the future all the teachers should be required to fulfill their contracts to the letter, so as to avoid the aforesaid evil.

Thirty-one buildings with 52 rooms have been used for school purposes. Some of these schoolhouses are excellent, many are good, and, of course, poor ones are not lacking, but they are only a few and I hope to do away with them next year. A 3-room graded school will soon be erected at Aguas Buenas; the Caguas board

has in its budget an allotment of $350 for the purpose of building a rural school which will be completed during the coming summer vacation; two caminero buildings located on the Military road, within the boundaries of Caguas, have been repaired and equipped for school purposes at the expense of the board, and two more will probably be used next year.

The scholastic work in both town and rural schools has been carried forward with good spirit and, generally, in a steady, intelligent, and efficient manner; most of the teachers have been successful in the performance of their manifold duties, and a large majority of the pupils have been ready and eager to take advantage of the opportunities offered for their education. The enrollment and attendance have been comparatively higher than during any previous year, and the progress made up to date is correspondingly good.

One of the evils I have had to contend with is that a few parents, anxious to place their children at remunerative occupations, have evaded the compulsory attendance law, and I am sorry to state that the judicial authorities have not made the slightest effort to stop the practice, although frequently urged to do so.

I submit to your consideration the advisability of authorizing the school boards to create a corps of truant officers legally empowered to make arrests and to prefer charges to the justices of the peace against all persons guilty of disregarding the attendance law.

In the first week of January the course of study for rural schools was received at this office and immediately distributed among the teachers. It has been a great help in the reorganization of the rural schools, which are now uniformly graded throughout the district.

A course of study for six or eight years for the town schools should be prepared, as the one now in force is far from being of practical use. The ground to be covered in the different subjects taught in each grade is not definitely outlined, and the result is that each teacher gives instruction to the extent he or she thinks best. I have tried to ameliorate the existing conditions by issuing graded courses in physiology and hygiene, geography, history, and physical culture; but I think it is time for the Department to take some action in the matter.

During the second term we were greatly hampered by the appearance of cases of smallpox in some parts of the district, to such an extent that work had to be discontinued in one school. In another school several pupils were afflicted with diphtheria. Perhaps it would be advisable to organize a systematic medical inspection of the children in the public schools, under the immediate charge of the health officer of the municipality, so as to prevent the spread of contagious diseases.

A highly commendable feature of this year's work was the teachers' institute held at Caguas, March ult., under the direction of Miss Susan D. Huntington, the able and experienced teacher of the normal school. Almost all the teachers of the district attended the institute duly prepared to take part in the discussions of the several pedagogical questions presented for debate. One of the evening sessions was reserved for a meeting of a general character, and we had the pleasure of hearing speeches delivered by Doctor Falkner, Mr. Ames, and Senor Martínez.

Forty-three teachers took the oral and written English examinations prescribed by the department, with the following results: Average for Group A, 80.98 per cent; average for Group B, 68.50 per cent; average for the district, 74.74 per cent.

The legal holidays have been duly celebrated. Programmes were carefully prepared and the attendance of patrons and the general public was large and select.

The school boards of Caguas and Aguas Buenas deserve special mention for the deep interest they have shown in furthering the cause of education and for their untiring efforts to improve the condition of the schools.

Respectfully submitted.

C. A. Reichard,
Superintendent of Schools.

The Commissioner of Education,
San Juan, P. R.

School District No. 6.

Department of Education of Porto Rico,
Office of District Superintendent,
Guayama, P. R., May 31, 1905.

Sir: In compliance with section 62 of the school law, I have the honor to forward herewith the sixth annual report on public schools of the district of Guayama.

The district, which was last year composed of the municipalities of Guayama and Patillas, is now composed of the municipalities of Guayama and Cayey, Patillas having been transferred to the district of Humacao. Cayey municipality, being composed of Cayey and Cidra, has brought an addition of about 18 new schools over that of last year.

Little change has taken place in school buildings. Nearly all that were in use last year have again been opened; the new school buildings which were promised have yet to be built, although the sites for them have been secured for over a year.

The city of Guayama was granted an industrial school, which was opened September 26, 1904, with an enrollment of 110 pupils. During the first term the work was not at all satisfactory. Supplies were late in arriving from the United States; drawing teacher did not report until second month of the term, and when supplies did arrive the teacher for carpentry failed to report. It was not until the beginning of the second term that the school was really in running order. It was hard work to keep the children interested in the school with nothing more than promises to work with. The second term was much better, and all seemed to take quite an interest in the work. A large portion of the pupils were of the better families of the city, and the work done by them showed that they were anxious to learn; but just when every one was doing his and her best the legislature failed to appropriate money for continuing the industrial schools of Arecibo and Guayama after June 23, 1905. This at once caused a decrease in the attendance, and in the third term very few were reenrolled. The department, however, has granted to the city of Guayama six more schools in lieu of the industrial, in order that none of the children now in the industrial school may be without a school next year.

Those children who attended the industrial school have no doubt lost a little as far as the academic work goes, but I think by hard work on the part of both teacher and pupil, and close application on the part of the latter, we may hope to have them up to the standard by the end of the first term in the coming year.

A number of improvements have been made in the school buildings by the local board of Guayama, among which were the stationary washstands and filters which were placed in the Washington graded school, the connection of the pipe leading from the roof of the building to the sewer, which prevents the flood of water which used to sweep over the ground in front of the school whenever it rained, making it impossible for the children to enter without getting wet, and the transferring of the graded school of Calle Nueva to a large brick building which contains modern plumbing. This building contains at present only three classes, but next year there will be at least six if not seven opened there.

In Salinas I am glad to state that the board has succeeded in obtaining the entire house, which was occupied last year by the alcalde, justice of peace, and one graded school. Now we have two very nice rooms in this building, with an enrollment of 123. The other graded school is in a small brick building, which, although cool and light, is entirely too small for a class of 50 children in the fourth and fifth grades.

The schools of Arroyo have been rather cramped for room this year. I was obliged to open all four classes under one roof on account of there being no other building suitable in town for school purposes. Of all the towns of this district Arroyo is the one that is most in need of a large school building. How Mr. Enrique Huyke has been able to keep the attendance up to where it is, is beyond me. I would suggest that if it is possible a graded school of at least four rooms be built next year in this town.

Cayey schools are in fairly good condition. The Harrison graded school needs paint rather badly, and I think that the board there will be able to paint it before the reopening of the schools. The building in the center of the town was formerly a private dwelling house, and contains six classes. Although the owner has not received any rent for several months, he has been able to keep the building in pretty good repairs, and it is quite presentable. Cidra, a barrio of Cayey, has three graded schools; two in one building, owned by the munici-

pality, and one in a small room of another house on the edge of town. This room is entirely too small for the class, but I am sorry to say it is the only one that can be rented in town. The people of Cidra take quite an interest in its schools, and have requested several times that an English teacher be sent to teach there. The rooms of the building owned by the municipality are of good size, plenty of light and air, and, best of all, are clean.

All the schools of the municipality of Guayama are equipped with modern furniture, with the exception of three rural schools—Palmas Abajo, Pitahaya, and Yaurel. All the schools have two chairs, a teacher's table or desk, clocks, bells, filters, bookcase or closet, and long blackboards, 3 by 12 feet, made by the local board.

Cayey municipality has not been so fortunate. While most of the graded schools have desks, one or two still have the long table and bench, and the rural schools have only the old-time bench with table desk in front. I am in hopes that the board will be able to buy a few desks for next year, in order that the schools may be more presentable. In two of the schools the children have to rest their slate or paper upon their knees, and use that for a desk.

Progress in the schools, as a whole, has been very good. During the first term not much interest was shown either by the teacher or pupil. Enrollments were poor and attendance miserable. The fault certainly was the teachers', and I was compelled to address a letter to them requesting that they give a little more attention to the enrollment and attendance.

Most of the teachers were discontented with the manner in which they were compelled to receive their pay, but after the second term began I saw a great improvement. Teachers had brightened, and were taking an unusual interest in their classes, and the result was that the enrollment increased at least 10 per cent, while the attendance was all that could be expected at that season of the year.

A teachers' institute was held here in Guayama, March 28 and 29, with Mr. E. N. Clopper, principal of the Central High School of San Juan, in charge. All the teachers of the district were present. The local board, in order to help demonstrate some of the methods of teaching, brought one of the graded classes from Arroyo, Mr. Enrique Huyke's; one rural school from barrio Corázon, Mr. Gregorio Manautou's, and, together with two of the graded schools of Guayama, had the classes in session for half a day, in order that all the visiting teachers would have a chance to see the methods used by the teachers of the classes, and to make notes in order to enter into the discussions and to give their views on the methods used. The afternoon session was given entirely to that work. After the classes were dismissed the board gave a dinner to the children from out of town, and they all seemed to enjoy themselves very much. The hotel expenses of those teachers who lived out of town were paid by the local board of Guayama, while the board of Cayey paid for the transportation. Many of the teachers expressed themselves as being highly satisfied with the institute, and claimed to have gained considerable knowledge from it.

At night, March 28, Dr. R. P. Falkner, commissioner of education, Mr. José Gordils, and Mr. Celestino Domínguez delivered addresses to the public in the Methodist Church.

The school board of Guayama has taken quite an interest in the work of the schools this year. They have visited with me all the schools, graded and rural, and wherever anything was needed have ordered same to be bought at once. Mr. Cuevas, president of the board, and Mr. Dominguez, member, have examined nearly all the schools and state that they are entirely satisfied with the work being done. A large number of the new American desks have been bought and placed in the schools, together with clocks, filters, bells, chairs, bookcases, and brooms. The board has also bought a complete outfit of athletic goods, baseballs, bats, masks, chest protectors, gloves, and mits, tennis for the upper graded schools, croquet, footballs, and a volting pole. They have also bought dumbbells, Indian clubs, pulling machines of rubber, rings, horizontal bar, parallel bars, and trapeze. These are to be put in one of the school buildings, and those children whose deportment has been good will be allowed the use of same on Saturdays. Any child who has been absent without cause or whose deportment has not been good will not be allowed on the playgrounds. The municipality has granted to the school a plot of land of 4 acres for the purpose of making an athletic park. This park will be used to stimulate an interest in the work of the school as well as to improve the body and physique of the children.

Bids for the building of a rural school building at Central Aguirre have been asked for, and I am in hopes that this building may be built before the begin-

ning of the next school year. The local board of Guayama, together with the department of education, are going to build four rural school buildings, at a cost of about $700 each. Each school will have from 2 to 4 acres of land attached on which the teacher will be able to grow a small garden. It is hoped that these schools will be completed by the 1st of September.

The agricultural school of Arroyo has not been an entire success this year. Very small boys have attended this school and they were really not able to grasp the idea of farming. The school should be changed to a site near running water and should have at least 4 acres of land. Mr. José E. Navarro has worked hard this year, but everything has been against him. I think that it will be better to change the present agricultural school into a rural, and I am sure that the result would be satisfactory.

There has been only one dark spot in this year's work, and that was at the changing of the local boards at the beginning of the year. When the treasurer of the former board was requested to turn over his accounts it was found that there was a shortage of several hundred dollars. The treasurer has been arrested, but so far nothing else has been done.

Of the teaching force this year there is little to be said. No great changes have taken place. The vacancies caused by the resignation of Mr. John J. Alsieux and Miss Maria I. Colón Rosich were filled at once by Mr. José Ortiz Ramos and Mr. Manuel Planellas. Very little sickness has occurred among either the teachers or children, although at one time I was afraid that smallpox would cause me to close the schools of Guayama.

Heavy rains have on two occasions prevented the teachers from attending their schools, but on the whole everything has gone on smoothly.

The examination held for graded and rural teachers did not turn out as well as expected. I feel obliged to state that I think the graded was rather severe. The examination in English for Porto Rican teachers has been held, but so far the results have not been made public. In the oral examination, while no extra high marks were obtained by the teachers here, still the general average was good. Progress has been made that is easily observed, and I feel that many of the teachers that took the English examination will be able to teach some of the subjects in their schools in English—say, arithmetic and geography.

The plan of study for the rural schools, issued by the department of education, has been a help, but it still can be improved upon. A uniform course of study should be issued for the use in the graded schools in order that all schools in each district of like grade may be working upon the same basis.

Books and supplies this year have not been altogether satisfactory. Of the books, there has been a plenty, but the texts should be changed. Supplies have been short, especially ink, chalk, pen points, composition books, and copy books. I am satisfied, however, that next year this defect will be corrected.

More schools are greatly needed in this district, especially in the rural districts. I can use at least four each, rural and graded.

The teacher of English has been of great help this year and will be more so next, as no doubt there will be a much larger amount of English taught during the coming year, especially in the upper grades. A music and drawing teacher is also needed in the schools. While the Porto Rican is naturally musical, still some of the songs sung in the schools sound at times rather rusty.

Respectfully submitted.

JNO. W. ZIMMERMAN,
Superintendent of Schools.

The COMMISSIONER OF EDUCATION,
San Juan, P. R.

SCHOOL DISTRICT NO. 7.

DEPARTMENT OF EDUCATION OF PORTO RICO,
OFFICE OF DISTRICT SUPERINTENDENT,
Aibonito, P. R., May 31, 1905.

SIR: I have the honor to submit my annual report for the school year 1904–5.

This district comprises the same towns as in the previous year—Aibonito, Barros, and Comerio.

The school year opened with a good enrollment in all the towns. The attendance has been generally satisfactory during the entire year. For the number

of schools in the respective towns, and all statistics, I respectfully refer you to the report to be submitted by the chief of the division of school supervision.

The supervising this year has been more effective, due to the fact that the superintendent has become better acquainted with the geography of the district and the personality of his teachers. He is thus able to visit oftener, by the best trails, those schools where the teachers most need help and suggestions. Much time is hereby saved, as many of the schools are rural and are located somewhat distant from the towns. The work has also been aided by the installation of a typewriter in the superintendent's office, which is a great help in sending more frequent circulars to the teachers.

The corps of teachers this year is practically the same as the previous year. However, a number of changes have been made in the locations. Wherever possible, the married men among the rural teachers have been so located that they could live in the country near their schools. This is an important factor in the interest and attendance in the country. When the teacher goes from the town to his school and immediately returns to town after school hours, he naturally fails to touch the real life of the country, and can not become acquainted with the families in the vicinity. So it often results that the young teacher complains of poor and irregular attendance, due, in a great measure, to his failure to interest the parents of his pupils.

In some cases the schools have been moved to new locations in their respective barrios, so as to be more central, or in locations where the swollen streams during the rainy season would not tend to lower the attendance.

In a few instances the schools have been moved from their barrios to other barrios where no schools have been located heretofore. This has been done when a school has a very low enrollment or poor attendance. It is a lamentable fact that we have more rural schools than available teachers. In some barrios the enrollment is so large that two schools should be opened instead of one. These conditions can only be remedied when we have a sufficient number of rural teachers who are willing to go out into the country to live a long distance from the towns.

Considerable improvement has been made this year in making the schoolrooms and grounds more attractive. In many instances the rural schools have their school gardens. Much interest is aroused by giving each child a special part of the garden to care for or a special plant to be responsible for. The children arrive early in the morning to spend an hour or more in this work. The flowers are sometimes picked and placed on the teacher's table, thus making the otherwise bare room more cheerful and pleasant. Drains, fences, and gravel walks have been made in some cases to make the school and its surroundings an object lesson to the community of the improvement that can be made by a little care and attention. Some of the teachers have not only been interested in getting the children to work for the local improvement, but have constructed tables, benches, and desks at their own expense simply because of their true interest in the school. Such teachers who do not regard their school as a mere means of livelihood should be given all possible encouragement in their unselfish interest in their work.

The graded schools have been doing very satisfactory work this year. Two graded schools have been open the whole year in Barranquitas where they were closed last year, as explained by last year's report. The schools are overcrowded, and it seems advisable to open three graded schools for the coming year. In Comerio an additional graded school was opened in March and is doing well. In the other towns the number of graded schools has remained the same, taught by the same teachers.

In this district the grades are limited to the lower ones. This is due to the fact that, in the majority of cases, after the child has passed the fifth or sixth grade he leaves school. The question has been raised as to the advisability of making the work of the higher grades wholly in English. Here in the interior it is not practicable because the teachers are not competent to teach in English, and the children on the other hand have not had sufficient training in English so that they could do satisfactory work.

The work in English in the schools has been much better than last year, as there have been more English teachers in this district. The same teacher has been in Aibonito the whole year. In Barros there has been an English teacher since October. In Comerio we have been less fortunate, as the teacher resigned near the close of the first term. However, there is at present an energetic worker there for the last term. In order to help the teachers of Barranquitas in their preparation for the English examinations the English teacher of

Aibonito gave a teachers' class there once a week. For the last term there is an English teacher in that town, and the work done along this line is very satisfactory.

In general the classes in English for the teachers have been well attended, and a reasonable progress in English has been made throughout the district. For the first time the teachers were subjected to an oral examination by a board of three superintendents. The method used in conducting the oral examinations has proved very satisfactory. Each teacher was examined privately before the board, each member of which submitted the same question to every teacher in each group. Thus the examination was completely uniform and just. For the coming year the superintendent begs to suggest that the department select a set of questions, which shall be used throughout the island on a given date. In this way a just comparison can be made as to the standing of teachers throughout the island.

In Aibonito there has been a night school. This school is attended by persons of adult age, and the work is satisfactory.

The school boards of the district have always given their prompt aid and interest to all matters pertaining to the public schools.

Little has been done this year in bettering the furniture of the schools, due to the lack of funds. The school board of Aibonito has bought a large bell for the grammar school building. This is an obvious improvement, as the town has no public clock. Its effect on the promptness of arrival of the children to school is well marked. The school board of Barros bought a house and fitted it for three of the graded schools. This economy in a short time will give funds with which the board can build rural schools.

One general teachers' institute was held in March under the direction of Mr. Felipe Janer, of the normal school. In the evening a public session was held, in which the commissioner of education addressed the public. Much interest was manifested. Nearly every teacher attended, and the interest aroused showed the benefit of the method followed. If the same method of outlining all the subjects in our schools were followed, better results would be obtained. The teachers would have something definite to follow in planning their work, and the children would be led to realize the importance of arranging their knowledge in a logical, topical order.

The school holidays have been observed throughout the year. However, in each case the programme was made simple, to avoid spending too much school time for these special occasions.

The outlook for the coming year is bright, and district No. 7 has good reason to feel that it is moving steadily onward.

In conclusion, I thank you and your able assistants in the office for the ever ready assistance I have received.

Respectfully submitted.

GEO. L. SPAULDING,
Superintendent of Schools.

THE COMMISSIONER OF EDUCATION,
San Juan, P. R.

SCHOOL DISTRICT NO. 8.

DEPARTMENT OF EDUCATION,
OFFICE OF DISTRICT SUPERINTENDENT,
Coamo, P. R., June 1, 1905.

SIR: I have the honor to report as follows on the work of the schools in this district during the year about to close.

Bringing to your attention at once the phase of the work which it has seemed to me most urgently demanded my own attention and thought—the English—both from the standpoint of boards, teachers, parents, and pupils, as well as from my own individual point of view as a representative of the department, I find a special pleasure in being able to inform you that this year has witnessed not only the mere successful beginnings of two English schools, but these beginnings with the enthusiastic approval of both boards and parents, together with the sincerest interest on the part of the pupils to whom the privilege of membership in these schools was allowed, expressed by their earnest cooperation and their eagerness for that privilege. That it is considered a privilege hardly

needs further proof than the interest expressed to me by word of mouth, especially on the part of parents anxious for practical English instruction for their children, but as well by all the members of the boards in Coamo, Juana Diaz, and Santa Isabel, and by the alcaldes of these towns. That is considered the end of all the instruction to be received in the schools; that is their purpose, in the minds of the children, in going to school and in the minds of their elders in sending them to school—to learn English.

But it does not follow that this apparent specialization in English has resulted or is likely to result in an actual specialization in that subject, or even a partial neglect of other subjects. I do not consider English the most important. Given the necessity for special attention to the subject I consider most important, I should put that attention upon the arithmetic. Not that the pupils need especially to learn to add 2 and 2, and 4 and 3, and to subtract and divide and multiply; that they do readily enough with ordinary aptness. But the difficulty seems to be in teaching them to think. The problems in which the operation to be performed is clearly indicated present no difficulty; the operation is carried out and the problem solved. When they are left to discover for themselves the difficulty begins. They lack reasoning power. And the development of that power to think is the important mission of the schools everywhere and especially here. I have no suggestions to make; for the present I can do no more than call your attention to the fact that this is the question still open to solution which I consider of prime importance, and to say that so far as the schools of this district are concerned the step I purpose taking is in the direction of better teachers in the first grades and the insistence upon more careful attention to arithmetic in all the grades. In the two schools in charge of American teachers giving instruction in English, one in Coamo and one in Juana Diaz, arithmetic is being taught in English; and in Juana Diaz the fourth and fifth grades have received instruction in arithmetic in English. This has resulted apparently in a gain rather than a loss in the pupils' knowledge of arithmetic, due probably in part to the larger ability of the American teachers and probably in part to the pupils' desire to master the English.

It is now my intention to open next year two schools in Coamo, two in Juana Diaz, and possibly one in Santa Isabel, with American teachers in charge, which will mean that instruction in the grades above and including the fourth grade will be given in English, with the pupils of the second and third grades receiving an hour's instruction in the English language each day from an American teacher and those of the first grades receiving what instruction the Porto Rican teacher in charge may be able to give in the English language guided by the American teachers. The arrangement for instruction in the English language in the second and third grades is possible through the fact that the Spanish language is taught by Porto Rican teachers in the schools in charge of American teachers, leaving the American teachers an hour or two each day which they do not spend in their own rooms.

The instruction in geography in the American school at Juana Diaz has been given in English by the American teacher in charge, but of necessity through the use of Spanish texts. The American school at Coamo, however, besides being very large is divided into three groups, and the demands upon the teacher's time are so great that it has been necessary to have the instruction in geography given in Spanish by a Porto Rican teacher. The instruction in other subjects—history, civil government, hygiene, and drawing—has been given in English; and at Juana Diaz in geography as well.

Both in Coamo and in Juana Diaz the American school consists of the seventh, the sixth, and the advanced half of the fifth grades. The best token I can lay before you of the quality of work being done in the schools is the fact that during this year Coamo has secured one scholarship in the normal department of the university on the part of a seventh-grade pupil; Coamo, Juana Diaz, and Santa Isabel, one scholarship each in the agricultural department of the university; and a seventh-grade pupil from Juana Diaz captured a rural teacher's certificate at the last teachers' examination. The credit for this good showing, however, I may call your attention to the fact, does not fall to my own labors, but rather to those of my good predecessor. I took charge of the district December 1, 1904.

For the rural schools I am unable to report any particular changes or improvements beyond those involved by the introduction of the Plan of Study. In three schools it has been impossible to use any of the programmes proposed in the Plan of Study for the reason that, although divided into three groups, the schools consist of a large class of first-year or second-year pupils and divided

into two groups, with a small class of second-year or third-year pupils forming a third group. In other cases either one or the other of these programmes has been followed, although in some cases I might have preferred the programmes I found in use, the average of which may be represented by the following:

Time.	Class A.	Class B.	Class C.
9.00	Opening exercises		
9.10	Arithmetic	Study arithmetic	Drawing.
9.30	Study arithmetic	Arithmetic	Study arithmetic.
9.50	Study English	Study arithmetic	Arithmetic.
10.10	English	Study English	Study arithmetic.
10.30	Study English	English	Study English.
10.50	Study Spanish	Drawing	English.
11.10	Writing		
11.25	Recess		
11.45	Spanish	Study Spanish	Drawing.
12.05	Composition (Spanish)	Spanish	Study Spanish.
12.25	Study arithmetic	Study Spanish	Spanish.
12.45	General lesson (nature study)		
1.00	Physical culture		Dismiss.
1.05	Arithmetic	Study arithmetic	
1.25	Drawing	Arithmetic	
1.40	Language	Drawing	
2.00	Dismiss		

On the outlines of the ground to be covered in each subject each year a word of comment as to their excellence is so easily forthcoming that it is hardly necessary to say more than that they are an improvement and a help.

It has been my intention to make the rather radical change of converting each of the rural schools into practically what might be called an agricultural school, although the gardening, as it more properly should be called, would not be on a large enough scale to be dignified by the title "agriculture." So far this intention has resulted in nothing more than a few simple experiments for the sake of familiarizing myself with the conditions under which garden seeds produce best results in Porto Rico. The result of this change, if made, as I shall hope it may be next year, would be, I believe, not only a school garden of flowers at every rural school, and possibly at some of the graded schools, but also, at least in the rural schools, a little "truck" patch which, if it be a good truck patch, however small, would teach its lesson to every family in the barrio.

In conclusion, it is a pleasure to acknowledge the assistance readily and willingly given by the Coamo and Juana Diaz school boards, acting as boards, and by the members of these boards personally, and to report to you that here we have men who are interesting themselves with all their hearts in the work of the improvement of the schools, who see and believe in the fact that the future of Porto Rico depends upon the training of the little people in the schools to-day. The board at Coamo, laboring under the disadvantage of a dreadful lack of funds, have maintained their schools and will have paid before the beginning of the next school year all the debts incurred during this year. The board at Juana Diaz, with a comfortable showing at the bank, are arranging for the construction of rural schoolhouses; and although inclined to resent the refusal of an assignment of the additional schools to Juana Diaz which they think the municipality should have, they are willing to work ahead and do the best they can with what they have.

Respectfully,

GAIL S. NICE,
Superintendent.

The COMMISSIONER OF EDUCATION, *San Juan, P. R.*

SCHOOL DISTRICT NO. 9.

DEPARTMENT OF EDUCATION,
OFFICE OF DISTRICT SUPERINTENDENT,
Ponce, P. R., June 30, 1905.

SIR: I have the honor to submit herewith my sixth annual report as district superintendent of schools:

The good effect of the teachers' expedition to the United States during the vacation of 1904 was apparent from the beginning of the present school year. To most of the teachers this trip was a revelation, and when one considers that all that the majority of them know about the United States they have learned from the text-books used in their schools and from the articles published in the local newspapers, usually full of misstatements and exaggerations, the value of the knowledge thus acquired at first hand may be appreciated. Such a trip is worth years of study, and the effort and expense involved in organizing and handling this expedition could not have been put to a better purpose.

In my report of last year I expressed the opinion that this district possessed the worst school buildings on the island. During the present school year we have been able to make considerable improvement in the matter of school buildings, and all of the graded schools, at least, are now comfortably housed. Through the completion of the Cantera School we were able to vacate some of the worst buildings we had, thereby increasing the enrollment in these schools about 30 per cent, to say nothing of the improvement in the quality of class-room work. At present a new building for the high and grammar school is under construction on a site directly in front of the Roosevelt Industrial. This site was acquired by the municipality last January, and will form part of the extensive grounds to be finally occupied by the high, grammar, and industrial schools. The department architect assures me that the new building will be the best constructed up to the present time under the direction of the department, and when finished will, with the industrial school, complete the finest group of school buildings to be found on the island. The grounds are spacious and contain many fine trees, including some fifteen or twenty beautiful royal palms. The school board has made a liberal appropriation for beautifying and keeping the grounds in order. A fountain will be placed in the center of the high-school courtyard, cement walks to the entrances, and the entire grounds inclosed with a neat fence. There will be room for baseball and basket-ball grounds, and an appropriation has been made for purchasing such athletic goods as may be needed by the different teams.

In a number of cases we have been obliged to change the rural schools to other buildings, as the owners refused to do anything toward putting the buildings in shape for school purposes. This is due in part to the fact that former school boards never exacted anything in the way of repairs. The average rent paid is too low, many of the buildings yielding their owners less than fifty dollars per year. I have recommended that this amount be increased where the buildings are in good condition, or where owners show that they are disposed to make necessary repairs. During the coming vacation I propose to take up this matter with the owners of the buildings, and I think that by the opening of the school year our rural schoolhouses will not be the "worst on the island."

When I came to Ponce at the beginning of the school year of 1903–4, I found seven of the graded schools in the city furnished with the old, rickety, long desks and benches. I got rid of all these before the end of the year, and since the beginning of this year the school board has spent over $1,200 for new desks. As many of these desks have been purchased for the rural schools, we are using only double desks, which I find are preferable to the individual desks. They have the advantage of being much cheaper, are easier to transport and set up, and do not take up so much space. Most of the rural schoolrooms are too small to accommodate 50 individual desks, although they will hold 26 double desks, which will seat an equal or greater number of pupils. In our budget for this year the appropriation for furniture is over one thousand dollars and we shall gradually do away with the long desks and benches in the rural schools.

I can not recommend the use of adjustable desks in this country. Neither teachers nor janitors know how to adjust them and they are constantly getting out of order, due to the fact that not one native carpenter in a hundred knows how to set them up. The double desks may be employed to advantage in small graded schoolrooms. Through their use in some of the schools of the city I have been able to increase the enrollment in a single room from 12 to 15 pupils, without undue crowding, the aisle space being greater than before.

As outlined in my last report, we adopted a new plan in the teaching of English this year. Being fully convinced that no really practical results in this work could be obtained until instruction in all subjects was given in English, I put all grades above the first on the English basis, the work in all subjects except Spanish language being given in that language. For this work, in addition to the regular American English teachers, I utilized the services of nine Porto Rican graded teachers who were far enough advanced to teach in English without difficulty.

Some efforts along this line have been made in other towns of the island, but this is the first attempt to change the work of an entire system of city schools from Spanish to English. Some difficulties were encountered at the beginning, but they were easily overcome, and the results of the year's work far exceed my expectations. Practically no opposition was encountered, except from a few teachers whose insufficient knowledge of English prevented their election to positions here. For the coming year the number of Porto Rican teachers who will work in English has been increased to 15, and I can now put all the schools of the city on the English basis, including all first grades. Practically the same plan as that of last year will be followed, except that the Porto Rican English teachers will teach the lower grades, leaving the work from the third grade up in the hands of Americans.

Before leaving this subject I wish to say that with the demonstration of the practicability of this plan I consider that the problem of successful English work in the graded schools is solved. We can never popularize the knowledge and use of English in this country so long as we restrict the teaching of it to Americans. The number of American teachers we have is altogether too small for such a task, and there is no hope of increasing this number. Porto Rican teachers competent to do this work are not plentiful, but they are rapidly increasing in number, and it need be but a matter of a few years when all the school work in the towns may be done in English. Its immediate introduction in the rural schools is not possible at present, although it is my intention to increase the number of subjects taught in English in the rural schools nearest the city this year. These schools are of course the most desirable of the rural schools, and at my suggestion, the school board adopted the plan of assigning to these schools the teachers who obtained the highest marks in the yearly English examination, while those with low marks have been moved out to the more distant barrios. This has the effect of encouraging the teachers in the study of the language and of making a lazy teacher feel that neglect of this work will result in personal loss and inconvenience.

I have been very fortunate in having the unconditional support of the school board and general public. So far as possible, we have tried to avoid making unnecessary changes in the teaching force. The school board opposes the discharge of any teacher on the ground of inability to teach in English, but has passed a resolution to the effect that all new graded teachers appointed in Ponce must be able to do their work in both languages. In this way the entire corps will eventually be made up of teachers of this class, and in the meantime the teachers who do not know English can devote their time to teaching Spanish in the first and second grades, where nearly half the time is given to this subject. Special importance is given to Spanish during the first two years, in order that the large number of children who are unable to attend school more than three or four years may at least acquire a good working knowledge of their native tongue. It is not my intention to neglect or eliminate Spanish, but to give the pupil practical instruction in both languages.

The completion of the new high school building will give us the opportunity to make a great improvement in the school organization of the city. A grammar school of 8 rooms will be opened in the same building with the high school, and in future all pupils of the fourth or more advanced grades will attend this school, those of the lower grades attending the graded schools situated in various parts of the city. This centralizing of the higher grades will undoubtedly result in much better and more uniform work in these grades and will eventually give us a strong high school. One of the most important immediate results of the adoption of this plan is that it will make room for at least 150 more pupils in the city schools next year.

The opening of a commercial course in the high school is certainly a move in the right direction. Much of the instruction given in the high school at present is not the kind needed by the class of pupils attending the school. Many of them are very poor, and do not feel that they can afford the time to study Latin

French, and English literature. The commercial course, if properly handled, will hold such pupils in the high school for at least two years, and will prove of much greater benefit to them than some of the studies pursued this year.

As the grammar school and the industrial school are situated so near each other one principal will have charge of both schools. While the work of the industrial school during the present year has been very satisfactory, the enrollment has never reached the capacity of the school, and the cost of instruction per pupil was so high as to call forth considerable criticism. The plan to be followed during the coming year will remedy this to a great degree. The pupils of the school will be divided into two sections, the first section attending during the morning session and the second section during the afternoon session. The academic work will be done in one of the graded schools, one entire session being devoted to it each day. As a result 300 pupils will be enrolled, more than double the enrollment at any time during the present year, and the time devoted to industrial instruction will be the same.

Soon after the beginning of the school year I took up the matter of securing a school library of good English books. The fact that practically all instruction is given in English makes a library of this kind almost indispensable. The city has a good public library, but nearly all of the books are in Spanish, and the majority of them are not adapted to the needs of school children. At a meeting of the teachers a permanent organization, called "The Ponce School Library Association," was formed, and nearly all of the teachers offered to contribute a small amount each month for the support of the library. Soliciting committees were appointed, and a number of the business and professional men of the city gave us help. Later in the year we gave a school entertainment in the theater, with the object of raising funds for the library, the proceeds amounting to nearly $300. A large number of books have been bought, the library containing at the present time about 1,200 volumes. It is quite extensively used by the pupils, and will be more so when established in the new high school building, where a good room, with suitable furniture, has been set apart for it. Both the school board and the city council have been generous in their donations to the library, and the school board has included in its budget for next year an allowance sufficient to secure the services of a competent librarian.

In conclusion, I wish to express my appreciation of the support and sympathy I have received from the school board of Ponce throughout the year, and also thank the members of the office force of the department for their advice and assistance.

Respectfully submitted.

R. R. LUTZ,
Superintendent of Schools.

The COMMISSIONER OF EDUCATION.

SCHOOL DISTRICT NO. 10.

DEPARTMENT OF EDUCATION OF PORTO RICO,
OFFICE OF DISTRICT SUPERINTENDENT,
Yauco, P. R., May 31, 1905.

SIR: I have the honor to submit herewith my annual report on the public schools of this district for the present school year up to June 1, 1905.

Notable improvements have been made in the buildings used for school purposes and in their surroundings. When I took charge of the district the 1st of last September I found three of the graded schools of Yauco located in rooms that were so small that they would seat barely 40 pupils each; and these schools, too, were of the first and second grades, where the lack of accommodation is most felt. During the Christmas holidays, however, the school board had the partitions rearranged so that seating accommodations were provided for 55 pupils in each school. During the second school term the same school board caused an excellent wooden picket fence to be built around the grounds of the Garfield Graded School in Guanica.

Impressed by the truths brought out by the commission appointed by the legislature to study uncinariasis, I induced the school boards to demand of the owner of each rented building that he put the outhouses thereof in proper sanitary condition. At the same time I addressed a circular letter to the teachers

calling their attention to the fact that it was their duty to see that the sanitary condition of their schools was kept satisfactory. Some of the house owners offered resistance to the demands of the school boards, but this resistance was overcome, and now there is not one school building in the district that has not safe sanitary conditions. At the same time that the outhouses were put in condition many minor improvements were made in the school buildings themselves.

The school board of Yauco has voted to build a masonry and iron fence around the grounds of the Columbus Graded School of Yauco. The contract for the masonry work has already been placed.

Last February the school board of Yauco voted to set aside $2,000 for the construction and the equipment of three rural school buildings. To this number the department of education has promised to add two schools. Plans for the buildings have been prepared and approved by your office, and one site has been selected. The actual construction of one building will probably be begun in June.

In addition to improvements made in the school buildings, much has been done for their better equipment. Small nickel clocks have been bought by both school boards, so that every school in the district is now furnished with one. Eighteen blackboards have been made for the rural schools of Yauco, and all of the blackboards of the town schools have been put in good condition. Furniture has been shifted from one school to another in order to better satisfy local conditions. Finally, a stereopticon, with acetylene gas generator and 108 views, has been bought by the Yauco school board, and weekly classes are now being given with it in the principal's school. Later it will be used for giving public lecture courses. The same school board is planning to purchase the necessary instruments for the formation of a school band before the beginning of the next school year. That the instruments may be the property of the schools, and not of any municipal corporation, it has been deemed best to obtain by popular subscription the major part of the money for their purchase, hence the project is working out more slowly than it would were the board planning to pay the entire cost of the instruments.

Although much, very much, has been done for the material betterment of the schools, a great deal remains to be done. Almost all the rural schools are unsatisfactorily housed. In the municipality of Sabana Grande there is not a rented school building that will accommodate 50 pupils. In Yauco four of the graded schools are located in rooms where the distribution of light is bad. The school board is now studying the question of purchasing a building that is offered at a low price and remodeling it for a school building. If this is done the graded schools of Yauco will all be as well located as could be asked. I shall work with the school board of Sabana Grande during the summer and try to have it induce the owners of the rural school buildings to enlarge them or to look for other buildings. So much, then, for material conditions.

Almost universally, the work done in the schools during the year that is coming to a close has been satisfactory. The native teachers, with but two or three exceptions, have shown themselves interested in their work and anxious to improve. Twenty of them have subscribed to educational periodicals published in English, and an even larger number to the Porto Rico School Record. The night schools have been particularly fortunate in the teachers that have had charge of them. The attendance was at first in excess of the capacity in Yauco, but finally fell off as interest waned. I called the attention of the local board to the fact that something should be done, and recommended that the aid of the municipal government be invoked. The board promptly seconded my suggestion and presented a petition to the municipal council requesting it to vote an ordinance requiring that all children employed in business be required to obtain a license and that such license should not be granted unless the applicant knows how to read and write or is a regular attendant at one of the schools, day or night. This ordinance was voted by the municipal council on the 8th of May and immediately put into effect. The result has been that the attendance at both of the Yauco night schools has been brought up to a satisfactory figure. The attendance at the night school of Sabana Grande has always been good.

From all that I have been able to learn, this is the first year that the conversational method of teaching English has been employed in the schools of this district. At the beginning of the school year I found that two of the teachers of English assigned to this district were without experience and that a third had had but one year's experience, and that in the read-and-translate method. Therefore, after I had observed the work of each of the teachers and had

talked over with them the strong and the weak points in their methods, I made arrangements for each to spend a day observing the work of some other teacher, accompanied by me. During such visits we took notes, which we compared and discussed later. This exchange of visits was of great benefit in correcting weaknesses and misinterpretations where they existed and in making the instruction in English as uniform throughout the district as the individuality of the teachers would permit.

On account of the Americanizing influence that I feel it must have, I am strongly in favor of the teaching of English by the native teachers in the rural schools. If the teacher is young and progressive, he can give really profitable instruction in English per se; if he is a relic of the Spanish régime, the whole atmosphere of the school is completely Spanish and there is nothing, outside of the period spent in the English lesson, that tends to impress the child with the fact that "tempora et mores mutati sunt." That this impression might be the stronger, I issued instructions that the use of Spanish during the English class should be avoided, and that the work should be essentially objective and conversational. Furthermore, in order that the teachers might have a clearer idea of how to proceed than I could give them by talking to them or even by giving model classes in their schools, I arranged for each teacher to spend a day observing the work of the teachers of English in the graded schools. The teachers made these visits in groups of four, under my guidance. The result of this has not been perfection, nor has it been to make the English work in the rural school equal to that in the town schools, but it has introduced a new and preferable spirit into the study of English in the rural schools. English has now as much individuality as has arithmetic or geography, whereas before it was but an irrational way of saying things that could be far better expressed in Spanish.

The classes in English for the native teachers have been extremely gratifying. Out of a possible 983 absences there were but 56. Not a teacher failed to appear on the 6th of May (on which date it was impossible to hold the written examinations because the question papers did not arrive in time, due to delay in the mails) or on the 11th of May, when the written examinations were actually held, or on the 13th of May, when the oral examinations were held. The average mark obtained by the teachers in the oral examination was 42.6 per cent, on a basis of 50 per cent. These classes and the English work in the rural schools were reciprocally helpful. The teachers sought in their weekly class in English, help for their English work with their pupils; and this showed them where their weakness lay, so that the next time they went to the class in English they could overcome this weakness.

In spite of the fact that the teacher has had to divide his time among three schools in as many municipalities, the agricultural work at the Washington Rural School has been unusually successful. Weekly reports have been sent to this office by the teacher and his reports of real progress have been abundantly confirmed on the occasion of my visits to the school. Over $7 has been realized from the sale of products of the general garden. This I consider very good, when it is remembered that the grounds contain only half an acre, of which the major part is taken up with individual gardens of the pupils, the products of which they are at liberty to dispose of at will—in order to further stimulate their interest in their work—and when it is remembered that the work has been intentionally experimental and demonstrative even when good results, as far as crops were concerned, were not expected. For instance—twelve rows of sugar cane were planted, three without fertilizer and three each with different kinds of fertilizers—the failure of a part of the crop was more than compensated for by the object lesson in the values of the different fertilizers. The money obtained from the sale of products has been deposited in a bank, and will be used to add to the equipment of the school before the beginning of the next school year. The teacher has shown so much real enthusiasm and intelligence in his work that I would recommend that he be appointed next year to have charge of this school only, instead of having to scatter his energies among three schools.

In accordance with instructions issued from your office, teachers' institutes for this district were held in Yauco on March 24 and 25. In addition to four sessions essentially for teachers—although the general public was invited to attend them and did so in good numbers—a session of more popular and general interest was held on the evening of March 24 in the hall of the Masonic lodge, the members of which generously granted the use thereof gratis. At this session excellent and timely addresses were given by the assistant commissioner of edu-

cation, by Mr. Manuel Fernandez Juncos, of San Juan, and by Mr. Juan Roig, the president of the school board of Yauco. An attentive and appreciative audience filled the room and overflowed onto the balcony. As to the success of the sessions, I need only say that after they were closed many of the teachers asked me to call others before the end of the school year. This I have done twice; unfortunately, on both occasions conditions arose that made it necessary to abandon the project.

The enrollment and the average daily attendance in the schools has been decidedly satisfactory, conditions considered. During the first term some of the rural schools had unsatisfactory enrollments, but since the beginning of the second term everyone of them has had as full an enrollment as the accommodations would permit Their average daily attendance for the second term was over 90 per cent. Both the municipal judge of Yauco and the police judge of Sabana Grande have faithfully and actively enforced the provisions of the compulsory attendance section of the school law. The average enrollment in the schools of the district during the second term was 59.41, and the average daily attendance was 45.10.

So that the difficulties in obtaining and maintaining a full enrollment and a good average daily attendance in each of the schools that have been encountered this year may be more successfully met next year, I prepared the necessary blanks last fall and sent them out with a circular letter requesting each teacher to make a census of the children of school age living within the jurisdiction of their respective schools. This work was, with few exceptions, carefully and thoroughly done. A résumé of the results is given below. As the name, color, sex, age, and parent's name of each child is given in the forms that have been filled out by the teachers, I shall be able at the beginning of the next school year to give each teacher a copy of the census pertaining to his community and to demand that he have a full enrollment at the start.

Résumé of census of children of school age resident in the tenth school district of Porto Rico, as prepared by the teachers thereof, during the school year 1904–5.

Municipality.	Pupils enrolled.		Children unenrolled.		Total school population.
	Urban.	Rural.	Urban.	Rural.	
Yauco	801	507	1,055	[a] 1,660	[a] 4,023
Sabana Grande	362	469	314	1,011	2,156
Total	1,163	976	1,369	2,671	6,179

[a] Seven rural barrios missing.

On account of the time that is taken for preparation from the regular school work, I am not in favor of frequent or elaborate exercises on special occasions. Moreover, I believe that the lesson of any anniversary may be more deeply and permanently impressed by weaving it into the regular work of the school at the appropriate time than by having the children for weeks beforehand thinking constantly of how, not what, they are going to speak and how they are going to dress. Many of the children are so poor, too, that through shame they stay from the exercises, and an undesirable caste spirit is engendered. For these reasons the only special exercises that have been held by the schools of this district during the present school year were those of Arbor Day and Thanksgiving Day, which were combined on November 24, 1904.

On this occasion all the schools of the town of Yauco met together, marched, accompanied by the municipal band, up the road to the municipal hospital and planted 12 royal palms along the way. Thence they returned to the Columbus Graded School, where an appropriate programme of recitations and songs was carried out by the pupils. In Sabana Grande the town schools also met together and had their procession and exercises. Each of the rural schools also held exercises, including the planting of trees, but on the previous day. For the other anniversaries—Washington's Birthday and that of the abolition of slavery in Porto Rico—I issued instructions to the teachers in accordance with the spirit of my views as expressed above—that on the day prior to the holiday matter relating to the anniversary be introduced into all the classes.

On the 12th of March, at the call of the school board of Yauco, a public meeting was held in the town hall to discuss the project of establishing a public library in town. At this meeting a committee, of which I was elected the president, was chosen to proceed to found the library. This committee met with the most encouraging reception when it set out to collect books and funds for the establishment of the library, and within a month had collected over 600 books, 3 large bookcases, and $50 in cash. On April 15 the library was formally opened in an excellent stone building facing the principal plaza. For the maintenance of the library the citizens, especially the parents of the school children, were asked to contribute with a monthly quota. Over 400 responded to the call.

In addition, each teacher agreed to contribute a percentage of his salary. The school board voted a subvention of $10 a month for the rest of the present fiscal year and will increase this to $15 in its budget for the coming year. At a session held on May 22 the municipal council generously voted a subvention of $35 a month in its budget for the coming year. But not only is the library materially prosperous; it has proved its raison d'être. The attendance was so heavy the first few nights that the committee found it necessary to establish a rule excluding from its privileges children less than 15 years of age, except on Saturday afternoons. In spite of this rule every seat is taken almost every night. Nothing in my experience since I took charge of this district has given me more gratification than the way in which the people of Yauco have demonstrated their appreciation of the establishment of the public library.

During the entire year I have had the valuable aid of the interested and intelligent cooperation of the school boards of the district. If that of Sabana Grande appears by this report to have done less than that of Yauco, the difference has been due rather to the lack of funds than to a lack of interest. In addition to the improvements that the Yauco board has made in its schools, it has spent more than $150 in the equipment of my office.

Before closing, I beg to make the following recommendations:

That at the end of each school year the department of education assign some book or books for summer study by the teachers. This practice is quite general in the States, and there exists, if anything, more reason for its adoption here than there does there. In the States the school systems have been long established on the same principles, so that if the majority of the teachers are not graduates of normal schools they have, at least, obtained their licenses through examinations that have been for years uniform. In Porto Rico, on the contrary, some of the teachers obtained their licenses in exchange for those that they held under the Spanish régime; others through examinations that but slightly resemble those now held, and a very small number are graduates of the normal school.

Some system for the transfer of pupils from one school to another should be devised. Within the respective districts this could be easily attended to by the superintendents; but there is a considerable movement of families from one town to another in the island that results in the permanent withdrawal of many children from the schools, and in difficulties and confusion in assigning to their proper grades pupils that do seek admission after having attended school in another part.

Again, in my opinion, an effort should be made to assign the schools to municipalities in which the conditions are most favorable to their having the best possible material conditions and attendance. There are municipalities on the island that, with a school budget of but $7,000, have to provide for the material needs of over 50 schools. As a result, many of the schools are very insufficiently equipped—I have seen some that did not have a piece of furniture—and more than one is allowed to each barrio. On the other hand, Yauco, with a surplus of over $7,000 in the treasury of the school board, has 9 rural barrios, out of a total of 20, without schools.

Moreover, I believe it would have a stimulating effect on the local educational authorities if it were the announced policy of the department of education to transfer to more promising places schools whose equipment or attenddance might be unsatisfactory. Practicing the strictest economy, the department of education has funds sufficient to pay the salaries of teachers for barely one-sixth of the children of school age on the island. Although I am quite in sympathy with the view that no extensive tract should be left without school advantages, even though a low enrollment and less than good equipment have to be put up with, yet I do feel that after this view has received due attention a sufficient material equipment and a high daily attendance should be regarded as indispensable requisites for the maintenance of a school in a community.

In conclusion, I wish to express my gratitude for the constant and unfailing help and advice that have been accorded me in my work by you and by your corps of assistants.

Respectfully submitted.

ROGER L. CONANT,
Superintendent of Schools.

The COMMISSIONER OF EDUCATION.

SCHOOL DISTRICT NO. 11.

DEPARTMENT OF EDUCATION OF PORTO RICO,
OFFICE OF DISTRICT SUPERINTENDENT,
San German, P. R., June 1, 1905.

SIR: I respectfully submit to you my second annual report for the schools of the district of San German for the year 1904–5.

The school district of San German is now composed of the three municipalities of San German, Cabo Rojo, and Lajas.

At the beginning of the present scholastic year, the municipality of Maricao was wisely separated from San German and annexed to the district of Mayaguez. It was thought it would be easier to have Maricao attended by the superintendent of Mayaguez on account of better roads and better means of communication.

The municipality of Lajas, which for a time belonged to the school district of Yauco, has now become again a part of the San German district. There is only a very short distance between the city of San German and Lajas proper.

Lajas is a small town with a good substantial 3-room schoolhouse just completed and delivered to the local school authorities of the town for occupancy at the beginning of this calendar year.

The class rooms are large, airy, and all furnished with new modern writing desks. A stone wall has been built around the property; flower beds have been artistically laid down by the school children, and an iron fence will be erected at an early date by the department of education.

One hundred and fifty children can easily be accommodated in the building, under the direction of three graded teachers.

Education is well advanced there, and in the last examination held for rural teachers' certificates, one boy, who is a student of the Lajas school, received his license to teach.

The night school is always well attended by young working people from the neighboring sugar-cane plantations, and certainly gives great credit to the teacher in charge. The attendance is in proportion just as good as in any larger town.

Another teacher of Lajas has now undertaken, with the assistance of the local board, to form a brass band, and no doubt they will have it well organized by the beginning of the next school year.

Baseball is quite a favorite game among the boys of that town.

The people of Lajas are generous and kind and ever willing to help in matters of public education. Unfortunately, the local board of that municipality, like many others on the island, has not been able, for lack of funds in the past, to carry out all their plans, and for that reason also the rural schools, which are only nine in number, are not such as the school board wishes they should be.

There is, however, one good rural school in the barrio of Palmarjero. The building was put up only a few years ago by the department of education as a school of agriculture. The local board has always taken good care of the building and of the adjacent property, and last September had a new coat of paint inside and outside the building. The grounds around the school are fine, and well cultivated by the children themselves, under the guidance of the teacher of agriculture, and the place is such that it really deserves a special mention for its beauty.

There is another school of agriculture in this district, which is situated in the important barrio of Pedernales, in the municipality of Cabo Rojo.

I am very sorry to say that former local boards of Cabo Rojo have never taken much interest in that school. The building is not in good condition. A few repairs and a good coat of paint would make a surprising change in the general aspect of the whole building.

Owing to the untiring efforts of the teacher of agriculture, who visits the school regularly and spends two days there every week (the same as in Lajas), the grounds are kept in good shape and are producing an abundant crop of the best kind of cotton and coffee.

Not very far from the Palmarejo School of Agriculture, which is exclusively attended by boys and under the direction of an intelligent rural teacher, is another school located in a good rented building. This school is only attended by little girls from the age of 5 to 13, under the supervision of a female teacher, and it gives general satisfaction to the people living in that vicinity.

It is to be hoped that the Lajas board of education will be able in the near future to carry out their idea of having in each barrio schoolhouses erected for rural school purposes out of the funds of the local board itself.

It is very gratifying to say that during the present school year the enrollment and attendance of pupils in the schools throughout the entire district have considerably increased. This is due mostly to the exertions and combined efforts of the majority of the teachers (especially rural teachers) and to their constant zeal for the betterment of our schools.

In one of the rural schools the teacher, a woman, had to face many difficulties in regard to the daily attendance of her school children. Out of nearly 50 she had enrolled not over 18 or 20 were attending regularly. The ever-ready excuse given by parents was that the children had no shoes, no clothes; that the father or the great grandfather or some distant relative was sick, and so on. A wealthy man of the barrio, the owner of the schoolhouse, had 6 children who were attending school very irregularly, just the same as the others. The teacher did all she could to improve the attendance, and finally sent a list of names to the municipal judge, including the wealthy man's name. The majority of the guilty parents who were summoned to court surrendered at once, as can be imagined; but it was not so with the well-to-do man, who said that the teacher was no good and should be removed at once from her school. He looked for the support of the leaders of his political party, tried a petition against the teacher, which everybody refused to sign, and at last threatened not to rent his house to the board any longer. All in vain! The teacher remained quiet and firm in the presence of the storm, the local board stood by her, and now she has perhaps the best attendance in the municipality. Of course the rich man, through pride, has never sent his children back to school, waiting for the removal of the teacher, but now everybody is anxious to know what he is going to do next year, as the teacher, in all probability, will not be removed from that school.

The number of children increased so much all over the district, and especially in the towns, that it was deemed necessary to open half-day session classes in the first grades to give a chance to all to attend school and have their share of instruction. The idea met with the approval of everybody, and during the second part of the month of October last two half-day session schools were open in the city of San German, with an enrollment of 50 children each; 3 in the town of Cabo Rojo, where the people grew frantic about it, with 50 children enrolled in each school. Another one was also opened in Lajas with the same good results, as soon as the new school building was ready for use last January.

Of course it is not exactly the kind of schools we wish to have permanently, but at least in that way we have been able to bring together children who now are not seen so much running wild on the streets and doing all sorts of mischievous deeds. We sincerely hope that the day will come before long when we can make better provisions for our schools. With only a few more graded schools in addition to those we already have, we could do away with the present half-day sessions which give only a very limited satisfaction and our most pressing wants would be amply supplied.

As far as the graded schools are concerned, in every part of the district we are well pleased with them and also with the teachers. The progress is good, the daily attendance much higher than last year, the discipline continually improves, and the prospect is very encouraging for the future. The interest of the children in their work seems much better than it ever was before; excellent progress in English has been made both by pupils and teachers, especially in the conversational line, and no doubt that next year the English language will attain a standard mark in our schools. In fact, our graded schools need very little at present, thanks to the zeal and ability of many of our teachers.

What this district needs most, is an increase of schools in the rural parts. It is really a pitiful sight, which many times almost brings tears to the

eyes, to see out in the country so many children of both sexes, with ragged clothes on, who are left entirely to themselves and grow up in complete ignorance of the most elementary duties of life. They have a natural brightness, which would easily develop, if cultivated by education.

Many applications are received from parents seeking the erection of new rural schools in their barrios, and it is with real sadness and quite unwillingly that we tell the people to wait until the means are found to satisfy their wishes.

Since the number of rural schools can not be increased, it should be, and it is, the duty of the local boards to improve the condition of those already established. Members of local boards really know nothing about the needs of the rural schools, and consequently do very little for them. Those schools should be provided with better furniture, and more money should be spent on them.

Great care should be taken also in the selection of teachers. They should be, of course, men and women who really know their duties as teachers and mean to work through conscience more than for money. They should belong to no political party at all.

Unfortunately it happens sometimes in some parts of this district that the good of the school children is mercilessly sacrificed to the interest of the political party to which the local board and the teacher belong, no matter how incompetent the latter may be.

How much better it would be if all the teachers were treated without any regard to their political affiliations, and appointed by the boards only in view of the good they can bring to a community by the education of its children.

Washington's Birthday, and Arbor Day, in the San German district, are favorite holidays. The latter especially arouses great enthusiasm. During the present year both festivities were appropriately celebrated in the city of San German. Patriotic compositions, recitations, and songs were rendered.

In Lajas there was great enthusiasm also. Though small, the town is always awake to all educational interests.

All over the district the rural schools have their own celebrations, not so elaborate, but just as patriotic as the others. Parents seem to enjoy those festivities, and where there is an enterprising young teacher in the country you are sure to find a good crowd of visitors to the school on such days.

Cabo Rojo is never lacking in school celebrations or any educational advancement.

A gold medal is to be awarded to the best pupil in English.

At the end of the school year the presentation will be made to the fortunate one with appropriate ceremonies, and the name of the prize winner will be forwarded to the department of education.

The donor of the medal is the son of Mr. J. M. C. Curry, after whom the school is named.

This year there was quite a deviation from the manner of conducting the teachers' institute last year. This was noticeable especially in one respect. All the teachers were made to take an individual part in each subject discussed.

Refusals were not permitted. Teachers who had never spoken in public before stood bravely before the audience. We were fortunate in having an excellent "conductor" and interesting speakers both daytime and evening. Some of these were the assistant commissioner, Mr. E. W. Lord, Mr. Fernandez Juncos (so well known and liked all over the island), and Mr. Enrique Hernandez, the able conductor of the institute.

During the first evening session at the theater the music of the band and national songs by the children were pleasing features, and many people in the crowded audience expressed a wish for similar interesting public evenings in the future. In fact, everybody was well pleased.

Respectfully,

A. FOURCAUT,
Superintendent of Schools.

THE COMMISSIONER OF EDUCATION,
San Juan, P. R.

School District No. 12.

Department of Education of Porto Rico,
Office of District Superintendent,
Mayaguez, P. R., May 31, 1905.

Sir: Following instructions received, I have the honor to transmit herewith my annual report for the current year.

This year brought a change in the size of the district by the addition thereto of the municipality of Maricao and the withdrawal of that of Las Marias, thus making a slight decrease in the number of schools, but an increase in the territorial area of the district. As constituted at present, the district comprises the municipalities of Mayaguez, Anasco, Maricao, Rincon, and Hormagueros, with a total number of 83 teachers distributed among the various classes of schools.

In spite of my continued efforts to better our actual school accommodation in the city schools of Mayaguez and Anasco, the financial standing of these school boards would not permit of any improvement being made. I am sorry to have to confess that many of our school children are still housed in buildings entirely unfit for the purpose, occasioning thereby serious inconveniences both for pupils and teachers, and making the attainment of satisfactory results impossible. Next year our long suffering and patience will be rewarded to some extent, as the department of education has come to our rescue and obtained the use of the magnificent buildings of the United States barracks for school purposes, and when the sound of merry children's voices is heard reverberating in that edifice we shall be able to boast of possessing the most beautiful school building on the island. With this important acquisition Mayaguez—and the school board especially—will realize what good schools mean, and will be able to reduce the enormous deficit at present existing. The city council of Mayaguez has, either through inability or apathy, always found some excuse for not imposing the regulation school tax, or for paying a proportionate share toward the erection of a modern schoolhouse. The building erected last year at Anasco by the department of education only accommodates half the number of pupils attending school, and the school board is actively engaged in taking measures to obtain an additional building. The town of Maricao is anxiously awaiting the construction of its promised building, and little Rincon intends to erect a two-roomed schoolhouse early next year.

The school year opened with a poor rural attendance, and it was deemed necessary to close and transfer to more suitable sites no less than 7 schools for lack of proper attendance. In the case of each transfer satisfactory results have been obtained, although the school buildings can not compare with those previously occupied. The migration of the rural population appears to be the primary reason for these transfers. Two rural teachers resigned at the end of the first term, and the school board, owing to difficulties with the owners of their respective school houses, was unable to reopen these schools until the third term.

In the municipality of Maricao, although two additional rural schools were conceded by the department, only one of these was opened, the reason alleged by the school board being that the location of the other was such that no teacher was willing to accept the position, and that the mayor, who was the owner of the house in question, obstinately refused to have any transfer made.

The attendance and enrollment are considerably higher throughout the district than in previous years. In the graded schools a slight decrease in attendance is noticeable in the second term, consequent upon the numerous holidays that occur then. The rain and the gathering of the coffee crop are always detrimental to the attendance in our rural schools.

In all the graded schools of the district the native teachers have performed a part of their daily work in the English language. The work of the regular English teachers, which before consisted chiefly in the reading and translation of English readers, has been advantageously changed to the rendering of daily lessons based on the subject-matter required in the course of study. Conversation, correct pronunciation, and dictation have been emphasized, resulting in the acquisition by the pupils of an extensive, practical vocabulary of useful English words and phrases. Translation from English into Spanish has been almost entirely abandoned, and the teaching of grammatical rules introduced incidentally as the necessity arose. As a result of the misguided labors of former years we found that our pupils, although possessing remarkable facilities for translation from English into Spanish, failed hopelessly when required to

answer the simplest every-day question in the English language. Great progress and excellent results have been achieved this year in the learning and teaching of the English language, and the change of method has proved most agreeable to the teachers. We have found the book entitled "English for Non-English Speaking People" (Heath & Co.) of the greatest utility.

The weekly classes in English for the native teachers have been fairly well attended and have proved beneficial. The work required of the advanced group called for constant and intelligent study, owing to the novelty of the subject-matter and to the rather difficult wording of the text. Both the written and oral examinations show commendable progress made by the majority of teachers. The inducement offered by the department of education of increased salary to those teachers who are able to perform all their work in English will stimulate many to increased efforts toward becoming proficient in our difficult language. Another valuable aid will be the proposed summer vacation English classes for which some 40 teachers have already matriculated.

The district corps of teachers has, generally speaking, advanced steadily in every respect, and no serious trouble or unpleasant incidents have marred our year's work. There might be improvements made in the daily preparation of work and in the pursuit of self-culture; also in the care of school property and the environments of the school buildings. A few months ago, a spirit of discontent with their lot was observable in a few of the teachers, this being due primarily, I believe, to the political change effected at the last general election and to the mistaken belief that a panacea for all their woes had arrived. It has been necessary to discontinue the services of two teachers, whose inability to comply with their multifarious duties, and their total ignorance of the English language, rendered efficient work impossible. In previous years their services were highly appreciated, and I regret that, owing to circumstances over which they have no control, they are doomed to suffer privation. Surely something ought to be done toward providing pensions for these unfortunate public servants.

The work of our industrial school has progressed as satisfactorily as could be expected, in view of the fact that an entirely new staff of teachers are in charge, and that some of the most attractive branches of the industry have been discontinued. The enrollment and attendance have declined, but the majority of the absentees are now busily engaged in earning a living in trades, the preliminaries of which were acquired in this school. It is a strange but true fact, that, in spite of repeated invitations, the public have systematically ignored its existence. It is my belief that, if the industrial schools of this island must fulfill their mission, the character of the work performed there must change. Some inducements might be offered to the pupils; such as allowing them occasionally to retain articles they have made, and to construct and sell only such things as are of interest and utility to the general public. As the educational feature of industrial work is not yet appreciated by the people, some plan might be adopted which, while not entirely discarding this feature, nor yet inclining too visibly toward trade schools, might serve, provisionally, until universal interest and confidence had been established; then, gradual steps might be taken to put these schools on a definitely approved and firm basis.

Of the 35 pupils that constituted the high school at the beginning of the year, several have been reluctantly compelled to withdraw; some to teach in our public schools, others to engage in domestic occupations. Although their places will be filled at the next examination for common school diplomas, I fear that we shall never have a flourishing high school so long as the pupils are allowed to become teachers before completing the course. A modified course of study seems desirable for this school. If the pupils on entering could take the option of a commercial, industrial, or professional course, I believe many more would be induced to enter and remain there. With a six years' common school course, a youth of 16 or 17 would then be able to earn a living in Porto Rico, where the necessary qualifications are, relatively speaking, very low.

The visit of Miss Susan Huntington, as directress of our local teachers' institute, was a pleasant feature of the year's work. The teachers took an active and intelligent part in the discussions, and benefited considerably by the interchange of ideas. The model classes presented were particularly interesting, emphasizing approved methods and exposing fallacious ones. The public meeting held in the theater in connection with the institute was graced by the presence of Messrs. E. W. Lord, Fernandez Juncos, and Mariano Riera Palmer, all of whom delivered spirited and appropriate addresses. Owing to the rain, and the simultaneous celebration of a counter attraction, the attendance was deplorably poor.

The annual conference of superintendents held at Ponce in January gave us an opportunity of officially welcoming our new commissioner, Dr. Roland P. Falkner, and of discussing the various phases of school work. The papers presented were of a very practical and efficient character, dealing in a masterly manner with present difficulties and future problems.

One of the most important reforms suggested by the Department is that of the withdrawal of some of the old text-books, and their substitution in our schools of more suitable ones. This will supply a long-felt need, and greatly simplify the work of pupils and teachers. The school holidays have been observed throughout the district with enthusiasm, and having now become a part and parcel of the pupil's life, their celebration and significance will, I trust, do more to Americanize the island than we few isolated Americans can hope to accomplish.

On May 6 a novel and interesting entertainment was given by the children in the theater of this city, to provide funds for our public school library. As a result we have $80 with which to purchase books to add to our 350 volumes previously donated, and I avail myself of this opportunity of soliciting gifts of books or money for this laudable purpose.

In the various examinations for certificates or diplomas, the district has been well represented, and although a large number of the candidates show a lack of preparation, yet it is satisfactory to observe the commendable zeal displayed by the rising generation to become school teachers.

A word of praise is certainly due to our local school boards, who have faithfully discharged their complicated duties, and cheerfully cooperated with me for the betterment of the schools.

Respectfully submitted.

JOHN MELLOWES,
Superintendent Twelfth District.

THE COMMISSIONER OF EDUCATION,
San Juan, P. R.

SCHOOL DISTRICT NO. 13.

DEPARTMENT OF EDUCATION OF PORTO RICO,
OFFICE OF DISTRICT SUPERINTENDENT,
Aguadilla, June 5, 1905.

SIR: The following is the annual report for the school district of Aguadilla, and which is also district No. 13:

Last year this district included San Sebastian, but at the beginning of the present school year San Sebastian became the headquarters of the new district of same name, and Isabela was attached to the district of Aguadilla in its stead. The school district of Aguadilla is composed, therefore, of the municipalities of Aguadilla, Aguada, and Isabela, but next year it will contain four municipalities instead of three, as Moca has been separated from Aguadilla and will form a separate body corporate. The separation of Moca from Aguadilla has its disadvantages, but it also has something in its favor. I am afraid that the smallness of the budget of Moca will not allow us to make any great improvement in the schools next year, as out of it will come the salaries of the local officials, the expenses attached to the administration, etc. On the other hand, the home officials will probably take a more decided interest in the Moca schools than do the officials of Aguadilla, who are naturally more interested in the welfare of the schools within the municipality of Aguadilla proper.

I was at first somewhat disappointed, on account of the very friendly relations existing between its officials and myself, that I had lost San Sebastian, but I must say that I have gained a great deal in having Isabela form a part of my district. Isabela formerly belonged to the Camuy district, of which Mr. Hutchinson was superintendent, and I want to give him credit here for the good shape in which the schools were turned over to me. I found that almost all the teachers were young and progressive, and that the people are, comparatively speaking, enthusiastic over their schools.

In Isabela I found that the building in the town used as a graded school was highly unsatisfactory, but after many delays we have finally been successful in having the department build a four-room frame building, which is at present under construction, and which will undoubtedly be ready by the opening of the new school year. This building is to cost $4,000; one-half of the sum is to be paid by the municipality and the other half by the department. One very useful

feature about the new building is that two of the rooms will be made to communicate by means of folding doors, thus making a large assembly room, which is very necessary on school holidays, when it is very desirable that as many people as possible witness the exercises.

In Aguada the graded school building shows little improvement over its condition last year, although some minor repairs have been made. Most of the rural school buildings of this municipality are in bad shape, but the school board is at present negotiating with the insular treasurer for a loan of $1,000 with which to erect three rural school buildings, at an approximate cost of $300 each. This will be the first large sum of money that Aguada will have spent on its schools, as until the present year the school board has always been in debt.

In Aguadilla all the school buildings are in fairly good condition, with the exception of the Baldorioty School on the plaza. We are trying, with some prospect of success, to get the use of the infantry barracks, near the Lafayette School, in which to install the schools at present in the Baldorioty building. The commissioner has offered to put the barracks in proper condition for school purposes, and if we are successful in getting all this Aguadilla will not envy any town on the island its school buildings.

The school board of Aguadilla will find itself in debt at the close of the fiscal year, although I think that the amount will be small; Isabela will probably be able to close without a deficit; and Aguada, for the first time in its history, should find itself with a surplus. It was very unfortunate that just at a time when the school boards of the district were beginning to get their heads above water that the legislature should cut down their allowance, and this in the case of the three, and next year four, school boards of the district will delay certain very necessary improvements in the schools, such as providing them with better furniture, etc. Fortunately, the school board of Aguadilla spent something over $300 last year in the purchase of new furniture for the schools; the Aguada board very nearly $150 for the same purpose; and the fact that the new graded school in Isabela will be provided with new modern desks will enable us to fit out pretty thoroughly all the rural schools in the municipality with the furniture at present in the old building.

The desks which the school boards of Aguadilla and Aguada bought are formed on the same lines as the modern desk usually provided by the department, having a bookshelf, etc., and are capable each of seating 5 pupils comfortably. Each rural school in these two municipalities, including Moca, were given four or five of these desks, a new blackboard 10 feet long, and in some instances a bookcase containing 16 cubic feet of space, so that with the furniture which they already had they leave little to be desired. However, it is not my intention to relax my efforts in this direction until every rural school in the district is provided with ten of the desks mentioned, making the comfortable seating capacity fifty for each school.

Probably in no subject has greater progress been made during the present year than in the teaching of English. By obliging the teachers of English to use no Spanish as a means of interpretation in the teaching of English, the department seems to have solved at last the method of teaching this very difficult subject in our schools. From no one who is a competent authority on the subject of teaching children a foreign language have I heard any adverse criticism of the method employed; on the contrary, I have heard the method very favorably commented upon on several occasions, especially by the teachers themselves.

However, the number of American teachers in each school is so limited that the progress of the pupils in English is very slow as compared with their progress in the other branches; but as it seems impossible, and for some reasons inadvisable to increase the number the department should steadfastly maintain the position which it has taken to encourage the native teachers, many of them capable of doing so, to teach all the subjects in the course of study in English. This system has already passed successfully the experimental stage. It is very unfortunate that at a time when the department is bending every effort toward making Porto Rico a bilingual country, and by this means establish a better understanding between Porto Ricans and Americans, that a foreign press should endeavor to make our work unfruitful by alarming the people with biased appeals to their sentiment. This, to my mind, is not because the Spaniard does not recognize the superiority of our schools to his own, but because he recognizes it only too well, and from a spirit of envy, nothing more, is taking a systematic stand against everything American, and this language question is what most hurts him. However, history has too many examples of the

fate of those who oppose progress, and the Porto Rican child will learn English in the public schools in spite of all that may be done to prevent it. The child is very eager to learn English, the parents are desirous that he should do so, and the progressive Porto Rican teacher is losing no time in acquiring it, and time will do the rest.

While I am on the subject of English, I want to say that, in my humble opinion, the attendance of the Porto Rican teachers at the classes given for them should not be made obligatory, because there are too many old teachers who can not learn English, and the system works an unnecessary hardship upon them, but instead every inducement should be offered to those teachers who learn it voluntarily and the problem will solve itself.

During the present year practically all the teachers and pupils in the district were vaccinated, but I regret to report that I have heard of very few cases in which the vaccination has been successful. I do not know to what cause this is due, probably to bad virus, but certainly the farce should not be repeated next year, as our time is too valuable and the health of the children too sacred to expose them unnecessarily to the consequences of a bad operation, not to say anything about the money spent uselessly.

Something should be done to provide more rural teachers for the island. We have had three rural schools in this district vacant during the year, two of them practically all the year, and we could find no teachers to fill them, although we were disposed to accept almost any kind of a teacher—good, bad, or indifferent.

I see no immediate need for a greater variety of books than we have at present, it being preferable, as I said in my report last year, that the teachers should learn the use intelligently the books which we already have. I do recommend the getting of a hygiene in Spanish, for reasons which are too obvious to mention. Covers should be provided by the Department for all books as a means to their preservation. All copy books should be in Spanish, and my reasons for recommending this is that children and teachers have great difficulty in learning to form certain letters, as they think that there should necessarily be a difference between the Spanish and English forms. As instances, the old Spanish "I" is made like our "J" and the "T" resembles our "F." If a Spanish teacher or child sees the word John in writing, as he generally knows very little English, he does not know that the "J" is a "J," but assumes that it is an "I," while if the word Juan were written instead of John he would know immediately that Juan begins with a "J," and would soon learn to give the letter "J" its proper form. The same is true of the "T" and "F" and several other letters. There is no sound reason why there should be a difference of form in the writing of the two languages.

This year we held our annual teachers' conferences on the 28th and 29th of March under the direction of Mr. L. R. Sawyer, chief of the division of supervision and statistics. At the four meetings of the session, intended primarily for teachers, there was an average attendance at each meeting of 92 per cent of all the teachers of the district. The public meeting held on the evening of the 28th, in the casino, was very well attended by both teachers and public. At the last-mentioned meeting addresses were made by the president of the school board of Aguadilla, by Mr. E. W. Lord, assistant commissioner of education, by Mr. Manuel Fernández Juncos, and the meeting was closed by the alcalde of Aguadilla, Mr. Luis Torregrosa. The conference was voted a success by the teachers and public.

The department has in mind the establishing during the summer of a class in English for Porto Rican teachers in those towns where twenty or more teachers are willing to attend. The idea is a good one, and, if carried into effect, will no doubt be of great benefit to the native teachers in their English work; but why can not the Department go a step farther and establish a regular summer school in each district headquarters? I am sure that if a summer school were established in Aguadilla with, we will say, one American and two Porto Rican teachers that at least half of the teachers of the district would willingly attend its sessions for five or six weeks. If such a school is established at Rio Piedras only a limited number of teachers would be able to attend because of the additional expense attendant upon living away from home. These summer schools should be established as near as possible to the homes of the teachers, at least until such time as the attendance at them should be taken as an understood necessity by the teachers themselves.

It is to be deplored that the trip which the Porto Rican teachers made to the States last summer could not be repeated this year. A better means of establishing a better understanding between the people of this island and the

mainland can not be conceived and it is to be hoped that a similar expedition may be arranged for next year. Almost all those teachers who made the trip last summer, some at a great personal sacrifice, are enthusiastic over their experience and do not begrudge the money spent and would no doubt willingly form part of another expedition, and to these could reasonably be added many more who remained at home on account of timidity.

I am happy to say in closing that the three school boards of the district have worked in perfect harmony with me and have given me their hearty cooperation in so far as it lay in their power. I also want to thank you and the several officers of the Department for the help given and the many little courtesies shown me during the year.

Respectfully submitted.

DANIEL F. KELLEY.
District Superintendent.

THE COMMISSIONER OF EDUCATION,
San Juan, P. R.

SCHOOL DISTRICT NO. 14.

DEPARTMENT OF EDUCATION OF PORTO RICO,
OFFICE OF DISTRICT SUPERINTENDENT,
San Sebastian, May 31, 1905.

SIR: I have the honor to forward the first annual report for the district of San Sebastian. The district, comprising the municipalities of San Sebastian, Lares, and Las Marias, was set apart as a new district in 1904. The first mentioned town was formerly a part of the district of Aguadilla; the second, of Arecibo, and the third, of Mayaguez.

Upon reaching the district I was highly pleased to find the school boards composed of men thoroughly interested in the progress of public instruction and willing to help in any way to assure the forward march of the schools.

My first task was to find and furnish a suitable office for the transacting of official business and I appealed to the various school boards for aid. Each one responded most heartily and soon the office was supplied with an adequate office equipment.

There are 46 schools, of which 2 are principal, 13 graded, 2 night, and 29 rural. Besides these there are 3 special teachers of English. One rural school in Las Marias has not been opened during the year, the board not having been able to secure a teacher.

My first impression of the district was not very encouraging, due to the condition of many of the rural school buildings and the lack of necessary furniture. In many there was a scarcity of benches, in others clocks, bells, drinking apparatus, etc. Some of the buildings had no latrines connected with them at all. The school boards have been willing at all times to follow any indications made to them, but, on account of the lack of funds, I am not able to report as much progress as I should like. One of the graded school buildings in Lares was utterly unfit for school purposes, and the board succeeded in hiring a very large building, which fulfills all the requirements of a good school edifice. Some of the rural schools have been changed from one barrio to another where better accommodations could be secured. Practically all the school buildings in the district have been painted or whitened inside and out during the year and many of the teachers have shown great interest in making the school as attractive as possible by laying out gardens and inclosing them with rustic fences and by beautifying the schoolroom with pictures, plants, wreaths, and mottoes.

The Whittier Graded School of San Sebastian has been repaired and painted and the grounds surrounding the building have been graded and inclosed by an iron fence, which greatly adds to the appearance. The teachers and children have laid out two very artistic gardens in front of the building. The school boards of San Sebastian and Lares have placed orders for new benches, which will be ready for the opening of school in September, and are making arrangements to fit out all the schools with everything that is needed before they are opened for the coming year.

Due to the stringent circumstances of the Las Marias board, the $10,000 appropriation for a new graded school building approved by the department has been substituted by an appropriation of $5,000 for one of wood. The site for the edifice has been selected and we are in hopes to have the structure finished

some time during the summer. This will make a great improvement in the condition of the schools in that town, as the building used at present for the graded schools is situated on the outskirts of the town and during the rainy season the road leading to the building is almost impassible, due to water and mud. The school board has not been able to do anything this year, as they have not received any funds for current expenses since the 1st of last July. The board is anxious to improve the conditions, and as soon as they have funds at their disposal I expect to be able to report noted progress. The schools of Las Marias were without supplies during almost the whole of the first term, as no one could be found who would bring them from Mayaguez unless cash were paid.

At the present time the school board of Las Marias has a debt of about $3,000, which has been growing constantly larger during the past few years. With the assistance of the board I have been able to reduce the current expenses some $900 per year, and within two years am in hopes to have the debt entirely paid. Through the kindness and interest of the owners of rural school buildings we were able to reduce the rent from $8 per month to $3 per month in some cases and in others to $4 and $5 per month. Some of the employees of the board with exorbitant salaries in proportion to the amount of work to be done were dispensed with and the salary of others reduced. It has been impossible to compel the owners to repair the buildings, as some of them have not received anything in payment for rent for three years.

Being a new district, there was a very scanty supply of books on hand to open the schools, and upon communication with the three superintendents of the districts from which this was formed I was told that no new books had been ordered for these towns. Owing to the hearty cooperation of the department, I was shortly furnished with enough books to relieve the situation somewhat.

The native teachers are mostly young men, there being only 10 women teachers. Upon the whole, the teachers have been earnest and conscientious in their work, always pleased to receive suggestions for improvements in methods or conditions of schools and cheerful in the fulfillment of their duties. They have voluntarily come to the office Saturday afternoons and discussed problems peculiar to their schools, thus manifesting the confidence so esesntial to unhindered progress.

In regard to advancement in English, I can not give as favorable a report as I would like. Being in the center of the island, the teachers and pupils very seldom come in contact with people who speak English and so have very little opportunity of hearing the language spoken. Generally speaking, the English teachers have worked faithfully with the classes. In some of the schools the pupils have made rapid progress in this branch, and even some rural teachers are able to maintain quite lengthy conversations with their pupils. By the end of next year I am in hopes to place some of the grades upon an English basis.

During the year various meetings have been held with the teachers in their respective towns and some in the country, thus obtaining the cooperation of many parents who live far away from the educational centers. On the 27th and 28th of March the annual conference was held under the able direction of Mr. E. C. Hernandez. This resulted in enormous advantages both practically and theoretically, and the results will continue to be manifest for some time to come. The public conference was held on the evening of the 27th, and an audience of over 200 parents and teachers listened to the inspiring words of the assistant commissioner, Mr. E. W. Lord, and Mr. Fernandez Juncos. The president of the school board and the mayor of the town also gave very interesting and instructive papers, and a chorus of school children rendered several songs, accompanied by the municipal band.

Although the average enrollment for the district is not quite equal to that of last year, I can report a marked increase in the average attendance, due to the assistance of school boards and mayors. The teachers have worked hard to overcome difficulties peculiar to coffee-growing districts, and I can heartily congratulate them for the success obtained. Smallpox and chicken pox have been very prevalent at times, especially in Las Marias, where the attendance in the graded schools fell as low as 12 for over two weeks. It has also been difficult to obtain good attendance on church festival days.

The conditions of the graded school buildings have been greatly improved through more efficient janitor service. In some instances the salary of the janitor has been raised and in others an assistant provided. Thus I have been enabled to demand more faithful work from them, and they have taken more interest in the hygienic conditions of buildings and playgrounds.

Various holidays during the year have been celebrated with marked interest by all parties concerned. The observance of Arbor Day and Thanksgiving Day in San Sebastian and Lares deserves special mention. After the exercises in the various rooms, the pupils united for the public celebration, and after recitations and songs by the children and speeches by members of the school boards and teachers they all marched through the streets to the music of the municipal bands. Shrubs and trees were planted, and then each child was given a flower pot, made from the trunk of the palm tree, and several seeds. These seeds were planted by the children, and next year the flowers that result will be used to adorn their schoolrooms. After the exercises were over in Lares, 400 loaves of bread, 143 pounds of rice, 140 pounds of beans, and some $8 in 5-cent pieces were distributed among the poor people of the town by the young ladies of Principal Aponte's school.

The observance of Washington's birthday in Lares is worthy of separate mention. A very large building was obtained for the celebration and tastefully decorated by the teachers and pupils with flags, palm leaves, flowers, and bunting. The pupils marched from the principal's school to the place mentioned, headed by the band and the school board. Upon reaching the building prepared for the exercises it was found completely filled with parents and children desirous of seeing the celebration of one of our national holidays. Several flag drills were given by the pupils, under the direction of the English teacher, which far exceeded the expectations of the audience. Besides, there were recitations, speeches, and songs, interspersed with selections by the orchestra. These celebrations have been arranged with the least possible interruption of the daily work of teachers or scholars, the rehearsing having been done evenings and Saturdays.

A series of 34 circular letters has been prepared and sent out to the teachers of the district treating of various phases of school work. Over 200 visits to the schools have been made up to the present, and the use of carbon sheets has proved of great help, both to me and to the teachers. Also personal letters to the teachers treating of some peculiar defects in their schools have not been without results. In my visits I have always tried to have a well-defined purpose, one month taking up one branch of work in particular, and the next month another. At other times I have followed up suggestions made in circular letters or to the teachers in a body. In many cases I have realized the need of bringing a spirit of cheer and inspiring enthusiasm. In my criticisms and reports of the teachers I have exercised as far as possible the three essential elements of tact, fairness, and kindness.

I have noted with great interest the progress of the night schools, especially the one in San Sebastian. There has been very good enrollment all through the year, and the attendance has exceeded my expectations. Both pupils and teachers have shown interest in their work to a marked degree, and the progress has been surprising.

In the district there are 4 private schools, with enrollments from 6 to 20 pupils. As in the towns of San Sebastian and Lares, there are hundreds of children who are unable to enter the public schools, for lack of room. These private schools supplement public instruction. The directors of the schools have been very courteous to me, and they are working for the advancement of learning in the island.

Owing to the great difference in class standing of the various groups of the same grade throughout the district, I have found it necessary to regrade all pupils in the graded schools. The examinations were prepared in this office, and next year each pupil will be placed in the grade corresponding to the results obtained in these examinations.

There is great interest shown by the pupils in the English classes which are to be conducted during the coming summer, and I have no doubt but that they will prove highly beneficial to them.

In the municipality of San Sebastian there are 25 barrios and only 12 rural schools, and in one of these barrios there are almost 200 children. There has never been a school near enough so that these children could attend. In the town of San Sebastian there are enrolled about 350 pupils, and there are over 400 who can not enter the schools, as they can not be accommodated. In view of the urgent necessity I would recommend an increase in the number of schools granted to this town next year.

The agricultural school building in Las Marias, which for the past two years has been functioning as a rural school, is so situated that it is impossible to

obtain good enrollment and attendance without taking pupils away from the graded school in that town. The two buildings are not over five minutes apart, and therefore I would recommend that the agricultural school be removed to the barrio of Furnia, where there is no suitable building for a school, and where there are plenty of children to more than fill it.

Before closing this report, I wish to thank the commissioner of education and all others associated with him for the kind and prompt attention always given to any details brought to their notice.

Respectfully submitted.

F. E. LIBBY,
Superintendent of Schools.

THE COMMISSIONER OF EDUCATION,
San Juan, P. R.

SCHOOL DISTRICT NO. 15.

DEPARTMENT OF EDUCATION OF PORTO RICO,
OFFICE OF DISTRICT SUPERINTENDENT,
Utuado, P. R., May 31, 1905.

SIR: I have the honor to transmit you herewith my second annual report on the schools of district fifteen, for the school year 1904–5.

In our report for 1903–4 it was impossible to mention the part which our teachers took in the Porto Rican teachers' summer study trip to the United States. In spite of the fact that the greater part of the teaching force of this district is to be classed as rural, with salaries ranging from $225 to $275 per annum, 24 teachers went to the United States and returned to their work with broader ideas and renewed vigor. We wish to express our appreciation of the sacrifices made by them and their families in order to better prepare themselves for the noble part they are to play in molding the character of the coming generation, and we are sure that in years to come they will see that their efforts and sacrifices have not been in vain, and that there is no greater satisfaction than that which comes to the teacher when he sees his pupils occupying positions of prominence and trust among their fellow-men.

The school year began September 26, 1904, with the following distribution of teachers: Utuado, 1 principal, 9 graded, 2 English, 20 rural; total, 32; Adjuntas, 1 principal, 6 graded, 2 English, 9 rural; total, 18. Night schools were also granted both terms.

The agricultural school established in Utuado last year was closed at the end of the year in accordance with our recommendation, the teacher in charge, Mr. J. Federico Legrand, having accepted a position as professor of botany in the normal department of the University of Porto Rico. Next year, if a teacher of recognized ability as a teacher of agriculture can be obtained, we would recommend that the work in agriculture be taken up again, but if such a teacher is not to be found, the school should remain in charge of a rural teacher.

In our last report we made the following statement: "In Utuado the graded schools are sadly in want of a suitable school building." In view of this, immediately upon our return from the States, efforts were made to secure a building which would satisfy the requirements made by our schools. After considering several which seemed to offer suitable accommodations, the school board decided upon that belonging to Mr. José Roig Colomer. The necessary changes and repairs were made and the schools were able to begin the year under more favorable conditions than ever before, four of the grades occupying this building, two occupying what was formerly the alcaldía, and two being located in one of the few buildings constructed exclusively for school purposes by the Spanish Government. This arrangement is the best that can be made for the time being, but we would respectfully call your attention to the necessity of a new building for the graded schools of Utuado.

The buildings occupied by our rural schools in Utuado are the best to be found in the country districts, and all received a thorough renovating before the first term opened. The property on which is situated the new two-room rural school building, known as the Agassiz School, in the barrio of Vivi Abajo, has been fenced in and several minor improvements made. The Armstrong School was painted during the summer vacation and a new tool house added.

In Adjuntas the graded schools occupy the new Irving School constructed by the department of education, and a hired building. The latter received a thorough cleaning and was painted throughout during the summer months. The rural school buildings in Adjuntas are much inferior to those in Utuado, and it is very difficult to secure buildings suitable for schoolhouses. This is largely due to the financial condition of the school board, which is unable to meet its obligations promptly, and hence it can not oblige the owners to put the buildings in as good shape as otherwise might be. At the present time many of the owners of schoolhouses have not received any payments for the last twelve months. Next year special attention will be given to this matter, and if the school board will take an interest in the matter, undoubtedly we shall be able to improve on existing conditions.

There is nothing more prejudicial to all school work than constant changes in the corps of teachers. We have been quite fortunate in the permanency of our teaching force for the past two years, there having been but one change in the corps of graded teachers. This occurred in the schools of Adjuntas, and was occasioned by the death of Mrs. Maria L. Campos de Cobian, an excellent young woman and a very good teacher, whose loss has been keenly felt not only by her fellow teachers, but also by the entire town of Adjuntas.

In the rural schools more changes have taken place. In Utuado it was found necessary, after careful consideration, to remove 2 teachers who had shown conclusively their inaptitude for any kind of school work. This, together with several resignations, has brought 6 new teachers to Utuado, while in Adjuntas it was necessary to substitute 3 new teachers, all young men, for 3 who left the district at the end of last year.

On the whole the work of the teachers has been good, and if they have been wanting in certain phases of their work, they have more than made up for these defects by the spirit of willingness and interest in all that has pertained to their work. The one thing which more than any other will aid in the forward march of our schools, is the hearty cooperation of the teachers, school board, and the superintendent, and unless this spirit of cooperation does exist, progress will be retarded and much time and strength wasted in needless discord. It gives me great pleasure to be able to say that to this spirit of harmony and community of interests, existing between the teachers and the superintendent, more than to any other one thing, do we owe the steady progress made during the year.

The greatest improvement is to be noted in the condition of the Utuado graded schools, due in part to the better accommodations and in part to the conscientious and untiring efforts of the principal, Mr. Pablo Morales Cabrera, who has given special attention to the work of supervising all work done in the several grades. In Adjuntas the graded schools are in about the same condition as last year, the progress not being so marked as in Utuado.

The attention of almost every superintendent in the island has been centered on the work in English, and I think I am safe in saying that the general opinion is that the results are not sufficient to warrant the outlay of time and money, and that the teachers are not at fault, but the system which has been followed, or rather the lack of system. In view of the above we have decided to make a change in the work which will not only result favorably as regards the work in English, but it will mean a great economy. The plan is that of half sessions, i. e., one half the day the child will do all his work in Spanish, and the other half he will work exclusively in English; this will apply to all grades from the second up to the sixth; the sixth, seventh, and eighth grades will pursue their studies according to a plan prepared by the principal and the superintendent, the language to be used depending largely on the language used in the best text-books to be had in the several subjects, but always giving ample time to Spanish grammar and literature. The work of the first grade will be carried on entirely in Spanish.

By this plan, with the same number of teachers, we shall be able to open two additional schools, which are badly needed in Utuado, and the principal can so arrange his work as to have more time for the very important work of supervising.

As suggested in our last report, we were able to secure the services of Mr. J. R. Buterbaugh as English teacher in Utuado, and we have had the satisfaction of seeing the work in English advance more in one year than in the previous four years. The work of the other teachers of English has been uniformly good, and they have won the esteem and affection of their fellow teachers. It is our

earnest hope and desire that there be no change made in the corps of English teachers assigned to this district for the coming year.

One sad feature of the year was the sudden death, on October 28, 1904, of Miss Adah J. Todd, of Bethel, Conn., who had been in Porto Rico less than three weeks.

The classes in English for the Porto Rican teachers have been carried on throughout the year in accordance with the outline prepared by the department of education, and the work done has been all that could be reasonably expected.

It is a great satisfaction to me to be able to report that the enrollment and attendance in all of our schools is much better than in previous years. At the beginning of the year, by dint of a little attention on the part of all the teachers, the rural schools were filled and the attendance has been better than last year. During the first term there were enrolled in the schools of the district 2,530 pupils, and in spite of the coffee crop and frequent rains the average daily attendance was 1,847. During the second term there were 2,623 pupils enrolled, and the attendance was even better than in the first term. In connection with the question of enrollment and attendance we wish to make special mention of the rural school situated in the barrio of Collores, Utuado, in charge of Mr. Francisco Maestre Serbiá, where an enrollment of 56 has been maintained unchanged since the first day of the year, with an average daily attendance of 55.3.

During the year arrangements have been made whereby the two principals in the district have been able to exchange visits, and we are of the opinion that the value of time spent in this way can not be overestimated. The graded teachers have been able, by means of a programme prepared by the principal, to visit each of the graded rooms, the result of these visits being discussed in a general meeting of the entire group of teachers. It is our plan to arrange a programme whereby the rural teachers, many of whom have never seen another school than their own, can visit one of the better schools of the district and spend the greater part of a day observing how others manage their schools.

There has been no general lack of necessary supplies this year, although in some particulars the list as prepared by the division of property and supplies is quite deficient. I would recommend that at least double the quantity of ink allowed this year be placed on the list for next year, and that an additional box of chalk be allowed each school.

The annual teachers' institute was held March 20 and 21, 1905, under the direction of Mr. Enrique Hernández, superintendent of examinations. Here again, as last year, the value of these gatherings was emphasized. Almost all the teachers in the district were able to attend, and judging from outward appearances all appeared to enjoy the opportunity to meet their companions and to exchange ideas on the work in their different schools. The public meeting was a success in every way, and the room in which it was held was crowded to the doors, although very little had been done to advertise the meeting. The audience heard with pleasure the words of inspiration and encouragement pronounced by Mr. Manuel Fernández Juncos, assistant commissioner of education, Mr. E. W. Lord, and Mr. Enrique Hernández.

The question of school boards and the degree to which their political tendencies injure efficient school work is one which demands as much attention in Porto Rico as it is already receiving in many parts of the United States. The school board in Utuado has worked for the best interests of the schools in many ways, while in others it has been exceedingly lax. Credit is due the board for having paid all back debts, although it is doubtful if this state of affairs would exist were it not for the new plan of disbursements and accounts introduced in the school boards by the department of education. As regards efforts to secure a new and suitable school building for the graded schools, it has done nothing whatever. As regards janitor service it has been quite inefficient, and some change will have to be made the coming year. There has existed among the members of the school board an idea that the ends and aims of the department of education are entirely different from those of the local school board, whereas they must be the same, or one of the two is wrong. Unless this idea changes, material conditions can not be greatly improved in the schools of Utuado.

The school board of Adjuntas is hopelessly in debt, although the municipality owes it a considerable amount, which the board expects to receive from the municipality at the end of the fiscal year. Little attention has been given to buildings or teachers by the members of the board, although they are willing to do anything suggested, but they never find time to put it in practice.

All legal holidays have been observed in the schools, appropriate exercises being held the day previous, and the programmes of the exercises forwarded to this office, in this way enabling us to form a general idea of the mode of observance. Special attention was given to the celebration of Arbor Day and Thanksgiving Day, exercises commemorative of both days being held on the same day. The schools in Utuado, by means of a collection made among the school children, were able to distribute 100 alms to the poorest persons in town, thus giving them cause to be thankful for the observance of the day which, to the ordinary Porto Rican, unversed in the history of the United States, has no meaning whatever.

The night school in Utuado, in charge of Mr. José D. Correa, has done very efficient work, giving elementary instruction to more than 75 illiterates, ranging in age from 12 to 50 years. The enrollment has been made up of all classes of society, the greater element coming from the tradesmen, who are realizing more than ever, under the stimulus of their association with the American labor unions, the necessity of knowing how to read and write. The work done has been very satisfactory, and is a very economical form of education and should be encouraged to the greatest extent possible.

In Adjuntas the night school was a total failure, although intrusted to one of our best graded teachers. The political campaign which was raging at the time of its inauguration proved fatal, and it was necessary to close it within two weeks from the time of its opening.

In accordance with an order of the superior board of health, transmitted us through the commissioner of education, the children in all the schools of the district have been vaccinated, or arrangements have been made to have them vaccinated. This work has been greatly delayed by the insufficient number of vaccination points received by the local health officer from the superior board of health.

I would summarize the work of the past year by saying that it has been one of slow but steady progress, and we may safely assert that within a few years at the most the beneficial results of the present system of public schools, if no radical change is made, will be evident not only in the more important towns and cities of the island, but also in the most remote barrios.

In concluding this report I wish to thank the commissioner of education and the able staff of assistants associated with him for the many attentions they have shown me on all occasions.

Respectfully submitted.

J. W. SMITH,
Superintendent of Schools.

THE COMMISSIONER OF EDUCATION,
San Juan, P. R.

SCHOOL DISTRICT NO. 16.

DEPARTMENT OF EDUCATION OF PORTO RICO,
OFFICE OF DISTRICT SUPERINTENDENT,
Arecibo, P. R., May 23, 1905.

SIR: I have the honor to submit herewith my annual report of the work of this school district during the year 1904–5.

In the reorganization of the school districts of the island, which took place during last summer, the municipality of Lares was segregated from the district of Arecibo and that of Camuy, with the two annexed towns, Hatillo and Quebradillas, was added. This change brought an improvement in the topographical conditions of the district, but at the same time it greatly increased the office work on account of the greater number of teachers, and more than that, on account of the lack of uniformity which is always found in schools that for a long time have been under different management. This also makes it hard to make general statements concerning the conditions of the schools in the two municipalities, since there are many points in which they still differ.

The number of schools has not been increased over that of last year. On the contrary, three rural schools have been closed the greater part of the year on account of not having any application for them until a very recent date. One of the three, in the municipality of Camuy, is still closed. The number of rural teachers in the island increases so little that if we were going to increase the number of rural schools every year we would soon reach the point in which the demand for teachers would be greater than the supply.

SCHOOL BOARDS.

The school board of Arecibo has continued the good work which was begun last year, and the care used in the management of its school funds has brought about a more favorable financial situation than has ever before been enjoyed by it.

At the time this report is being written the board of Arecibo has paid all the expenses incurred up to April 30, 1905, and has a surplus in the bank. The good management will be better appreciated if we take in consideration the fact that the municipality has to support 19 graded schools and 24 rural, and that the house rent paid to the teachers is higher than in the rest of the municipalities of the island except San Juan, Ponce, and Mayaguez. At the same time the board has supplied all the schools with the necessary material, and although the furniture in the rural schools is deficient in quality, each school has seats enough for 50 children or more.

The office work of the board of Arecibo is up to date and is done in a business-like way. The board pays a clerk, the office is opened regularly six hours a day, and the records are kept in the best order.

It has been a trying task to straighten up the situation of the Camuy school board, although it is gratifying to say that the work is almost accomplished. The board, which acted from the beginning of the school year up to January, 1905, did nothing which might result in the improvement of the schools. In the elections held last November a new board was elected, but it did not take many days for me to see that it was going to continue the bad work done by the preceding one, as its members, like the others, were under the same political and local influences which were at the back of everything done by the last board. Fortunately, the new members failed to take the oath of office within fifteen days after the beginning of their term, and this was a legal reason to discharge them. New members were appointed, who began at once to reorganize the board, although they had to work under very adverse conditions. At last they succeeded in straightening up the situation as far as possible, and at the present time all the debts have been paid up to March 31, 1905, when two months ago the obligations of the board amounted to nearly $2,000.

SCHOOLHOUSES.

With the exception of a few rural schools, the houses used for schools in Arecibo this year have been the same used last year. There has been a good improvement in the way of getting some repairs done by the owners. The school board repaired the buildings occupied by the Jefferson and Baldorioty graded schools. This last building is an old house owned by the municipality, and which is not well suited for school purposes. A fence around the grounds of the Jefferson school will soon be built.

The necessity of building a schoolhouse in Arecibo of at least 15 rooms is obvious. There is not a private house in Arecibo which might fill all the requirements for a school, and the rent paid is always comparatively high. The poor sanitary conditions of the town make it necessary to have the schools separated from the private dwellings as far as possible, or at least from those parts where the population is most dense. Absences of children on account of sickness are extremely frequent, and malaria is almost the only disease which causes these absences. Many children have contracted the disease in the schoolrooms, this being most frequent in the rooms situated in the lower floors of the buildings. The school board and myself have been working hard to get a new building erected in this city, but so far we have failed. Yet I am sure that the day will come in which this need will be properly met in one way or another.

With the exception of the building occupied by the graded schools of Quebradillas, which is an excellent private house especially built for the schools, and of that containing the graded schools of Camuy, which, although an old house, has large and well-ventilated rooms, the buildings used for schools in the municipality of Camuy are very deficient. Only three or four of the rural schoolhouses are satisfactory. As the present board is paying its expenses promptly and regularly, we shall be able, I expect, to secure better houses for next year, or to have the owners of those hired at present repair them.

In connection with this I should say that the schools of Camuy are very poorly equipped with furniture. The furniture, even in some graded schools, is old

and insufficient. It will be necessary to make a good appropriation in the budget for next year for this item, as the schools of Camuy in this respect are some of the poorest in the island.

WORK IN THE SCHOOLS.

The graded schools of Arecibo have simply continued and improved the work done last year, and no new feature has been introduced in the schoolroom work. This persistency in the plan has allowed a good progress in the methods as well as in the discipline, and we are now prepared to make some radical changes next year, especially in the English work.

The classification has been greatly improved, and the results obtained from the work done last year in this respect have gone far beyond expectations. Semiannual examinations have been held for promotions, and the results plainly show their advantages.

The work in the graded schools of Camuy has had a different character, the aim having been to base it on the same principles on which it is based in Arecibo. Therefore we may say that it has been a year of changes and preparation, with good reason to expect good results next year.

The new course of studies for the rural schools issued by the department has greatly simplified the work in the country schools, especially the classification. Outside of the many difficulties met in establishing a uniform programme in all the schools, the plan works well, and has been a real improvement over previous years.

The minimum age for children to enter rural schools should be raised, and no child should be enrolled in the rural schools who has not attained the age of 8 years. Since the child in the rural school has to get through in three years, it is obvious that children of 6 or 7 years can not easily do the work required in the first year.

TEACHERS.

With many changes in the personnel of Arecibo there has been a fair improvement in it. They have showed great interest in their work, with a few exceptions. Judging by the results of my visits to the schools and by the reports sent to the department, the average number of good teachers is larger in Arecibo than in Camuy, not only considering the ability but also the zeal and interest. This is greatly due to the liberality with which two and three years' licenses were distributed in Camuy last year. It will suffice to say that out of 43 teachers employed last year in Arecibo only 12 received two or three years' licenses, while in Camuy 17 out of 25 received them. Only a few of these teachers have done an entirely satisfactory work this year, while the competency of some of them is very questionable. As a matter of fact it is anything but wise to give a teacher two or three years' license when his efficiency is not out of question.

With only one exception the teachers of English have done good work, obtaining the best results that can be obtained with the present system of special teachers.

ENGLISH WORK.

The unsatisfactory results obtained in the English work, even with the best teachers, due to the little time devoted in each room to that important branch, necessarily leads us to make new experiments in this line of our school work. That the special teachers of English, going from room to room and teaching twenty-five or thirty minutes in each grade, do not get results in proportion to the cost of that instruction is out of question. Something has to be done to establish the work in the graded schools on the English basis, and this should be done as soon as the ability of the Porto Rican teachers to teach that language is such as will enable them to teach in it the different branches of the course of studies. Following one plan or another our aim in the future must be to graduate from the graded schools every year a larger proportion of children with a good ability to use the English in both the written and spoken language without neglecting the Spanish. In my opinion at least 70 per cent of the time that the child is in the school should be devoted to teach him English and the other branches in English, while 30 per cent should be devoted to the Spanish language. This can be done either by dividing the time in that way from the first to the eighth grade, or by teaching only English in some of the primary grades and English and Spanish in the rest of the years, so that at the

end the same proportion of 70 to 30 will result, or vice versa. Which of the three ways will be the best experience will tell, although it is a proved fact that the early life of the child is the most appropriate to acquire the ability to speak a language.

AGRICULTURAL SCHOOL.

The financial conditions of the island compel us to try to get the best and largest possible results for the money spent in any school. The agricultural school in Quebradillas has not given any results as such and will probably never give them. For this reason I have recommended that it should be closed next year. With the same amount of money spent in this school we could open and maintain two rural schools, each one of which will surely give the same results the agricultural school has given and perhaps better.

INDUSTRIAL SCHOOL.

It is to be regretted that the legislature failed to provide for the maintenance of the industrial school of Arecibo next year. Although the organization of this school at present fails to fulfill its object, yet it could have been reorganized in such a way as to be a very efficient agency of the educational progress of Arecibo. It is to be desired that the mistake will be corrected in the next session of the legislature, and that enough money will be appropriated for the reopening of this important institution.

The schools of this district have been foremost this year in celebrating some of the legal holidays, especially Arbor Day and Washington's Birthday. On both days the teachers of the graded schools of Arecibo showed a great interest in making these public manifestations of the patriotic and civic feelings which the schools are developing in the children of Porto Rico. When these celebrations show a right spirit of discipline and respect for what is great and worthy, they play an important rôle in forming the character of the children, and at the same time awake the public interest for the schools in the community. In connection with this I must say that the school band and the regiment of the graded schools of Arecibo stand here as a proof of the keen interest that teachers and pupils have taken in their work and as a great help in discipline and character building.

In closing this report I must thank the department for the kind and helpful aid which I have constantly received in my work.

Respectfully submitted.

E. LANDRON,
Superintendent of Schools.

The COMMISSIONER OF EDUCATION, *San Juan, P. R.*

SCHOOL DISTRICT NO. 17.

DEPARTMENT OF EDUCATION OF PORTO RICO,
OFFICE OF DISTRICT SUPERINTENDENT,
Manati, P. R., May 29, 1905.

SIR: In accordance with instructions received from your office, I have the honor to submit herewith my annual report on the schools of the district of Manati for the year 1904–5. The writer of this report was transferred from the Camuy district by the former commissioner of education, Hon. Samuel M. Lindsay, and assumed charge of the present district on September 6, relieving my predecessor here, Mr. Edgar L. Hill, who had been in charge two years.

It is my desire to kindly thank Mr. Hill for the valuable information placed in my hands in regard to the district in general. As stated in his brief report left with me, I found all of the schools of the district fairly well equipped. The graded schools were all provided with modern school desks, with the exception of those of the town of Barceloneta, and the rural schools were all furnished with strong boxes for books, water filters, buckets, cups and hatracks, besides having the usual furniture found in rural schools.

My first duty, after taking over all the books and material, was to become acquainted with the school boards to see how much money had been appropriated for public instruction. I found that all the towns of the district had made ample appropriations with the exception of Morovis, in which municipality the board had scarcely made provisions for the absolutely necessary expenses, and therefore we have not been able to make any material improvements there

during the present year. Later on in the report the changes made in the equipment in the other municipalities will be explained.

It seems that very few books were ever condemned by the former superintendents of this district, and I find a great many, especially Libro Primero and Libro Secundo de Lectura, unserviceable, and it will be necessary to take them out of the schools at the end of the year. In some cases the work has suffered and the advance of classes has been retarded by the bad condition of the textbooks mentioned. My second duty was to petition the school board of Manati to purchase some equipment for an office, where the superintendent could do his work satisfactorily and where proper records of the schools of the district could be kept.

The board kindly granted my request and authorized me to purchase the furniture necessary. I obtained the following as soon as possible: An oscillating mimeograph, cabinet files, chairs, and index files. With this improvement in office equipment I have been able to carry on my work with much greater dispatch than I would otherwise have done without it. This district has not yet been supplied with a typewriter, but I have been fortunate enough to have the use of the one belonging to the Camuy school board. This must be returned to them at the end of the school year.

We have been able to purchase but very little modern furniture for the schools. Should the department continue to sell school desks on the half-price plan, we shall endeavor to equip several rural schools the coming year. During the second term the school board of Manati purchased 50 desks for the graded schools in Barceloneta, and this is the only improvement made in this line in the district. We are sadly in need of blackboards in all the rural schools. Heretofore the blackboard cloth has been nailed on the walls of the buildings, leaving a very rough surface, scarcely fit for use. Our work has been retarded considerably for the lack of this important adjunct for the success of the rural teachers, and it is our intention to have a sufficient number of blackboards made during the summer vacation to supply each school with at least two.

At the beginning of the school year I found the financial condition of the board of Ciales in a deplorable state. The president, a very competent gentleman, was compelled to reside the greater part of his time in San Juan, to attend to private business. The other two members resided in the country. I made several appointments to meet the board to transact business, but they failed to be present. All the members of this board soon resigned. I was then able to recommend for appointment a new board composed exclusively of men residing within the limits of the town. When the present board assumed charge the financial condition was extremely bad, as before stated. In many instances the owners of the school buildings had not been paid for eighteen months.

The five graded schools at Ciales have been taken out of the building in which they were located when I took charge of the district, and are now installed in a building formerly occupied by the ayuntamiento. This house is much better, and has been remodeled so that it makes good, comfortable school quarters. Upon my first visit to the schools of this district my attention was attracted by the absolute neglect of almost all the teachers to make any systematic preparation for their daily work.

Without the proper forethought the teachers naturally had to resort to long and tiresome lectures in conducting recitations, using a great flow of words, but conveying very little to the pupils as food for thought. A circular letter was immediately sent out from this office requiring each teacher to prepare a careful outline of his daily work to be carried out in each class. Some of the teachers considered this an unnecessary burden placed upon them, and complained not a little. This complaint nevertheless has gradually disappeared as they realized the improvement in their own work and also in the reports that they received. During the year many circular letters have been sent out from this office relating to different phases of the work.

In this way I have kept in touch with all the teachers, and at the same time have made the work much more uniform over the district. Being the first year spent here, much of my time has been consumed in visiting the schools, to more thoroughly acquaint myself with the individual work of the teachers and the general condition of the schools.

The work in the three branches—geography, arithmetic, writing, and, probably, English—reach or go over the average degree of efficiency of the same branches in other districts. In history, grammar, and reading the work is deficient in many of the schools. Careful, patient supervision is the only way by which

many of the deep-rooted evils can be eliminated. In great part the question of success devolves upon the teacher. If he is young, progressive, energetic, and possesses a good moral character, all the desired reforms would not be long in being realized.

The teaching of English has progressed satisfactorily in all the towns except Morovis, where there has not been an American teacher this year.. If our ultimate aim is to bring pupils out of the public schools with a good knowledge of English, then there must be more English in the work of the children in the first, second, and third grades. We have an example of pupils in the eighth grade at Manati who have had six years' work in English, taught as a branch, with only a fair knowledge of the language and most of them with a very poor pronunciation. This means that children must have more practice during the first, second, and third years, when it is possible for them to acquire a good pronunciation. After reaching the fourth grade it might be advisable to have the entire work in English.

I wish to speak particularly in favor of our teachers' institute, held in Manati on March 22 and 23. Mr. Paul G. Miller was appointed director, and almost wholly to his interest, ability, and knowledge of the character of the Porto Rican teachers is due the extraordinary practical results obtained during the two days' session. The public meeting held on the evening of March 23 was largely attended by the best citizens of Manati. As previously announced, the commissioner of education, Doctor Falkner, and Mr. J. M. Gordils were present. Both delivered addresses of much interest to the public and teachers. The president of the school board, Mr. Clemente Ramirez, also delivered an interesting and instructive address. Public meetings of this character have a far-reaching effect in cultivating public sentiment in favor of our schools.

One night school has been open in the town of Manati during the year, and the work has been very creditable. Quite a number of those enrolled when the school was opened did not know a letter or number; now they can read well in the third reader, and know something about arithmetic, language, and geography. Frequently, after the regular lessons, the teacher has given short lectures on the administration of the municipal and insular governments, besides explaining the rights and duties of a good citizen. These short talks have been highly appreciated by those in attendance, and in my opinion there should be a good night school in every town on the island.

There were no school libraries in this district at the beginning of the school year. One is being founded at present in Manati, and the funds for this purpose are being raised by the sale of 10-cent shares by the pupils of the school. Almost $100 has been collected in this way, and, in addition to what the school board will contribute, there will be sufficient money to purchase quite a number of books.

There has been a much more economic use of material this year than ever before. I believe I am justified in saying that a considerable sum of money has been saved. Arrangements should be made by the department to forward all the supplies to the districts at the beginning of each school year; then the superintendents could make an equal distribution at the opening of the schools, and at the end of the first and second terms, compelling in this way a more careful use of the material by the teachers. I wish to emphasize that a much larger number of composition books is needed. It must be taken into consideration that the pupils of graded schools need a few additional each year for their work in English

Arbor Day and Washington's Birthday were both enthusiastically and intelligently celebrated in all the schools. Since being connected with the department of education it has not been my pleasure to see a better celebration than the one held in Manati on Washington's Birthday. The success was largely due to the teachers of English, acting principal, and cooperation of the school board. The former board also kindly assisted in the celebration of Arbor Day. Short exercises will be held in the schools in commemoration of the other holidays, but no particular preparation will be made, as it interferes too much with the regular routine of school work.

Twelve young people will finish the course of study at the end of this year in Manati, and if successful in the final examinations will receive the eighth-grade diploma. I consider these pupils well prepared, and if they continue their studies in the normal school or any high school they should do creditable work.

Attendance has been good in all the graded schools since the opening of the year. During the first term in the rural schools of Ciales and Morovis the

attendance was very low, owing to the fact so often noticed that the children in the coffee-growing regions will not attend when the crop is being gathered.

A noticeable break can always be seen in our public school attendance beginning with the sixth year. This dropping out is caused in many cases by family necessities of different kinds, and should be considered a strong argument in favor of reducing the course of study to six years' work instead of eight.

Summed up as a whole, the progress of the pupils in the schools has been satisfactory, if progress be measured only from the text-books. The real moral education in its broadest sense has only been lightly touched upon by most of our teachers. It appears to me that we are falling short to some extent of the principal object of education, i. e., making good and useful citizens.

With few exceptions the teachers have remained at their posts faithfully during the year, striving to do all in their power for those intrusted to their care. The teachers of English have also labored incessantly, and this report would not be complete without thanking them as well as the Porto Rican teachers for their earnest efforts. While writing this report I have had occasion to refer several times to the report of former commissioner of education, Doctor Brumbaugh, published in 1901. It is a pleasure to note how many improvements have been made from that year to the present time.

The most marked change can be seen in the teachers. Practice under careful supervision, district institutes, teachers' meetings, and the reading of good pedagogical works have wrought a wonderful change in the teaching personnel of the island.

In closing this report I desire to sincerely thank the commissioner of education, the assistant commissioner, and division chiefs for their kind assistance during the year.

Respectfully submitted.

E. W. HUTCHINSON,
Superintendent of Schools.

THE COMMISSIONER OF EDUCATION,
San Juan, P. R.

SCHOOL DISTRICT NO. 18.

DEPARTMENT OF EDUCATION OF PORTO RICO,
OFFICE OF DISTRICT SUPERINTENDENT,
Toa Alta, P. R., May 31, 1905.

SIR: In compliance with your circular letter No. 196 I have the honor to submit you my report of the work in my district up to the 1st of June, 1905:

District No. 18.—It was formed in 1902, when I began to act as superintendent, by segregating the municipalities of Vega Baja and Vega Alta from the school district of Manati, and those of Toa Alta, Corozal, and Dorado from that of Bayamon. These five towns were comprised in two municipalities—that of Vega Baja and that of Toa Alta. There were two school boards, one in each of those municipalities, as it is going on now. There were 6 graded schools and 11 rural ones in Vega Baja, and at present time there are 8 graded schools and 11 rurals. At Toa Alta there were 9 graded, 1 agricultural, and 16 rurals. The number of rural schools has been reduced in Toa Alta to 10, because of the lack of money of the school board to furnish said schools with the furniture required by the department. At present there are 3 rural schools in Toa Alta, whose buildings are freely granted by Mr. Isaac Rivera, Mr. Andrés Rivera, and Mr. Manuel Batists in their barrios. Mr. Elías Rivera, of Corozal, and Mr. José Carro have also offered buildings free for opening 2 rural schools more next year.

Opening of schools.—On the 26th of September of last year all my schools (43 in all, including the English teachers) were opened with the enrollment and attendance required; most part of them with many more pupils. They have gone on with increasing enrollment and attendance generally, because 2 rural ones, which proved not to be well located, were at once removed. I have rural schools, such as those of Cibuco and Padilla (schoolhouses free), with 88 and 77 pupils since their begiming.

Furniture of schools.—Those of Vega Baga are well equipped. Those of Corozal have the necessary furniture. The rural schools of Toa Alta have deficient furniture. Those of Dorado are now badly equipped. Notwithstanding, the conditions are now greatly improved if compared with those prevailing two years ago, when pupils had to sit on the floor. Every school now has closets

and its garden; the graded ones have besides janitors, and every school of Vega Baja has desks, chairs, perches, filters, washstands, etc.

Progress in schools.—In every rural school there are three grades at present—first, second, and third—most of the pupils being fit to pass to the next grade the coming year. In every town there are grades from first to sixth, except Vega Baga, where there are from first to eight. On last term more than 200 pupils passed to the next grades with good percentages. From fourth grade the pupils generally know as much English as the teachers of Class B. Eight pupils of eighth grade have just applied for free scholarships in the insular normal school, and will take the examination of eighth grade June 12. Five teachers of Class A have been recommended to take the examination at San Juan June 1, that they may teach their grades in English next year.

School sessions.—In graded schools there are two sessions—one in the morning and the other in the afternoon. The morning session begins at 8.30, continuing until 1.30, and that in the afternoon is from 1.30 to 4.30. I have two schools with double and full enrollment and attendance each—one for morning session and the other for afternoon session. The school hours in my rural schools are from 10 a. m. to 3 p. m. In this way the pupils can help their parents in the morning and eat something before going to school, and do not need to go home to dine before the school is closed.

The new plan of study for rural schools has proven to be an advantage, because it details the work and the manner in which it is to be done with clearness.

The teachers as a rule have worked earnestly and with good success, being punctual and interested in their work. The teachers of English have accomplished their hard tasks as models of activity and enthusiasm for the cause of the instruction of the people. The improvement of teachers of Toa Alta, under Mr. O. F. Eastman, since he began to teach on last January, has been very remarkable. We need one English teacher more for Vega Baga next year in order that two English teachers may accomplish the great task of teaching 300 pupils, and twelve teachers of all grades.

The teachers' institute conducted last March by the principal of the high school of San Juan, Mr. Clopper, and myself was attended by all the teachers of the district except three, two of whom were sick. It was very successful in every respect and advantageous for schools. The good impression made upon the people by the evening sessions, attended by the honorable commisisoner of education, assisted by Mr. José Gordils, last still.

Schools for English in summer.—I issued a circular letter advising my teachers of the desirability of their taking advantage of the English summer school offered for my town where 25 teachers would attend it, and everyone answered that they were willing to attend in the town where they must live in summer.

My visits to schools this year have not been so frequent as in past ones. because I have had much more work at the office, have issued more circular letters, and principally because I have spent, whenever possible, more than two hours in visiting each school and in conferring afterwards with the teachers. Those schools in need have been oftener visited.

I have devoted considerable attention to the classes in English for Porto Rican teachers, visiting them oftener than the common schools. The teachers as a whole have improved a great deal, they are no longer ashamed to talk English. all of them except one took the written examination, and all of them except two came to take the oral examination.

The agricultural school at Toa Alta in charge of Mr. Ramon Santini has been successful in every respect. Tobacco, kidney beans, and cotton were grown there, besides a quantity of minor fruits distributed among the pupils. These pupils are learning how to plant better than their parents did.

One night school was opened on the 13th of last February. The enrollment and attendance to this school during the four first weeks increased from 32 to 47. In the last month the enrollment and attendance have diminished a great deal, because the pupils were mostly cigarmakers who have just gone to Bayamon, where they intend to remain at work.

The school board of Vega Baja can support more schools next year, because they have furnished every school in their municipality, and had more than $500 left. They wish to build a 6-room school building by paying half of its cost.

The school board of Toa Alta has not had money enough to pay teachers punctually, and has had to reduce the number of their rural schools. They should have been obliged to close more if some gentlemen had not granted schoolhouses rent free. Notwithstanding, their financial conditions have been notice-

ably improved, if we consider that in three years they have paid many old debts for school buildings and for house rent of past years, and at present they are paying with one or two months' delay their current expenses.

Free scholarship.—One girl of Vega Baja passed the examination and entered the Insular Normal School this year.

At present I have on hand 8 applications for free scholarships in the Insular Normal School at Rio Piedras. All these applicants are pupils of the eighth grade in Vega Baja and will take the examination of their grade in Toa Alta on the 12th of June.

Reports Form A.—Since we are making these reports every term instead of every school month, the work is done with more accuracy and ease. Notwithstanding, superintendents must work hard during the first days of each term by day and night to perform their task of examining so many registers and reports.

Help to the teachers.—Before the teachers had to pay for carrying the books and other material to their schools. At present the school boards pay for this and for every transportation of supplies or furniture.

Supplies from the department.—They are well kept in boxes in schools. For two years my worn-out material has not been condemned.

War against anæmia.—In my visits to schools, principally to the rural ones, I would meet the pupils at recess time to talk with them about anæmia, its causes, its remedies, and the necessity of reforming their habits when they favored the spreading of anæmia. My teachers also are interested in this important work for the welfare of the people.

Holidays.—Through all the district, in every graded and rural school, these days have been duly celebrated. Circular letters, with instructions, have been sent out from superintendent's office. The teachers have always sent reports of the way in which they observed holidays and the number of persons attending. The school boards have made provision to take an active part in these celebrations and to allow money from their funds to decorate the rooms, and so on. It is customary for every teacher to make an address to the people and pupils on the subject of each holiday. In my headquarters I have always directed these celebrations personally, and talk to the people, teachers, and pupils.

Very respectfully submitted.

ANDRÉS RODRIGUEZ Y DIAZ,
Superintendent of Schools.

THE COMMISSIONER OF EDUCATION,
San Juan, P. R.

SCHOOL DISTRICT NO. 19.

DEPARTMENT OF EDUCATION OF PORTO RICO,
OFFICE OF DISTRICT SUPERINTENDENT,
Bayamon, May 31, 1905.

SIR: I have the honor to herewith submit for your consideration the annual report of the schools of the district of Bayamon.

SCHOOL POPULATION.

The Bayamon district, which includes the municipalities of Bayamon, Naranjito, and Toa Baja, has a large and rapidly increasing population. An incomplete census taken last year by my predecessor, Mr. Roger L. Conant, showed 6,200 children of school age. Eighty per cent of this number must be considered rural. The resources of the school board are taxed to the utmost limit to provide even decent accommodation for half this number. The territory included within the district is large and the barrios extensive. Added to this is the problem of meeting the increase of population in some towns and the decrease in others.

SCHOOL BUILDINGS.

There have been in use during the year 36 school buildings, of which 2 are owned by the board and 1 donated by the ayuntamiento; the rest are rented.

The two buildings that the board owns—the graded building in Bayamon and the agricultural school at Hato Tejas—are in fairly good condition and will be thoroughly overhauled and repainted during the coming vacation. The ayuntamiento of Toa Baja has also promised to make a few needed repairs on the old alcaldia now occupied by the graded school of that municipality. The rented rural school buildings vary enormously. Many of them are small, bare, single-room, palm-thatched shacks, poorly constructed, illy ventilated, and entirely inadequate to house the teeming mass of children packed within their walls. A notable instance is the Sabana Seca school, where the teacher sits in the doorway with her chair placed on a little raised balcony, and from without directs the work within. There was no other building to be had in the barrio, and rather than abandon the school the work was carried on under difficulties. A new building will give relief next year. Other rural school buildings are large, clean, well painted, well lighted, and in excellent repair. Be it said to the credit of the board that it has condemned 18 rural school buildings now in use and will negotiate a loan to erect the same number of neat, commodious structures. The school board also, with the aid of the department, has contracted for the erection of a fine modern school house of 5 rooms to be located at Cataño. The cost will approximate $9,000. We hope to have the building ready for occupancy at the beginning of the next school year. Another very gratifying feature was the virtual gift to the school authorities of this district of two large brick and stone buildings situated on the carretera, and formerly used by the board of public works. With slight repairs these will be immediately available and put into commission as rural schools. Our grateful thanks are due the commissioner for this thoughtful deed.

ENROLLMENT AND ATTENDANCE.

Both the above items show praiseworthy progress. The average enrollment per school has been raised from 44.82 of last year to 50.21, an increase of 12 per cent, and that, too, with little or no enforcement of the compulsory education law. The attendance has been brought up from 31.92 of last year to 38.07, a gain of 19 per cent. These figures speak volumes for the interest and enthusiasm of teachers, parents, and children. Most of the absence seems to be due to torrential rains, impassable rivers, bad roads, and the necessarily great distances to be traveled in the rural districts. Tardiness is far in excess of the normal rate, particularly in the rural schools. This was expected from the beginning. Good attendance means a high tardy average in certain schools. We sacrificed punctuality to regularity, and we got the children. The general results demonstrate the wisdom of the plan. The percentage of pupils neither absent nor tardy during the entire year will also show a magnificent gain over last year's record.

AGE OF WITHDRAWAL FROM SCHOOL.

I am pleased to report that the entrance of a class of seventeen pupils into the examination for the eighth grade in the town of Bayamón gives us hope that the next year will bear golden fruitage in the graduation of the first class completing the whole curriculum. It is to be expected in all places that but a small percentage of the pupils of a school system will be able or willing to complete the entire course, and the question of the age of withdrawal and causes has been discussed far and wide. Fully one-half of our town pupils have withdrawn at the completion of the third grade, another fourth at the beginning of the fifth grade, and the remainder have almost disappeared before the line of the seventh has been reached. The causes are many and various and can have no place for discussion here; but the success of a quiet, insistent propaganda inaugurated in Bayamón some three years ago by parents and teachers is even to-day blossoming into fruit that transfixes our attention. In the rural schools the new course of study gives hope that many and distressing conditions under the same head may be ameliorated, and already the town and rural teachers are at work on a plan by which the three-years' course of the rural schools may be articulated with the six or eight year course of the town schools, so that pupils completing the rural course may enter any town school as a sort of continuation school without losing grade.

HALF-TIME SCHOOLS.

On account of the small seating capacity of three primary graded schools in the town of Bayamon, and the pressure of pupils demanding admittance, it was deemed advisable to try the half-time plan in these rooms. Sixty children for each room were accordingly divided into two groups of 30 each—the younger children attending in the morning, the older ones in the afternoon. A special programme was arranged and strong teachers put in charge. While the experiment was not new—both Germany and the United States giving full reports and statistics of the plan, upon which we might, in a measure, base a forecast of probable results—we felt that we were facing new conditions and new problems, and hoped for only moderate success. The teachers responded magnificently, and tests and examinations repeatedly given during the year by Assistant Commissioner Lord and myself have demonstrated that these half-time schools compare very favorably in efficiency with the all-day schools of the same grade. The entire year's work was covered and the results excellent. It is very probable that the experiment will be extended next year from both graded and rural standpoints, since a like plan tried in two rural schools also proved equally successful.

Another idea that the board is considering is the "double-school" plan. Renting two schoolhouses located at the foci of an ellipse that includes a densely populated barrio, school will be taught in the morning at one of the foci; after dinner and a rest, the teacher mounts his horse and rides to the other point, a half-hour distant over a good road, teaching another group in the afternoon.

AGRICULTURAL SCHOOLS.

The agricultural school has continued its excellent work and rendered entire satisfaction. The truck garden has given fine results, and regularly rotating crops of peas, beans, onions, lettuce, carrots, beets, radishes, etc., have been grown, beside native stock, such as ñame and yautia. A strong nursery of five varieties of young orange trees is doing well, while six of seven classes of bananas have borne luscious fruit. A pineapple patch, including three kinds, demonstrates that the youthful agriculturalists are giving attention to a crop that pays well. The æsthetic standpoint is not neglected, for the girls, assisted by the smaller boys, have beautified the front and sides of the ground with artistically arranged flower plots, where bloom roses and lilies in profusion—the chef d'ouvre, a stretch of smooth lawn with the school initials set in plants of glowing color, with a limestone-rock border. This work has been accomplished under difficulties, water being carried at times from a small stream over a kilometer distant from the grounds. Mr. Pablo Blanco, the teacher in charge, deserves special mention for his energy, intelligence, perseverance, and self-sacrificing spirit. The children have worked well in field and schoolroom.

A few months since, agricultural work was inaugurated at the rural school of Pueblo Viejo, the necessary tools being kindly loaned by the department, while the agricultural station at Mayaguez furnished seed and many valuable suggestions as to planting and cultivating. The work was entirely voluntary, Mr. Luis J. Dubon, the teacher, directing and assisting the pupils in their gardening before and after school. Each boy was given a plat of ground and seed for planting. The experiment has proven a success in every way. Fine crops of garden truck were grown and given to the young farmers for home consumption, or sold, as they elected. Since the institution of the work, five other schools have asked to enjoy the same privilege, and it is probable that next year, with the aid of the department, the work will extend itself. The value of the movement is so apparent as to need no comment.

ENGLISH CLASSES.

The marked advance in interest and the desire for study and progress, as evinced by a comparison of the examination results of last year with those of the present year, speak louder in praise of the teachers of this district than anything I might say here.

THE ANNUAL CONFERENCE.

The annual teachers' conference, held March 17 and 18, at Bayamon, was a notable one from many viewpoints. A general committee of prominent citizens arranged the details and took a personal interest in the work. Every teacher in the district was present. The direction and instruction of the institute chief, Mr. Felipe Janer, was so strong and efficient that the teachers, after prolonging the lessons far beyond the set time for closing, begged that still more time and work be given them. The public session in the evening of the closing day was attended by the best families of the city, the large, double reception hall of the school being crowded to suffocation at an early hour. Mayor Davila welcomed all in a felicitous manner, and the addresses of Commissioner Falkner, Mr. C. H. Ames, of Boston, and Dr. José Barbosa were received with well-merited applause. The deepest spirit of interest and good-fellowship pervaded the entire session, and the accruing benefits are incalculable. The formation of a teachers' association at the close of the first day's work, tending to the general betterment of the profession and the interchange of ideas, is but one of the apparent results.

THE SCHOOL REGIMENT.

The organization of a school regiment for the district has already begun, and the boys are in active daily drill. The work has not yet advanced far enough to demand a detailed report. Suffice it to say that the young soldiers are entering into the drills with zest and interest. If they display the same perseverance and patience that signalized the old cadet battalion of the Mayaguez Industrial School, attaining its well-known proficiency and discipline, the district may well be proud of its school regiment.

TEACHERS.

The teachers have given faithful, intelligent service. The standard of efficiency is gradually being raised and better work done. Every school in the district, both graded and rural, has its garden of flowers, well-watered and tended. There is also an attempt in every school to beautify the interior with pictures and other adornments. In some schools neat carpet mats, modern decorated water filters, beautifully embroidered covers for the teacher's desk, and other advanced ideas attest progress toward a high goal. Character building is being pushed into the foreground, and the children, above all, are first taught correct habits of speech, thought, and action. An esprit du corps that manifests itself in friendly rivalry, firm loyalty, and the deepest devotion to the best interests of the schools, is stimulated among our workers.

RECOMMENDATIONS.

I have the honor to submit the following recommendations: First. That both graded and rural teachers' certificates be qualified as A, B, or C, representing grades of ability in school administration; salary to be fixed according to grade. Second. That teachers be given three regular visiting days each year. The date of such visits and the schools to be visited shall be arranged by the superintendent. Third. That the department stamp every text-book with the date of its issuance as new. Fourth. That monthly report blanks be issued by the department for the marking of principals as such, over and above their duties as teachers. Fifth. That superintendents be required to visit one district at least each year, for comparison of work. Such visit to be made after consultation and arrangement with the department.

Very respectfully submitted.

O. M. Wood,
District Superintendent.

The Commissioner of Education,
San Juan, P. R.

Exhibit VIII.

REPORT OF PRINCIPAL OF CENTRAL HIGH SCHOOL.

Central High School of Porto Rico and
Central Graded School of San Juan,
Office of the Principal,
San Juan, June 1, 1905.

Sir: I have the honor to submit the following report for the Central High School of Porto Rico and the Central Graded School of San Juan:

These schools heretofore have been known as the San Juan High and Graded School, but as the legislature of 1904 changed the name of the high school, constituting it the chief institution of its kind on the island, it was considered advisable to give the graded school some name, in order to distinguish it from the high school, and it was accordingly called the Central Graded School of San Juan.

Prior to the present year the high school had been operated on a double system, there being a Spanish division and an English division. It was not deemed necessary to continue this double organization longer, and at the opening of the present school year the two divisions were united on an English basis. This arrangement has given satisfactory results and will be continued.

Two courses of study, the classical and the scientific, were prepared in conformity with the usual requirements in first-class high schools, and were offered to the pupils for their selection at the beginning of the year. It is a singular fact that the majority of the pupils prefer the scientific course, as they do not wish to study Latin. These two courses will constitute the outline of work for next year also, but the subjects of Greek, German, and geology will be dropped. A commercial course, covering two years' work and including bookkeeping, stenography, typewriting and allied branches, will also be offered next year. The requirements for admission to this course will be the same as to the others.

Considering the number of pupils attending the Central High School, its organization is based upon an entirely too elaborate system. There are at present six teachers who give instruction exclusively in the high school, and two special teachers of drawing and music who devote a portion of their time to this school. There are 7 periods daily, or a total of 35 per week, the total number of periods per week for the six regular teachers being 210. Only 122 periods of this total are occupied, showing that only 58 per cent of the time of the regular teachers is given to actual class work. The total enrollment of pupils this year is 57, of which number 11 are Americans. Eleven pupils have withdrawn during the year, the actual enrollment on June 1 being 45. The per capita cost of operating the high school, on the basis of the total enrollment of 57 pupils, is $158.42, but on the basis of the present enrollment of 45 pupils the average cost per pupil is $200.66. In the United States the average number of pupils to each teacher in the public high schools of cities of 8,000 population and over is 28.7. In the Central High School of this city the average number on the basis of the average daily enrollment is 6.12. The work that is being done this year by the six regular teachers can be done next year by four teachers, with the assistance of the principal. With another teacher to give instruction in the subjects of the new commercial course, the faculty would be composed of the principal and five teachers. I recommend that no instruction in music be given to the pupils of the high school next year, but respectfully advise that the course in drawing under the direction of Miss Charlotte S. Dorman, be continued.

The graduating class this year will consist of four pupils, two of whom are Americans. The first-year class next year will probably be larger than in former years, as the number of pupils enrolled in the eighth grades of the common schools is greater than heretofore. Last year 159 pupils were enrolled in all the eighth grades of the island. During the first term of the present year there were 224.

The average daily enrollment in the Central High School for the first two terms was 49, the average daily per cent of attendance being 97.53. In the Central Graded School the average daily enrollment for the same period was 266, and the average daily per cent of attendance 94.23.

The location of the high school and the graded school will be changed during the approaching vacation months, and I respectfully urge that the high school be installed in a building separate from the graded school. I consider this step advisable, as I do not believe that the Central High School will assume its proper place in the activities of the Porto Rican people until it is established as an independent institution.

A quantity of fine laboratory apparatus of French manufacture, a 3-inch telescope, and a number of good works on scientific subjects in Spanish and French, were found in the offices of the bureaus of public works and of forestry and mining, and, through the courtesy of the gentleman in charge, arrangements were made for the transfer of this property to the account of the department of education. It was then brought to the high school, and is now used by the pupils pursuing the studies of the scientific course.

The fine collection of ornithological, zoological, and geological specimens, inherited from the Instituto of Spanish days, has been rearranged and cleaned, four new cases having been secured from the insular library and added to the number theretofore in use. These specimens are of great value to the pupils and an effort will be made to have them arranged to still better advantage after the establishment of the school in its new quarters.

A large French electric stereopticon of the dissolving view pattern, with 152 slides, was secured for the school, and a series of lectures on the history and natural wonders of America was given during the year. Assistant Commissioner E. W. Lord and Mr. C. H. Ames, of Boston, delivered two of the lectures of this series.

The school library has been rearranged, the books labeled anew, and a neat card catalogue supplied. Magazine holders were also furnished, with a view to preserving the periodicals in good condition. The library has been used freely by the pupils all the year, books having been issued once a week.

Following the plan adopted last year, each pupil of the high school has been required to take part once during the year in literary exercises, consisting of declamations and original essays, held in the assembly hall in the presence of the pupils of both schools. This feature of the school work has been conducted in both the English and Spanish languages. The Borinquen Literary Society of the high school has held two meetings.

On February 22, the annual field day contest between the high school and the normal school was held in Rio Piedras. A programme of 12 events was carried out, the normal school scoring 88 points and the high school 22. Good feeling prevailed throughout the games and a number of the young athletes made creditable records, considering their age and experience. Arbor Day was celebrated in a fitting manner by all the public schools of San Juan, on the San José plaza. Decoration Day was also observed. A number of the pupils of the high school and the graded school gave the operetta "Cinderella in Flowerland," in the theater, on the evening of April 8, under the direction of Miss Carolina W. Field, teacher of music. A sum sufficient to cover the expenses was charged for admission, the total receipts being $98.65 and the total expenses $87.50; the remainder, $11.15, is to be devoted to the purchase of special music books.

The work of the graded school has been as uniform as could be expected under the prevailing conditions. A new course of study, adapted to the public school work on this island, is the crying need at present. Year by year the pupils of each grade have become better prepared to do the work of the following grade, and at the close of this year they will have approached still nearer the standard. I wish to take advantage of this opportunity to commend the good work, professional interest, and friendly spirit of the teachers of both schools.

The work in drawing has been exceptionally good and many of the pupils have demonstrated marked ability in their class room efforts in this subject. The results in music have also been good, in spite of the fact that the pupils had had no previous training.

The office of the schools has been supplied with a telephone, a typewriter, a filing device for correspondence, and a card system for keeping the records of the pupils.

It is to be regretted that the high school will be obliged to change its location, as the present site is really an admirable one, but the change will in no way alter the work of the school, and as it makes the concentration of the higher grades of the San Juan graded schools a task easier of accomplishment, it does not lack certain features of advantage.

In conclusion, I desire to express my gratitude for the support and kindly advice you have ever been ready to grant, and which I have found so essential in my work during the year.

Respectfully submitted.

E. N. CLOPPER,
Principal, Central High School of Porto Rico,
and Central Graded School of San Juan.

The COMMISSIONER OF EDUCATION, *San Juan, P. R.*

EXHIBIT IX.

REPORT OF THE SUPERVISING PRINCIPAL OF INDUSTRIAL SCHOOLS.

DEPARTMENT OF EDUCATION,
INDUSTRIAL SCHOOLS,
San Juan, P. R., June 9, 1905.

SIR: I have the honor to present my second annual report of the industrial schools of Porto Rico.

This year has been marked by a very decided increase in the enrollment as well as in the average daily attendance. By referring to circular letter No. 168, it will be seen that we are among the leaders as regards increase in these two lines this past year. It is an assured fact that the industrial schools have not only struck a popular chord in the minds of the public, but that we are doing most excellent work despite the fact that we do not teach quite all the subjects that are taught in the public schools. Our academic work ranks as high as the work in the corresponding grades of the public schools, and there has been a most decided increase in the character and efficiency of the industrial work in the various departments of the several schools. This is due very largely to a strong "esprit de corps" among the teachers, and to the bringing into the work of quite a few thoroughly trained specialists for their various departments. The interest in the work as displayed by the teachers has been noticeable in their almost constant attendance, even when they were physically in no condition to attend to their duties, but feeling so thoroughly the importance of the work in their own department has led them to be in some cases almost overzealous.

It gives me pleasure at this time to express through you to them my appreciation of the really magnificent work that they have done when we consider in how great a degree we were at times handicapped by existing circumstances.

We have attempted in all the schools to inculcate in the minds of the pupils a love for honest labor, devoid of show and noise. This has been fairly well accomplished in a great many cases. In some cases some of the older pupils have been discontented and left school early in the term, but their places have been filled by smaller pupils. It may be of interest to take up at this time a small detailed report of each school.

The Arecibo School has had a most successful year. The enrollment of pupils has been good, and the pupils have manifested much enthusiasm for their work, both in the academic and the industrial departments. The total enrollment of pupils during the year has been 144, as follows: Boys, 65; girls, 79; average age, 15.52 years.

The department of domestic science has paid much attention to the preparation of native vegetables, and has found 36 food substances, native and imported, which answers the purpose in Arecibo.

Considerable nature study has been carried out by bringing to the school different plants, studying their habits, writing compositions about them, and comparing the edible parts. Children have taken a great deal of interest in this work, and have carried a portion of it to the drawing class. To round out the entire system, 22 subjects, such as sugar, coffee, cocoa, yucca, etc., have been used. Attention has been paid to invalid cookery, and also a little preserving. But Arecibo is not as fortunately located as Mayaguez or Ponce in regard to the variety of fruits.

In the sewing department each child has made an apron and a bag. The classes have made several complete sets of underclothing. Many of the children have made sewing baskets for their own use, having furnished the material for it, and the finished product is certainly very creditable. The list of articles

made in the sewing department covers a wide field, ranging from kitchen aprons to dresses, and from Porto Rican flags to coats for the boys of the industrial school band.

In woodwork it was necessary at the beginning of the year to go back to first principles and instill neatness and accuracy in the minds of the pupils. The showing in this department is very creditable and reflects upon the painstaking teacher. The articles made are altogether useful and some of them quite ornamental. Drawn-work frames for the use of the school have been made, as well as inlaid checker boards, desk furnishings, including blotting pads, inkstands, etc. Some simple bits of furniture, such as Dutch stools and chairs, have been made. In this as in other departments it is not what the student makes at the time of his being in school which is vital but it is the ability to think and apply the skill and knowledge thus gained to other things.

The work in drawing has been very satisfactory, and the results to be shown by this department speak well for the ability of the teacher as well as the skill of the pupils. But this skill is largely in the line of copy work. The children do not have as yet the power of originality. The mechanical drawing shows neatness and accuracy and is altogether creditable to the work taken up which, of necessity, has to be of a simple nature. It will be folly to give these children work in descriptive geometry, or involutes, helix, parabolas, etc., even though they might copy and make presentable drawings, yet they would not understand the principles involved.

In the line of fancy work great gain has been shown this year. Because of its peculiar situation, Arecibo being a sorting and shipping point for coffee, the finer handicrafts, as demonstrated in lace making, embroidery, and drawn work, have been neglected, and when the school was started it was a discouraging revelation to find the pupils so deficient in the most ordinary work of this nature; but the results as shown this year have demonstrated that the pupils are capable of much progress and is a testimonial to the hard work of the instructor.

At the beginning of the year, to satisfy the demand for stenography and typewriting in the various industrial schools, an attempt was made during the last summer to obtain competent Spanish teachers of this subject. It was found impossible to find them, and so the experiment of teaching the work in English had to be resorted to, and I am very happy to say that it has proven successful and satisfactory, taking into consideration the slight knowledge of English on the part of many of the pupils as well as the difficulty of new American teachers understanding how to best impart their knowledge to children of foreign birth, but on the whole the experiment has proven successful.

The pupils have made remarkable progress in their work and have shown great neatness in the execution of their work in typewriting. The school at Guayama, which was opened last September, was greatly handicapped at the beginning because some of the teachers engaged for the various positions had decided not to come to the island, and so it was late in the year before a couple of the departments were opened. Especially was this true of the woodworking department, but under competent instruction I feel that the boys have made most excellent progress. The instructor of leather work of the San Juan school spent a part of the year in Guayama teaching classes and holding a normal class among the teachers, so that upon his departure two of the teachers were able to continue the work. I feel that this branch of industry is one that offers a good field, for, as I have expressed before, home industries, where work of commercial value requiring only a small expenditure for material can be carried on, is one of the important things for the island. Certainly this industry can be carried on at the home of the person doing the work. The shops in the island carry a large assortment of leather, both fine and coarse, and there is always a demand for belts, purses, chatelaine bags, cardcases, cigar and cigarette cases, medicine and traveling cases, magazine covers, and, in fact, the list of articles that can be made from good leather is almost unlimited.

The total enrollment at the Guayama school has been 115, with an average age of $15\frac{8}{10}$ years and comprising three grades, with a preparatory class, as follows: Fifth grade, 41 pupils; sixth grade, 34 pupils; seventh grade, 22 pupils; with a preparatory class, 18 girls; total number of boys, 56; total number of girls, 59.

The attendance of the preparatory has not been as satisfactory as the principal would have liked, only half of the class remaining until the end of the year. But those who have continued in attendance have done excellent work and are or will be on a par with the fifth grade.

At the Ponce Industrial School the academic work has been of a high grade. The total enrollment for the year has been 152. Of this number 70 were girls and 82 were boys. There is a loss of 22 in the enrollment. This has been caused by many of the children coming from poor families, where the small amount of money that these children could earn was necessary to support the family.

The interest in all branches of the work has been most excellent, and under the efficient control of the principal the discipline has been of the very best.

It is the feeling of all the principals that the industrial branches have done more to keep up the attendance than any other feature we can offer. Children the world over like to make things, and it has been proven that one of the best forms of education is to learn things by doing them.

At the beginning of the year a department of leather work was started, but the teacher resigned early in the term, so that it has not been possible to judge of the results. The department of forging was opened in January, and the regular course of simple exercises, involving the use of different tools and fundamental principles of this trade, have been taught in addition to the exercises. The boys, under the direction of the instructor, are building a fence for the Cantera School. It will be 100 feet long when finished and will be a credit to these boys who have worked so hard and faithfully. The material for this fence has been furnished by the local board, and when completed and put in position it will be an example of practical workmanship, to which the boys, as well as their teachers, can point with pride.

One of the difficulties that we encounter in the industrial schools is the physical weakness of many of the pupils and inability on the part of many to do such work as seems necessary for the best development of the class. This is largely due to climatic and hereditary influences.

A great deal of time and energy, as well as a small amount of money, has been expended by the principal in beautifying the grounds. We feel that considerable credit is due the janitor for his interest and faithfulness in his work.

The school at Mayaguez has passed through a year of special interest as well as trial. Many of the pupils returning with a false idea of what the industrial school was trying to do and finding that the policy of the school was for more solid work and less "fiestas" and shows, they naturally dropped out, and in some cases their places were filled by smaller and younger pupils.

The academic work has been very satisfactory and quite up to the standard. The general distaste to labor with the hands which prevails among the wealthier people, and in fact in all families accustomed to keep peons, prevents many children from such families entering the industrial school, and we feel that we still have a number of years of missionary work teaching the dignity of labor as well as the "Three R's."

The work among the girls shows an advance this year in all branches of domestic arts. We have a much better teacher of drawn work for this department, and the teacher of cookery and plain sewing was one of the best which could be obtained in the States. At this point it would be only justice to record our thanks to Mr. May, Mr. Barrett, and the other Americans connected with the experimental station for their many courtesies to the industrial school. It has enabled Miss Marcus, the instructor in cookery, to carry out many valuable experiments with native products, and to show to these children and their parents what a wealth of supplies heretofore untouched are in abundance at their very doors.

The total enrollment during the year has been 166—82 girls and 84 boys; average age of boys 14.40, of girls 14.29; average classes, A, 31; B, 26; C, 30; preparatory class, 79. Mayaguez has had an excess of preparatory or younger pupils, and the character of the work both in drawing and industrial branches has been suited as far as possible to the pupils, and considering their ages and physical abilities, the results are all that could be expected.

We feel that the teaching force of the various schools has been about equally divided; that each school has had its proportion of strong teachers as well as of those somewhat weaker. It has been a most interesting study to observe and note the various characteristics and strong points of each school.

The San Juan school has had a most successful year, for, by certain changes in the transfer of teachers, resignations, and so forth, some weak points have been strengthened, and on the whole the work has been of a higher grade and type than the year before.

Three of our schools, viz, San Juan, Ponce, and Mayaguez, have been equipped with power and the following machinery for the better handling of lumber and for turning work: From F. E. Reed & Co., wood-turning lathes; Hobbs Manufacturing Company, planers; the American Wood-Working Company, circular saws and band saws. This small equipment has been of great value in facilitating our work.

The introduction of machinery has proven a great attraction as well as a means of developing skill, lightness of touch, and accuracy among the boys who have taken wood turning. It has also been of great assistance to the bench work in wood, saving much time in the preparation and reducing of stock to proper dimensions.

The department of drawn work and embroidery has been strengthened by the new teacher, who is one of the most expert workers that could be found in San Juan; and the showing for the year will rank second to none among even the professional workers of the island. This might also be said of some of the other schools.

The continuation of the leather department, but along different lines, has proven attractive and helpful. Some of our students have developed a skill in the making of small articles of leather, such as belts, pocketbooks, card-cases, etc., that has been equal to a great deal of the commercial work turned out in the States. We have felt very hopeful of such an industry as this, feeling sure that after a couple of years the students would be able to place upon the market a line of articles having a first-class commercial value.

The total enrollment of the San Juan School is as follows: Boys, 73; girls, 113; total, 186. Average age, 15.5 years. Classes: A, 31; B, 63; C, 36; D, 56.

The printing division of the San Juan school was started last year, and out of the first class 33⅓ per cent have remained to continue the work. At the present time two of last year's boys have been selected by Mr. Green to become regular indentured apprêntices in the printing office, learning all branches of the printer's art, and at the same time earning money toward their support. The work done by boys, as shown at the exhibition last year and the one to be held this year, has been of a very creditable nature and demonstrates that the experiment of half-day school time and half-day work in the printing office is capable of producing good results. The system is very different from that of the old apprentice system, in which the boy at the end of the first year has accomplished little more than cleaning the type and presses. The system in practice has been along the modern ideas of manual training, and as soon as a boy is able to do a simple piece of work well he is given something a little more difficult. We feel that four years of school and printing office will turn out good journeymen printers, able to take their places in any Spanish or English office and do work that is a credit to themselves as well as the school from which they came.

Respectfully submitted.

FRANK H. BALL,
Supervising Principal of Industrial Schools.

The COMMISSIONER OF EDUCATION, *San Juan, Porto Rico.*

REPORT OF THE COMMISSIONER OF THE INTERIOR FOR PORTO RICO.

REPORT OF THE COMMISSIONER OF THE INTERIOR.

DEPARTMENT OF THE INTERIOR OF PORTO RICO,
OFFICE OF THE COMMISSIONER,
San Juan, September 13, 1905.

The Honorable the SECRETARY OF THE INTERIOR.

SIR: In compliance with instructions for this Department, as shown in your letter of June 7, 1905, to the governor of Porto Rico, which reads as follows:

I have the honor to invite your attention to section 24 of the act of Congress approved April 12, 1900 (31 Stat. L., 77), entitled 'An act temporarily to provide revenue and a civil government for Porto Rico, and for other purposes,' which provides as follows:

'That the commissioner of the interior shall superintend all works of a public nature, and shall have charge of all public buildings, grounds, and lands, except those belonging to the United States, and shall execute such requirements as may be imposed by law with respect thereto, and shall perform such other duties as may be prescribed by law, and make such reports through the governor to the Secretary of the Interior of the United States as he may require, which shall annually be transmitted to Congress.'

I have to request that you will cause this matter to be brought to the attention of the commissioner of the interior, with the request that he will prepare and forward through you for my consideration, at a date not later than October 1, 1905, a report of the matters pertaining to Porto Rico with which he is charged under existing laws. It is also desirable that he embody in his report a detailed statement brought down to date of the character, quantity, and location of crown lands, the ownership of which the United States succeeded to by virtue of the treaty of Paris, together with a statement of the quantity and location of all unreclaimed or swamp lands in Porto Rico. This report should cover the period from July 1, 1902, to the date of its rendition. In this connection it is suggested that statistical statements embodied in the report should not be given from estimates where it is possible to obtain the same from original sources.

It is deemed proper to add that in the interest of economy it is desirable that the report should be as brief as circumstances will permit, and that all unimportant exhibits be omitted, as well as photographs not intended to show the condition and industrial progress of the Territory.

The manuscript of the report should, as far as practicable, be typewritten, free from interlineations, properly paged, and provided with a table of contents. All exhibits should be suitably marked and referred to by such marks wherever mention is made of them in the body of the report.

It is desirable that the report of the commissioner of the interior of Porto Rico be submitted to the Department within the time above specified, in order that proper consideration may be given to the important subjects therein requiring attention in the annual report of the Secretary of the Interior to the President.

I have the honor to make the following report, beginning with the statement that my own connection with this Department dates from February 9 of this year:

BUREAU OF PUBLIC WORKS.

The same now under maintenance by the insular government have an aggregate length of 662 kilometers, and the accompanying table, No. 1, gives some details of maintenance disbursements deemed necessary.

TABLE 1.—*Expenditures insular roads year ended June 30, 1905.*

Road No.	Road divisions, etc.	Length.	Broken stone for macadam.				
			Stone delivered.			Stone placed.	
			Held over.	New.	Cost.	Quantity.	Cost.
	SAN JUAN DISTRICT.	*Kilos.*	*Cub. m.*	*Cub. m.*		*Cub. m.*	
1	San Juan-Cayey	61	1,050	11,109	$23,914.62	6,417	$5,541.19
2	Cataño-Vega Alta	27	.....	1,990	2,562.55	1,558	1,125.67
10	Reyes Catolicos-Corozal	17	1,320	1,518	2,192.40	2,190	1,413.65
9	Bayamon-Comerio	19	100	350	560.00	.....	.....
5	Caguas-Humacao Playa	39	.....	3,980	6,169.00	3,920	3,586.54
7	Rio Piedras-Humacao Playa	74	400	2,248	2,014.22	2,548	1,982.41
6	Arecibo-Tallones	43	.....	1,577	1,030.06	1,155	708.83
11	Manati-Ciales	25	800	1,266	584.56	1,663	1,449.16
7	Arroyo-Humacao	13	.....	158	176.97	22	.....
	PONCE DISTRICT.						
1	Cayey-Ponce	69	75	6,927	9,270.00	4,071	3,237.30
4	Cayey-Arroyo	34	.....	2,490	4,126.30	1,612	1,248.87
6	Ponce-Tallones	39	256	2,175	2,253.60	1,224	967.24
3	Ponce-Guayama	41	20	5,315	3,819.92	3,534	839.42
	MAYAGÜEZ DISTRICT.						
2	Aguadilla-Camuy	42	1,815	1,560	1,436.20	2,673	1,734.55
8	Aguadilla-Lares	38	675	5,147	6,699.73	5,640	4,059.40
2	Mayaguez-Añasco	9	.....	752	1,122.00	564	344.08
14	Mayaguez-Las Marias	27	.....	3,076	4,034.36	2,426	1,679.40
3	Mayaguez-San German	20	.....	2,323	3,896.80	1,053	810.97
3	San German-Yauco	25	300	1,281	1,599.20	1,106	621.17
		662	6,811	55,242	77,462.49	43,376	31,349.85

Road No.	Road divisions, etc.	Length.	Cost of inspection.	Miscellaneous expenditures.	Total cost.	New bridges, culverts, and repairs on old.
	SAN JUAN DISTRICT.	*Kilos.*				
1	San Juan-Cayey	61	$2,472.75	$4,146.90	$36,075.46	$930.39
2	Cataño-Vega Alta	27	981.00	1,297.81	5,967.03	430.66
10	Reyes Catolicos-Corozal	17	453.00	586.95	4,646.00	338.09
9	Bayamon-Comerio	19	1,316.50	840.24	2,716.74	1,630.20
5	Caguas-Humacao Playa	39	1,453.00	2,236.75	13,445.29	1,237.16
7	Rio Piedras-Humacao Playa	74	3,909.00	3,240.15	11,145.78	4,137.38
6	Arecibo-Tallones	43	1,942.16	2,545.68	6,226.73	.....
11	Manati-Ciales	25	1,017.50	591.94	3,643.16	191.83
7	Arroyo-Humacao	13	334.00	1,302.02	1,812.99	86.02
	Pending contracts and miscellaneous expenses.	.....	.....	.....	.....	3,191.61
	PONCE DISTRICT.					
1	Cayey-Ponce	69	3,978.26	1,655.44	18,141.00	1,126.04
4	Cayey-Arroyo	34	1,429.50	2,589.43	9,294.10	188.60
6	Ponce-Tallones	39	1,455.00	3,417.25	8,093.09	1,039.84
3	Ponce-Guayama	41	729.00	1,532.06	6,920.40	.....
	Pending contracts and miscellaneous expenses.	.....	.....	.....	.....	861.75
	MAYAGUEZ DISTRICT.					
2	Aguadilla-Camuy	42	1,590.87	1,385.81	6,147.43	679.50
8	Aguadilla-Lares	38	2,503.20	1,829.84	15,092.17	3,750.25
2	Mayaguez-Añasco	9	422.00	646.09	2,534.17	501.60
14	Mayaguez-Las Marias	27	1,238.19	1,236.37	8,188.32	301.74
3	Mayaguez-San German	20	1,315.00	1,108.47	7,131.24	879.00
3	San German-Yauco	25	428.00	1,048.10	3,696.47	.....
	Pending contracts and miscellaneous expenses.	.....	.....	.....	.....	502.54
		662	28,967.93	33,237.30	171,017.57	22,003.60

The total appropriation voted for this year's maintenance amounted to $190,680, the aggregate of the specific amounts to be applied to the necessary repairs on each road and to the repairs on old and construction of new bridges in the three engineering districts.

The aggregate of all moneys spent was $193,021.17—an amount in excess of the appropriation by $2,341.17. The excess was obtained by transferring to repair and maintenance of roads a portion of what had been saved in office force salaries since my assumption of office to June 30. The remainder of this saving ($4,073.12) had unfortunately already been turned back into the treasury of the island.

Before making any analysis of the table of expenditures, I would like to state that on my taking office the field work on the roads was directly under 3 district engineers, respectively located in San Juan, Ponce, and Mayaguez, to whom 17 sobrestantes, or upper foremen, reported. Under the latter worked 35 capataces, or under foremen, each capataz looking after some 20 kilometers of road. The "permanent," or "caminero," system had already been abolished, and the system of hiring men to do the work as it was found necessary had gone into effect at the beginning of the fiscal year.

In March, 1905, the above-described superintendence was materially modified, and on the resignation of the 3 district engineers, with their clerks, and the 17 sobrestantes their combined duties were turned over to 7 "traveling inspectors," who thus come in direct contact with the 35 subordinate foremen, over whom they have absolute control. The inspectors' time is practically spent in patrolling their roads and in keeping an eye on their subordinates, to whom they assign each particular piece of work, and they alone are held responsible.

At the same time was started a general system of daily reports to be made by the 35 capataces to the superintendent of public works. These reports are postal cards already printed, so that the insertion of a dozen words or so in the proper place will tell exactly what the foreman is doing with his men and the cost of the day's work; also whether or not the inspector has been over that part of the road system. In case there is no work on hand the foreman reports, "no men, road in good condition." At the same time the inspector sends in his daily report, which is supposed to state what he saw and not what he was told.

These cards, when received in San Juan, are studied and the gist of their contents transferred to sheets of paper that hang on boards in the commissioner's office. Each sheet will carry two months' work, and the reports are carefully examined every day by someone in authority. This daily double report system, in conjunction with its glaring visibility inviting examination and criticism, checked by the frequent inspection trips made over the roads by the upper officials, has produced very good results—so much so that, although only operative during the last three months of the fiscal year of 1904–5, the saving has been $12,372.16, which amount was mostly turned into broken stone for the benefit of road No. 1 between San Juan and Caguas, the contracts being available for the following year. The full benefit of these changes is looked for in the year ending June 30, 1906, and it is now certain that out of the $200,000 appropriated for outdoor work at least some $60,000 will be saved for the purpose of replacing certain important bridges, one at Carolina and the other over the Caguitas

River, near Caguas, whose rehabilitation otherwise would have had to wait for a special appropriation.

Bids, plans, and specifications for the new iron work for these bridges are now being advertised for in American and Porto Rican papers, and in the meantime whatever engineering work can be accomplished on the island is already under way.

An analysis of Table No. 1 gives us reasons to believe that in future great economies can be made in a more judicious use of broken stone—in a more extensive use of gravel, where available, instead of the more expensive broken stone—and particularly in those expenditures figuring under the head of miscellaneous, which apparently cover a good deal of unnecessary or wasteful work.

It is only fair to note that out of the $22,003.60 spent on bridges and culverts, $12,000.05 were spent on new or practically new construction.

Miscellaneous expenditures amounting to $33,277.30 were largely the result of allowing unwatched subordinates the right to hire men, often their friends, to "potter around." A large part of the $12,372.16 saved in the last three months of the year is due to a closer scrutiny of these last expenditures. Landslides, and to a minor extent the cleaning of ditches, of course figure in this item, and it is estimated that $6,000 will do such work, provided no widespread havoc is produced by cloudbursts or by a cyclone.

A comparative table is here presented, throwing some light on the figures for 1903, 1904, 1905, and what is hoped for in the year ending June 30, 1906.

TABLE No. 2.—*Comparative expenditures.*

Year ending June 30—	Kilometers under maintenance.	Total cost of maintenance.	Cost per kilometer.	Broken stone used per kilometer.
				Cubic meters.
1903	445.1	$176,783.07	$397.18	62.5
1904	518.2	193,737.37	373.87	58.3
1905	662	193,021.17	291.57	66.5
1906, probable expenditures	662	125,372.00	189.39	77.0

No year prior to 1903 is shown, so as to eliminate as much as possible in the comparison expenditures due to the cyclone of 1899. It is somewhat gratifying to say that the cost of maintenance per kilometer has come down from $397.18 in 1903 to $291.57—a drop of $105.61. There is practically no doubt that the figures lower down opposite "1906, probable expenditures," will fairly well represent those of the present year, bringing down the cost of maintenance per kilometer to $189.39.

So that it may not be thought that this may mean little more than the practice of economies amounting to neglect of the roads, your attention is directed to column 5 of the aforesaid comparative table, showing the respective amounts of broken stone per kilometer put and to be put on the road system. As may be seen, the present year is credited with a marked increase in broken stone, and in this island good roads mean broken stone.

As to the cost of maintenance in the future, it is believed that if the people of Porto Rico wish to continue to have the use of good macadam highways, such as they have at present, they can not expect to pay for their maintenance much less than $180 per kilometer.

Figuring on a basis of 50 cubic meters of broken stone as an average per kilometer the present 662 kilometers would foot up as follows:

	Amount.	Percentage of total cost.
		Per cent.
Cost of broken stone and placing the same	$71,663	61.1
Salaries of traveling inspectors and expenses	11,340	9.6
Salaries of foremen	13,512	11.5
Miscellaneous expenditures	20,800	17.8

Or about $177.21 per kilometer.

These results presuppose, however, the purchase of a traction engine and train and a steam crusher in order to reduce the present extraordinary high cost of the broken stone over the first 18 kilometers of road No. 1, largely due to the high charges of transportation in carts.

The question naturally arises, Why should it cost even as much as the lowest figure, inasmuch as the same is not low?

Jamaica has been instanced as an island where the conditions are supposed to be somewhat similar, and the low figures given by the Jamaica Handbook for repairs on roads have been quoted in a way not exactly fair to Porto Rico.

Jamaica, somewhat larger than this island, with an estimated population of nearly 800,000, has at present some 1,930 miles of what are called main roads. The island is more mountainous than Porto Rico, and the roads are, generally speaking, niched out of white marl or coralline limestone hills. Ruts and holes that form in the roads are simply filled up with this marl or soft limestone, which is abundant and near the surface, and, generally speaking, it can be picked out near where repairs are needed. On account of such natural foundations the roads to a great extent, even when neglected for some time, do not become impassable—they simply get ragged.

Some four years spent in Jamaica enables me to state that conditions in that island are therefore far more favorable to cheap road maintenance than here, and I furthermore add that the Jamaica roads as a rule can not compare with ours, either in general features of construction, such as width and grades, or in the attention paid to first-class maintenance. As far as maintenance is concerned, it must be added that the Jamaicans are doing precisely what we would do had we the same physical advantages—that is, they are only trying to maintain a road system good enough for a population not particularly well to do.

The conditions are entirely different with us. Our roads, even when in the hills, are nearly altogether in a loam, clay, or decomposed rock (tosca) as a foundation. The traps, tufas, etc., in this island weather very deep, forming a top layer of soft, easily crushed material with a top covering of loam or clay. The result is, and it can not be too much emphasized, that our roads seldom have a good natural foundation, and in order to stay good have to have macadam, which means broken stone, which means money. These roads, if not in very good condition, soon become bad, and when neglected for a short time tend to become impassable in the wet season. Such roads when not well maintained refuse to stay in the "good enough" class.

It is also to be noted that the steep grades of the Jamaica road system, in conjunction with wise legislation, have tended to limit the loads imposed on wheels, and such an efficient instrument in cutting up roads as a wheel, often with a 2½-inch tire carrying 1 ton, is unknown. Lower wages and longer hours also obtain in Jamaica.

The preceding explains, in my opinion, why we shall have to pay nearly $180 in order to accomplish what the Jamaica government seems to do, as well as I can make out from their handbook, with about $100.

In addition to the 662 kilometers under insular maintenance, there are 53.8 kilometers of road built since 1898 and prior to June 30, 1904, whose maintenance was later on turned over to the local elective boards of road supervisors. The results have been most unfortunate, and these stretches of road should be taken back under the care of this department.

The aforesaid stretches are as follows:

	Kilos.		Kilos.
Consumo-Maricao	7.0	Caguas-Aguas Buenas	9.0
Mayaguez-Cabo Rojo	5.8	Naguabo-Naguabo Playa	3.0
Caguas-San Lorenzo	8.0	Lajas-San Germán	4.0
Cidra-Las Cruces	8.0		
Barranquitas-Aibonito	9.0	Total	53.8

TRUST-FUND WORK.

There is added Table No. 3, showing what has been done up to June 30, 1905, with this fund. We are at present at work on the Jayuya-Alto de la Bandera, Barros-Barranquitas, Humacao-Yabucoa, and Arroyo-Patillas roads.

TABLE 3.—*Construction and repair of roads and bridges under "trust fund," June 30, 1905.*

Designation.	Appropriation.	Amounts disbursed to June 30, 1904.	Amounts disbursed during 1904–5.	Balance June 30, 1905.	Length of road under construction or repair under allotment.	Built to June 30, 1904.	Built during 1904–5.	Length to be built.	Remarks.
					Km.	*Km.*	*Km.*	*Km.*	
San Lorenzo-Caguas	$15,000.00	$15,000.00			9.0	8.0			
Yabucoa-Maunabo road	43,000.00	38,000.00	$4,560.28	$439.72	9.0	8.0	1.0		
Arecibo-Ponce:									
Arecibo-Bacupey	42,726.00	42,726.00							
Defendini, 15 kilometers	90,000.00	90,000.00			22.0	22.0			39.2 kilometers built under other allotments under military government.
Adjuntas-Utuado	79,000.00	79,000.00							
Tallones	85,000.00	85,000.00							
Manati-Ciales, lot No. 4	42,357.19	42,357.19			4.5	4.5			8.5 kilometers built under other allotments under military government.
Caguas-Humacao road	65,000.00	65,000.00			39.0	39.0			Road built by military government and afterwards repaired under this allotment.
San German-"Pezuela" bridge	16,500.45	11,716.62	4,783.83		6.0	4.0	2.0		
"Mavilla" River bridge	15,000.00	15,000.00							Completed except railing.
Fajardo-Naguabo Playa road	22,000.40	21,999.78		.62	20.0	9.5		10.5	
San Sebastian-Lares road	92,002.00	78,000.91	14,001.09		14.8	11.0	3.8		
Yauco-Sabana Grande	69,282.50	67,524.02	1,553.11	205.37	16.5	15.0	1.0		
Retaining wall at "Caniaco"	17,407.00	17,407.00							Completed.
Right-of-way damages	2,637.89	2,637.89							
Bayamon-Comerio road	120,000.00	120,000.00			14.5	14.5		8.0	3.8 kilometers built under other allotments under military government.
Mameyes-Fajardo	36,000.00	35,087.27	912.73		18.0	11.7	.3	6.0	
Ponce-Guayama road	50,000.50	34,537.15	15,463.35		56.0	20.0	14.0	22.0	
Camuy-Aguadilla	49,000.00	40,349.12	6,145.65	2,505.23	42.3	36.5	5.3	.5	
Naguabo-Naguabo Playa	4,000.00	4,000.00			3.0	3.0			
"Portugues" River Bridge	4,250.00	4,250.00							Completed.
Mayaguez-Cabo rojo road	12,500.00	12,500.00			5.8	5.8			
"Anasco" River Bridge	8,500.00	7,644.29	657.97	197.74					Do.
Vega-alta road	6,000.00	5,000.00	1,000.00		6.0	2.5	.7	2.8	
San German-Lajas	4,500.00	4,373.34	126.66		4.0	4.0			
Arroyo-Partillas road	10,000.00	1,204.85	7,007.42	1,787.73	7.5	.5	4.0	3.0	
Aibonito-Barranquitas	21,000.00	15,000.00	6,000.00		11.8	9.0	2.8		
Mayaguez-Consumo	20,500.00	13,947.46	6,552.54		14.0	8.0	6.0		
Las Marias road	21,000.00	3,018.86	15,914.37	2,066.77	4.5	.7	3.8		8 kilometers built under military government.
Consumo-Maricao	13,000.00	2,982.16	9,412.53	605.31	10.0		7.0	3.0	
Sabana Grande-San German	10,000.00	3,391.14	6,608.86		8.2	1.8	5.7	.7	

TABLE 3.—*Construction and repair of roads and bridges under "trust fund," June 30, 1905*—Continued.

Designation.	Appopriation.	Amounts disbursed to June 30, 1904.	Amounts disbursed during 1904–5.	Balance June 30, 1905.	Length of road under construction or repair under allotment.	Built to June 30, 1904.	Built during 1904–5.	Length to be built.	Remarks.
					Km.	*Km.*	*Km.*	*Km.*	
Morovis Branch-Manaticiales....	$8,900.00	$22.65	$8,877.35	.....	11.7	6.0	5.7	.....	6 kilometers graded under military government and with regular budget.
Rio Piedras-Trujillo alto	8,000.00	3,910.24	4,013.48	$76.28	7.8	1.7	1.8	4.3	
"Manati" River Bridge.....	15,223.80	.....	6,785.65	8,438.75	.....	.....	.....	.....	Under contract.
"Coamo" Springs road	2,000.00	.....	1,914.90	85.10	5.0	.....	3.0	2.0	
Jayuya-Alto Bandera.....	32,000.00	.....	14,425.82	17,574.18	19.0	.....	4.5	14.9	
Barros-Barranquitas.....	37,000.00	.....	7,995.13	29,004.87	15.0	.....	2.5	12.8	
Humacao-Yabucoa	25,000.00	.....	13,096.80	11,903.20	15.0	.....	4.0	10.5	
Comerio-Naranjito..	5,000.00	.....	5,000.00	.....	5.0	.....	4.0	1.0	
Total	1,220,287.73	982,587.94	162,808.92	74,890.87	424.9	246.7	82.9	102.0	

RECOMMENDATIONS.

The island needs most imperatively additional roads, particularly in the coffee districts, and the following table, No. 4, gives what in the judgment of this department should be built in the next four years.

TABLE No 4.—*Proposed construction during next four years.*

Road.	Approximate length.	Estimated cost to complete road.	Road.	Approximate length.	Estimated cost to complete road.
	Kms.			*Kms.*	
Lares-Adjuntas	27	$90,000.00	Mameyes-Luquillo	6	$14,000.00
Las Marias-Lares	18	72,000.00	Naguabo-Fajardo	6	12,000.00
Jayuya-Barros	27	150,000.00	Trujillo-Alto Gap	4	8,000.00
Barros-Corozal	23	92,000.00	Maricao Gap	4	12,000.00
Comerio road	8	55,000.00	Ciales-Juana Diaz	42	168,000.00
Aguirre-Guayama	11	15,000.00			
San Lorenzo Gap	1	5,000.00	Total	178½	700,000.00
Adjuntas change	1½	7,000.00			

There should also be spent during the same interval $400,000 in new bridges and in the replacing of many of the old wooden bridges by steel or masonry structures.

The above work distributed over four years means the expenditure of only $275,000 a year, a sum easily raised by a loan or possibly secured from the surplus that seems to be on the increase in the insular treasury. The intention of this department would be, in case such sum were put into its hands, to spend during the first year $175,000 on new roads, as follows:

Lares-Adjuntas	$40,000	San Lorenzo Gap	$5,000
Jayuya-Barros	49,000	Trujillo-Alto Gap	8,000
Corozal-Barros	25,000	Adjuntas change	7,000
Aguirre-Guayama	15,000		
Mameyes-Luquillo	14,000	Total	175,000
Maricao Gap	12,000		

and in bridges:

Reyes Católicos	$40,000
Caguas (Rio Grande)	25,000
Utuado and other bridges on Adjuntas road	35,000
Total	100,000

It can not be too strongly emphasized that the above figures are but approximate, both as to distances and costs. Surveys as yet do not exist, and costs have been based on knowledge of the topography and comparison with the cost of roads in similar localities in the island.

A potent cause of wear and tear in the insular roads is the narrow tire found on two-wheeled carts, often carrying as much as 4,000, although limited by law to but 3,000 pounds. Such tires run from 2½ to 3½ inches in width.

If the Ohio law, for instance, were applied to carts with such a maximum load, these tires would be 5 inches in width. Legislation is needed that will enforce such changes, the same to take effect four years from date.

BUREAU OF INSULAR TELEGRAPH.

A comparative statement in tabular form, Table No. 5, is added, giving cash receipts for the fiscal years 1903–4 and 1904–5. It shows a gratifying increase in cash of $5,876.07, or 19.6 per cent over the

preceding year, largely due to the increase in the general business of the island. An election year is responsible for the great increase in free messages.

TABLE 5.—*Statement showing the amount of cash receipts and the computed value of free business handled by the bureau of insular telegraph during the fiscal years 1903–4 and 1904–5; also showing the increase in both classes of business for the latter over the former fiscal year.*

Month.	1904–5.		1903–4.		Increase for fiscal year 1904–5.		
	Cash receipts.	Computed value of free messages.	Cash receipts.	Computed value of free messages.	Cash receipts.	Computed value of free messages.	Total.
July	$2,682.97	$1,655.53	$2,225.10	$1,243.02	$457.87	$412.51	$870.38
August	2,395.70	1,722.41	1,752.55	1,174.37	643.15	548.04	1,191.19
September	2,785.15	2,373.67	1,971.85	1,466.30	813.30	907.37	1,720.67
October	3,242.37	6,871.85	2,547.95	1,607.22	694.42	5,264.67	5,959.05
November	3,158.95	4,807.38	2,500.57	1,279.41	658.38	3,527.97	4,186.35
December	2,748.43	2,017.66	2,740.90	1,272.08	7.53	745.58	753.11
January	2,862.01	2,163.74	2,601.65	1,226.91	260.36	936.83	1,197.19
February	3,130.92	2,221.86	2,775.48	1,306.50	355.44	915.36	1,270.80
March	3,438.02	2,212.34	2,798.67	1,490.80	639.35	721.54	1,360.89
April	3,105.02	2,148.45	2,741.65	1,577.25	363.37	571.20	934.57
May	3,024.14	2,300.10	2,535.41	1,592.13	488.73	707.97	1,196.70
June	3,282.11	2,044.00	2,787.94	1,739.01	494.17	304.99	799.16
Total	35,855.79	32,538.99	29,979.72	16,975.00	5,876.07	15,563.99	21,440.06

On June 7 new instructions were issued to telegraph operators defining what constituted a free message. It is known that this change has discouraged many who formerly abused the privilege. In spite of this, though, free messages show a tendency to increase more than ever, as shown in the returns, as follows:

	Cash receipts.	Free messages.
July, 1903	$2,215.10	$1,243.02
July, 1904	2,682.97	1,655.53
July, 1905	3,037.81	2,245.38

The judiciary and the police are largely responsible for the bulk of this free activity.

To correct this abuse, and at the same time increase somewhat the revenue of this bureau, measures are now being taken, and on October 1, 1905, with the exception of the insular police, the officers of the United States Army and Navy and the members of the legislature, on legislative business, the other government departments and bureaus will be charged half rates on all messages. As this money will have to come out of the various contingent funds, the tendency will be, at any rate, to discourage a verbosity not in keeping with correct telegraphic traditions.

The budget for the year amounted to a grand total of $58,800, of which $45,629.65 were expended in salaries, $11,939.92 in contingencies, and unexpended $1,230.43 were returned to the treasury. There are 832 kilometers of wire and 46 stations.

DIVISION OF PUBLIC LANDS.

The public lands, as now known, seem to date back to a decree of the King of Spain, dated January 14, 1778, where such lands were given to the people of the island as a whole, in exchange for the keep-

ing up by them of seven battalions of militia and three armed brigs. Later on, in 1811, a certain Junta de Terrenos Baldíos turned these lands over to private individuals, under the condition that tenure of the same should imply cultivation, and that the lands should revert to the people in case of failure on the part of the individuals. Some land was thus taken up. What was left and what reverted to the island make up the so-called public lands.

As the lands apparently have never been surveyed and have only been examined and classified to a limited extent, nothing exact can be affirmed as to their value and, what is worse, even as to their exact location. It is supposed that some 80,000 acres still exist in not less than 500 lots. In a few cases surveys of adjacent properties tend to fix some of the boundary lines.

An appropriation of at least $25,000 is needed to make such a survey, which should include an examination and classification with a view to fix values. During the three last months of the fiscal year Mr. Armando Morales, chief of the division, has examined the important tracts known as the "Caño de los Tiburones" and several large and important tracts in the neighborhood of Yauco, and has made reports on the same, which, at any rate, give a much clearer idea relating to what is thought to be the property of the island in these particular places. Without an actual survey, though, such information at the best is unsatisfactory.

Mr. Morales has also made a general report on the public lands, and a map, here included, showing their probable location and shape. What is certain is that these lands are squatted on, and have been encroached on every year by adjacent proprietors. Since the American occupation attempts seem to have been made to make leases, the result being unsatisfactory, for so far only two lots have been thus leased.

BUREAU OF DOCKS AND HARBORS.

But three ports—San Juan, Ponce, and Mayaguez—collect fees. Table No. 6 shows what has been collected in the year ended June 30, 1905.

TABLE No. 6.—*Harbor fees in ports San Juan, Ponce, and Mayaguez, fiscal year ended June 30, 1905.*

Date.	San Juan.	Ponce.	Mayaguez.	Total.
1904.				
July	$2,053.98	$153.01	$159.75	$2,366.74
August	1,365.01	114.47	109.00	1,588.48
September	1,282.70	195.68	186.24	1,664.62
October	1,102.10	321.85	211.48	1,635.43
November	1,386.82	332.58	123.18	1,844.58
December	1,222.34	339.94	171.28	1,733.56
1905.				
January	1,692.12	202.20	125.53	2,019.85
February	1,743.47	264.86	211.56	2,219.89
March	1,487.16	455.30	174.29	2,116.75
April	1,823.72	166.63	104.77	2,095.12
May	1,370.69	352.27	163.68	1,886.64
June	1,415.44	349.48	172.07	1,936.99
Total	17,945.55	3,248.27	1,912.83	23,106.65

Total collected year ended June 30, 1905	$23,106.65
Total collected year ended June 30, 1904	21,369.05
Increase	1,737.60

Table No. 7 gives particulars as to number, character, and tonnage of vessels.

TABLE No. 7.—*Number, character, and tonnage of vessels entering San Juan, Ponce, and Mayaguez during year ended June 30, 1905.*

	San Juan.		Ponce.		Mayaguez.		Total steam.	Total sail.
	Steam.	Sail.	Steam.	Sail.	Steam.	Sail.		
American:								
Vessels	184	35	78	32	61	19	323	86
Tonnage	522,629	25,982	234,673	18,566	189,092	5,088	946,394	49,636
Foreign:								
Vessels	129	25	123	36	73	31	325	92
Tonnage	367,493	4,419	277,654	6,037	132,459	4,215	777,606	14,671
American war vessels	158	.....	3	.....	9	.....	170	.....
Foreign war vessels	4	.....	.....	.....	1	.....	5	.....
Other vessels	14	.....	.....	.....	.....	.....	.....	.....

NOTE.—This statement does not include the visits of vessels exclusively in the coastwise trade of the island of Porto Rico. Of these we have 3 small steamers and 54 sailing vessels ranging from 6 to 69 tons.

TABLE 8.—*Maintenance and repair of public buildings, fiscal year 1904–5.*

Object.	Appropriation.	Transfers from miscellaneous expenses, subject to approval of governments.	Transfers, harbor improvements.	Disbursements to June 30, 1905.	Agreements and accounts payable.	Balance June 30, 1905.
Preservation, care, and repair	$15,001.00	.....	.....	$13,568.93	$1,395.50	$36.57
Water	16,000.00	.....	.....	12,211.80	.....	3,788.20
Electric light	6,000.00	.....	.....	5,700.55	.....	299.45
Expenses, executive mansion	12,000.00	.....	.....	12,000.00	.....	.....
Repairs, Insane Asylum	1,500.00	.....	.....	1,496.92	.....	3.08
Installation and repairs for printing office, S. F. Barracks	.....	$1,000.00	.....	1,000.00	.....	.....
Repairs, police quarters, S. F. Barracks	.....	500.00	.....	499.88	.....	.12
Repairs, Insane Asylum	.....	5,500.00	.....	.....	.....	5,500.00
Repairs, Girls' Charity School	.....	2,000.00	.....	7.50	.....	1,992.50
Repairs, Boys' Charity School	.....	1,750.00	.....	13.46	.....	1,736.54
Repairs, Leper Colony	.....	750.00	.....	.....	.....	750.00
Trust fund—repairs, capitania, Ponce	.....	.....	$600.00	505.58	.....	94.42

TRUST FUND, NO FISCAL YEAR.

Repairs, military barracks, Ponce	$23,000.00	.....	.....	$20,112.96	.....	$2,887.04
Repairs, Blind Asylum, Ponce	5,000.00	.....	.....	4,999.30	.....	.70
Repairs, district court building, Arecibo	2,000.00	.....	.....	97.50	$1,582.00	320.50
Building district jail, Arecibo	35,000.00	.....	.....	593.12	.....	34,406.88

TABLE 9.—*Maintenance and repair of public buildings; preservation, care, and repairs.*

[Appropriation, $15,001.]

Designation.	Labor.	Supplies and repairs.	Total expended.	Agreements and accounts payable.	Balance.
Contingent expenses	$1,754.16	$263.20	$2,017.36	.....	.....
Intendencia	256.47	690.62	947.09	$745.50	.....
Fortaleza No. 3	753.41	801.74	1,555.15	.....	.....
Insular police barracks, Pta. de Tierra	5.37	18.20	23.57	.....	.....
Diputacion	407.22	1,656.07	2,063.29	.....	.....
Boys' Charity School	142.24	626.16	768.40	.....	.....
Leper colony	75.75	148.14	223.89	.....	.....
P. W. stables	15.74	269.44	285.18	.....	.....
Warehouse marina	34.86	32.00	66.86	.....	.....
Red House	48.36	36.65	85.01	.....	.....
Fortaleza No. 5	191.97	436.04	628.01	.....	.....
Fortaleza No. 2	323.98	602.62	926.60	.....	.....
Storehouse, P. W	74.37	100.66	175.03	.....	.....
Audiencia	182.37	300.70	483.07	.....	.....
Penitentiary	57.25	117.03	174.28	.....	.....
Secretary's office	32.30	32.21	64.51	.....	.....
Pabellon	116.98	279.49	396.47	.....	.....
"San Francisco" Barracks	6.50	364.00	370.50	.....	.....
Girls' Charity School	16.50	36.57	53.07	.....	.....
Insane Asylum	.....	150.74	150.74	.....	.....
Blind Asylum, Ponce	239.75	53.30	293.05	.....	.....
District court building, Arecibo	.....	805.00	805.00	75.00	.....
District jail, Ponce	299.99	20.90	320.89	.....	.....
Capitania, Ponce	.....	691.91	691.91	.....	.....
Capitania, Mayaguez	.....	.....	.....	575.00	.....
	5,035.54	8,533.39	13,568.93	1,395.50	$36.57

DIVISION OF PUBLIC BUILDINGS.

Tables 8 and 9 show appropriations from various sources and expenditures relating to the various buildings maintained by the insular government.

PERSONNEL.

In the appendix will be found a list of all permanent employees now in the employ of the Department.

The following comparative tabular statement of office salaries for the last and the present year shows on its face that retrenchments in certain bureaus and divisions were deemed necessary. The Bureau of Telegraph was not touched.

	Salaries, 1904–5.		Salaries, 1905–6.
	Allotted.	Disbursed.	Allotted.
Office of the commissioner	$11,760.00	$9,498.86	$8,460.00
Office of public works	27,840.00	25,498.83	20,960.00
Office of public lands	4,100.00	3,691.66	2,600.00
Office of archives	2,800.00	2,738.88	1,600.00
Office of disbursements	10,130.00	9,622.00	6,490.00
Office of docks and harbors	4,560.00	4,495.83	3,200.00
Total	61,190.00	55,546.06	43,310.00

The saving of $5,643.94 in 1904–5 is due to the fact that during the last four months of that year many resignations were accepted. As shown, the saving for the present year is $17,880 over last year.

The present incumbents of the positions of assistant commissioner and superintendent of public works are Messrs. L. J. Proctor and J. J. Jimenez, and I can not speak too highly of their zeal and ability.

It also gives me pleasure to refer to Messrs L. G. McGuigan, A. G. de Quevedo, J. M. Hughart, A. Morales, and F. Gutierrez, who are respectively in charge of the various bureaus of telegraph, docks, and harbors, public buildings, public lands, and archives, and to thank them as well for their able and willing cooperation in the work generally and in this report specifically.

Calling your attention to the appendix which contains in addition maps of this island showing the insular roads and the public lands, I remain,

Most respectfully,

J. S. ELLIOTT,
Commissioner of the Interior.

Hon. E. A. HITCHCOCK,
Secretary of the Interior, Washington, D. C.
(Through the Governor of Porto Rico.)

APPENDIX.

PERMANENT EMPLOYEES, DEPARTMENT OF THE INTERIOR.

Name.	Official designation.	Nationality.	Salary.	Remarks.
Office of the Commissioner proper.				
J. S. Elliott	Commissioner	American	$4,000	
Lewis J. Proctor	Assistant commissioner	do	2,500	
José Blanco	Clerk	Porto Rican	1,200	
Antonio Perez	Sig. clerk	do	300	
Julian Vega	Janitor	do	360	
Division of archives.				
F. Gutierrez	Chief clerk	Porto Rican	1,000	
F. L. Sanchez	Clerk	do	600	
Division of public lands.				
Armando Morales	Chief of division	Porto Rican	1,600	
E. C. Gonzalez	Clerk	do	1,000	
Division of harbors and docks.				
A. G. de Quevedo	Chief of division	Porto Rican	1,600	
P. E. Martinez	Capt. P. Ponce	do	1,000	
Ramon Brandes	Capt. Mayaguez	do	600	
Bureau of public works.				
J. J. Jimenez	Superintendent	Porto Rican	3,000	
F. Montilla	Assistant superintendent	do	2,000	
Geo. W. Jones	Chief clerk	American	1,800	
J. M. Hugahart	General inspector	do	1,800	
J. Madera	Overseer public buildings	Porto Rican	1,500	
F. Vall-Spinosa	Stenographer	do	1,200	
F. Fano	do	do	1,200	
J. F. Callejo	Chief draftsman	do	1,400	
Enrique Guillen	Draftsman	do	720	
Ramon Carbia	Clerk	do	1,200	
E. D. Delgado	do	do	1,200	
Victor J. Hernandez	do	do	1,000	
Henry Simounet	do	do	900	
F. Tallada	Blueprint man	do	360	
H. Rodriguez	Messenger	do	360	
José Cintron	Watchman	do	360	
Justo Solivan	do	do	360	
J. O. Melendez	Teamster	do	600	
District No. 1.				
José Montilla	Traveling inspector	Porto Rican	1,080	Traveling expenses, $588.
Ed. M. Beltran	Inspector	do	600	
Cosme Torres	Capataz	do	360	
José F. Diaz	do	do	360	
Juan Guadalupe	do	do	360	
J. R. Rivera	do	do	360	
Ramon Seijo	do	do	408	
José A. Jordan	Captain auxiliary	do	540	
District No. 2.				
Jesus Benitez	Traveling inspector	Porto Rican	1,200	
F. del Valle	do	do	900	Traveling expenses, $96.
Nicolas T. Diaz	Capataz	do	360	
José Sotelo, 2do	do	do	360	
Pedro Vte. Vazquez	do	do	408	
Julio Maymi	do	do	408	
M. Jesus Abrams	do	do	360	

PERMANENT EMPLOYEES, DEPARTMENT OF THE INTERIOR—Continued.

Name.	Official designation.	Nationality.	Salary.	Remarks.
District No. 3.				
Juan J. Gerardino	Traveling inspector	Porto Rican	$1,080	Traveling expenses, $468.
Antonio Figueroa	Capataz	do	408	
Leon de Leon	do	do	408	
Regalado Benitez	do	do	408	
Guillermo Gimenez	do	do	408	
District No. 4.				
E. Andino	Traveling inspector	Porto Rican	1,080	Traveling expenses, $468.
Fidel Pelaez	Capataz	do	360	
Blas Acosta	do	do	360	
Ventura Pereira	do	do	360	
Emiliano L. Soto	do	do	408	
C. A. Vizcarrondo	Watchman	do	180	
District No. 5.				
Jaime Puig	Traveling inspector	Porto Rican	1,080	Traveling expenses, $528.
J. M. Fonseca	Capataz	do	360	
Manuel Cintron	do	do	360	
Leandro Ruiz	do	do	360	
Abdon Goicoechea	do	do	408	
Orozco Carattini	do	do	408	
District No. 6.				
Martin Aparicio	Traveling inspector	Porto Rican	1,080	Traveling expenses, $588.
Vicente Calvente	Capataz	do	408	
Manuel R. Ruiz	do	do	408	
Ercilio Salles	do	do	360	
Esteban Bermudez	do	do	408	
Vicente Villalba	do	do	408	
Ramon Martinez	do	do	408	
District No. 7.				
L. Mendez Cardona	Traveling inspector	Porto Rican	1,080	Traveling expenses, $528.
Avelino Hernandez	Capataz	do	360	
José Ayala	do	do	360	
Francisco Santos	do	do	408	
Pio Pascual	do	do	408	
Juan E. Simonó	do	do	408	
Aquiles Ortiz	do	do	408	
Juan Colon	Inspector	do	720	
José Casalduc	Inspector of bridges	do	720	Traveling expenses, $60.
Ramon Bacz	Watchman	do	120	
Steam road rollers.				
(Roller No. 1.)				
Alfredo Rodriguez	Driver	Porto Rican	600	
José Carazo	Watchman	do	240	
(Roller No. 2.)				
Juan Carmona	Driver	Porto Rican	600	
Braulio Bonilla	Watchman	do	240	
(Roller No. 3.)				
Arsenio Bravo	Driver	Porto Rican	540	
Enrique Rossy	Watchman	do	240	
(Roller No. 4.)				
José A. Torruellas	Driver	Porto Rican	540	
Bartolomé Flores	Watchman	do	420	
(Roller No. 5.)				
Ramon Nadal	Driver	Porto Rican	540	
Epifanio Capella	Watchman	do	180	
(Roller No. 6.)				
Francisco Cantellops	Driver	Porto Rican	540	
Genaro Lopez	Watchman	do	180	

PERMANENT EMPLOYEES, DEPARTMENT OF THE INTERIOR—Continued.

Name.	Official designation.	Nationality.	Salary.	Remarks.
Steam road rollers— Continued.				
(Roller No. 7.)				
C. Mora	Driver	Porto Rican	$540	
Julian Wilson	Watchman	do	240	
(Roller No. 8.)				
José E. Garcia	Driver	Porto Rican	540	
Hermogenes Matos	Watchman	do	240	

SPECIAL EMPLOYEES' TRUST FUND.

Barros-Barranquitas road.				
A. Vazquez	Resident engineer	Porto Rican	$1,080	
J. A. Davila	Assistant surveyor	do	900	
José Casanova	Chainman	do	540	
Jayuya-Alto de la Bandera road.				
A. Ruiz Cardona	Resident engineer	Porto Rican	1,200	
Antonio Martinez	Paymaster	do	900	
Manuel R. Ferrer	Rodman	do	540	
Lope Montalvo	Laborer	do	180	
Leonardo Lamberty	do	do	180	
Humacao-Yabucoa road.				
T. Watson	Inspector	American	1,080	
Ventura Alvarez	Paymaster	Porto Rican	900	
Arroyo-Patillas road.				
Enrique Umpierre	Overseer	Porto Rican	720	
Maintenance and repairs of public buildings.				
J. P. Kenney	Foreman	American	1,080	
Domingo Ortega	do	Porto Rican	1,080	
Rafael Margary	Watchman	do	360	
Construction of jail at Arecibo.				
Alonso Aquilar	Inspector	Porto Rican	1,200	
Bureau of insular telegraph—Superintendent's office.				
L. G. McGuigan	Superintendent	American	2,000	
John McGlone	Clerk	do	1,200	
William Amy	do	do	900	
Eduardo Gonzalez	do	Porto Rican	500	
Francisco Baquero	Messenger	do	120	
Salvador Barrios	Lineman	do	480	
Dolores Belaval	Manager	do	480	
A. H. Biascoechea	Operator	do	720	
H. L. Biascoechea	do	do	900	
J. A. Biascoechea	do	do	840	
A. S. Bissell	Manager	American	600	
Antonio Budet	do	Porto Rican	720	
Antonio Budet, jr	do	do	600	
Carlos Budet	do	do	480	
Maria Casalduc	do	do	480	
Maria Luisa Caso	do	do	480	
R. H. Castejon	do	do	480	
Maximino Cintron	Lineman	do	480	
Francisco J. Cobos	Operator	do	720	
Frank L. Cole	Manager	American	1,000	
Francisco Colon	Messenger	Porto Rican	120	
Florentino Cruz	Manager	do	600	
Amparo Diaz	do	do	480	
John J. Dore	do	American	1,080	
Segundo Dupra	Lineman	Porto Rican	480	
Andres Elvira	Messenger	do	240	
Pablo Elvira	do	do	180	

PERMANENT EMPLOYEES, DEPARTMENT OF THE INTERIOR—Continued.

Name.	Official designation.	Nationality.	Salary.	Remarks.
Bureau of insular telegraph—Superintendent's office—Cont'd.				
Carmen Fuentes	Manager	Porto Rican	$480	
Rafael Garcia	do	do	720	
Josefa Girau	Operator	do	840	
Carmen Maria Gomez	Manager	do	480	
Guillermo Gonzalez	do	Venezuelan	480	
Ramon Gonzalez	Lineman	Porto Rican	480	
Gregorio Guadalupe	Messenger	do	180	
Juan Guas	Lineman	do	480	
Pedro Guzman	Manager	do	720	
Geo. W. Higgs	do	American	900	
Celestino Iriarte	Operator	Porto Rican	480	
Juan Laborde	Messenger	do	60	
Manuel Lanuza	Manager	do	720	
Alfonso Lausell	do	do	480	
Rafael Lausell	Messenger	do	60	
L. D. Lindsley	Operator	American	900	
Ramon Lizardi	Manager	Porto Rican	480	
Domingo Lopez	do	do	480	
Pablo G. Lopez	Clerk	do	480	
C. P. Marchall	Manager	American	1,080	
Ramon Maria Marti	do	Porto Rican	720	
Jaime Marti y Cuyar	do	do	480	
Franco Miret	Messenger	do	120	
Franco Miret, jr	Manager	do	480	
Concepcion Molina	do	do	480	
Sergio Molina	Messenger	do	120	
Arturo Montequin	Operator	do	900	
Carmen Montilla	Manager	do	480	
E. Moreno Calderon	do	do	600	
Angel Munet	Messenger	do	120	
Carmen M. Cintron	Manager	do	480	
Toribio Navarro	Messenger	do	120	
Antonio Nuñez	Lineman	do	480	
E. M. Oller	Manager	do	480	
J. M. Oller	do	do	900	
Nicolas Ortiz	Messenger	do	60	
Enrique Palacio	Operator	do	840	
Juan Palacio	do	do	900	
Teresa Palmer	Manager	do	480	
Prudencia Pardo	do	do	480	
F. Pascual Velez	Operator	do	720	
José Pedrogo	Manager	do	480	
A. J. Plá	Operator	American	900	
Encarnación Porrata	Manager	Porto Rican	480	
Matilde Pujals	Clerk	do	480	
Manuel Quesada	Messenger	do	120	
Felipe Ramirez	Lineman	do	480	
Lucila Rieckehoff	Manager	do	480	
Manuel Rodriguez	do	do	720	
Ramon R. Rosario	Messenger	do	180	
Josefa Sabat	Manager	do	480	
Andres Sotomayor	Lineman	do	480	
W. S. Sterner	Manager	American	600	
Consuleo Vazquez	do	Porto Rican	480	
Ysabel V. de Cole	do	do	480	
Gerardo Venegas	Operator	do	600	
Alfredo Vera	Manager	do	480	
Francisco Volmar	Lineman	do	480	
Juan E. Vigo	do	do	720	

Map of Public Lands of Porto Rico.

Showing approximate location and areas.

Department of the Interior
San Juan, P.R. June 30, 1905.

J. Sloan Tod
Commissioner of the Interior

E.G.S.

THE NORRIS PETERS CO., WASHINGTON, D. C.

MAP OF THE ISLAND OF PORTO-RICO.

TO ACCOMPANY ANNUAL REPORT FOR THE FISCAL YEAR 1904-1905.

OF THE BUREAU OF PUBLIC WORKS OF PORTO-RICO.

GENERAL PLAN OF INSULAR ROADS.

Road nº 1 – San Juan – Ponce playa
" " 2 – Cataño – Mayagüez
" " 3 – Mayagüez – Guayama.
" " 4 – Cayey – Arroyo
" " 5 – Coguas – Humacao-playa
" " 6 – Ponce – Arecibo.
" " 7 – 1st Section: Rio-Piedras – Humacao playa.
2d " : Humacao – Arroyo.
" " 8 – Aguadilla – Lares.
" " 9 – Bayamon – Comerio & to road nº 1.
" " 10 – Reyes-Catolicos bridge – Barros
" " 11 – Manati – Juana-Diaz and Morovis branch.
" " 12 – Coamo – Barros
" " 13 – Mayaguez-Arecibo.
" " 14 – Mayaguez-Arbonito.

DEPARTMENT OF THE INTERIOR
San Juan, P.R. June 30, 1905

Commissioner of the Interior

Statute Miles
Kilometres

REFERENCES
Principal Cities
Municipal Towns.
Villages.
Section of Insular Road completed.
" " " " under construction
" " " " repaired
" " " " to be constructed.
Railroad.
Boundaries of Municipal Road District.
Light House

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