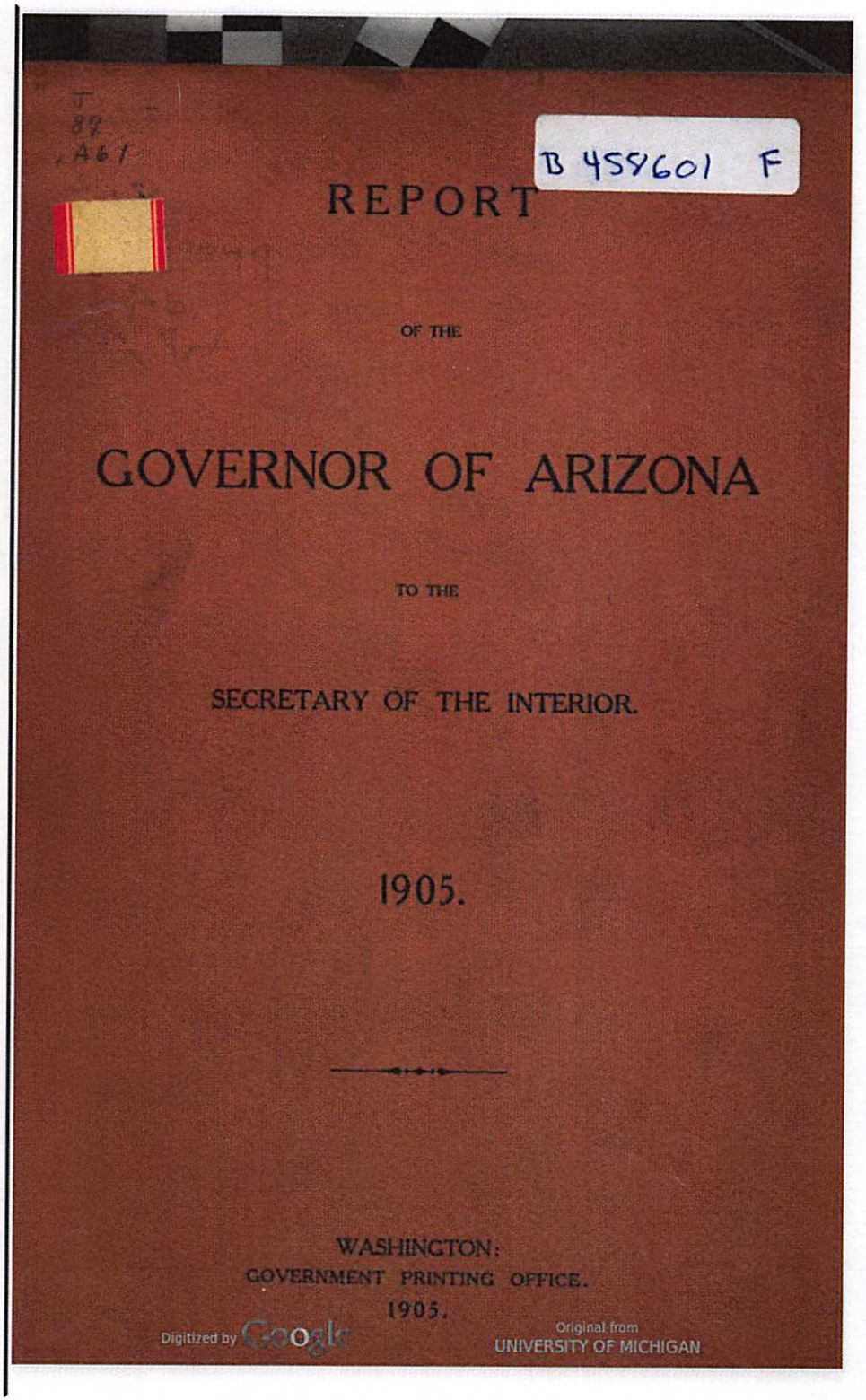
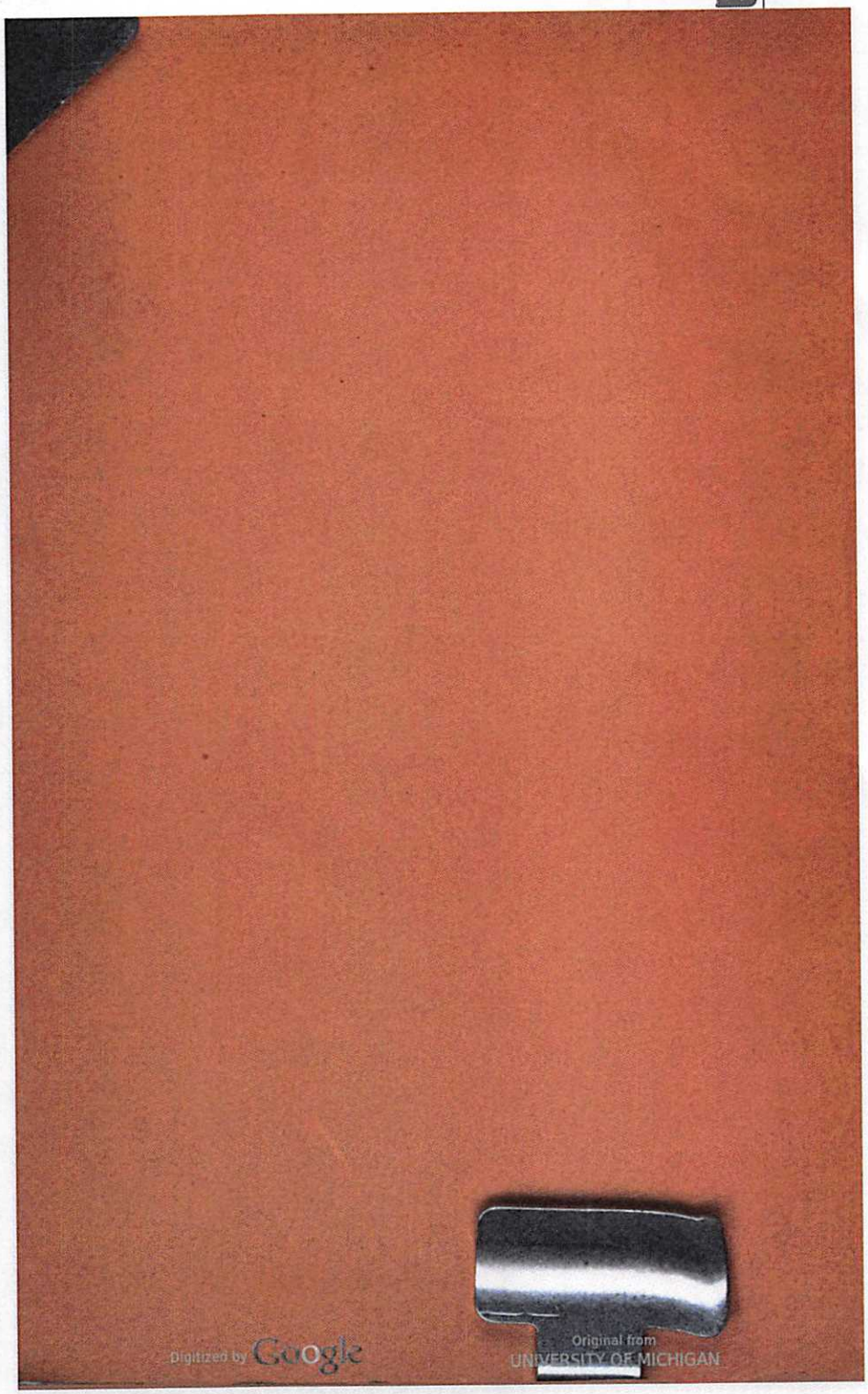
17





CONTENTS.

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 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	295,000.00
Prescott and Eastern	51.90	215,000.00
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	294,000.00
Total	556.40	2,658,500.00
Santa Fe Pacific*	366.734	2,735,979.69
Assessed roads and Pullman Co.		4,973,905.98
Total		10,818,385.67

* 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

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,

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-

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-