

# SUPPLEMENT FOR ARIZONA



POPULATION  
AGRICULTURE  
MANUFACTURES  
MINES AND QUARRIES

## CHAPTER I.

### NUMBER OF INHABITANTS.

**Introduction.**—This chapter gives the population of Arizona, by counties and minor civil divisions, as enumerated at the Thirteenth Census, taken as of April 15, 1910, with comparative statements of population where possible, and a statement and discussion for the state as a whole of the population living in urban and in rural territory. The statistics are given in detail in two general tables.

Table 1 (p. 573) shows the population of Arizona in 1910, distributed according to counties and minor civil divisions, and, so far as possible, in comparison with similar figures for 1900 and 1890. The arrangement of counties and of the primary divisions in each county is alphabetical, except in the few counties in which some or all of the primary divisions are numbered. The figures for secondary divisions are printed in italics. The changes in boundaries or form of organization that have taken place since 1900 are indicated in the footnotes to the table. For changes between 1890 and 1900 reference must be made to the census report of 1900.

The population of the territory in 1910 was returned by election precincts and other minor civil divisions; in 1900 and 1890 it was not returned by election precincts. For this reason it is possible to present comparable figures for only the cities, towns, and Indian reservations which were returned separately at one or both of the previous censuses.

Table 2 (p. 575) shows the cities and incorporated towns in Arizona, alphabetically arranged, with their population in 1910, 1900, and 1890.

The population of Arizona, by counties, at each of the last five censuses, from 1870 to 1910, inclusive; the increase during the last two decades; the density of the total and the rural population at the census of 1910; and the distribution of the population at the last two censuses according to urban and rural districts, are given in Table I of Chapter 2.

The tables and text of the present chapter contain few technical expressions whose meaning is not appar-

ent. The census usage in regard to certain terms is, however, explained below:

**Density of population.**—The density of population of a state or county is obtained by dividing its total population by the number of square miles in its land area. In calculating the density of rural population, the same divisor is used as it is not practicable to ascertain and deduct the exact area covered by the urban districts, and even if this could be done with accuracy the deduction of this area from the total land area would ordinarily make no appreciable difference in the resulting quotient.

**Minor civil divisions.**—The counties are divided generally into smaller political units which bear different designations in the different parts of the country, such as towns, townships, election precincts, school districts, etc. Of these minor civil divisions those which rank next to the county as geographic areas are termed primary divisions. In many instances, however, these primary divisions contain political units of still smaller area, such as incorporated villages or boroughs. These smaller political units are referred to as secondary divisions.

**Urban and rural population defined.**—The Census Bureau, for purposes of discussion, has defined urban population as that residing in cities and other incorporated places of 2,500 inhabitants or more, and rural population as that residing outside of such incorporated places.

The comparisons of the urban and rural population in 1910 with that at earlier enumerations may be made either with respect to the varying proportions of the two classes at successive enumerations or with respect to the increase between enumerations. In order to contrast the *proportion* of the total population living in urban or rural territory at the census of 1910 with the proportion urban or rural at the preceding census, it is necessary to classify the territory according to the conditions *as they existed* at each census. In this comparison a place having less than 2,500 inhabitants in 1900 and over 2,500 in 1910 is classed with the rural population for 1900 and with the urban for 1910. On the other hand, in order to present fairly the contrast between urban and rural communities, as regards their *rate of growth*, it is necessary to consider the changes in population for the *same* territory which have occurred from one decennial census to another. For this purpose the territory which in 1910 was urban or rural, as the case may be, is taken as the basis, and the population in 1900 for the same territory (so far as separately reported at that census) is presented, even though part of the territory may, on the basis of its population at the earlier census, have then been in a different class. This avoids the disturbing effect on comparisons which would arise from the passage, for example, of communities formerly classed as rural into the urban group. These two distinct forms of comparison are made in Table I of Chapter 2 for the territory as a whole and for each county separately for the last two censuses.

**HISTORICAL NOTE.**—The name Arizona is of Spanish-Indian origin and is variously stated to signify "small or few springs," "little creek," and "silver bearing."

The first recorded exploration of the region now constituting Arizona was made in 1539 by the Spaniard, Marcos de Niza, who was sent out from Mexico to confirm the rumors of great wealth which de Vaca had heard of in his wanderings. In 1540 Coronado traversed the region in his journey northward. The earliest settlements were made by Spanish missionaries toward the close of the seventeenth century.

This region formed a part of Mexico, which was under the dominion of Spain until by the Mexican Revolution of 1821 it achieved its independence. In February, 1848, at the close of the Mexican War, Mexico ceded to the United States her claims to territory north of the Rio Grande and Gila River and extending westward to the Pacific Ocean, and in December, 1853, by the Gadsden purchase, the United States acquired from Mexico a strip of territory bounded on the north principally by the Gila River and on the south by the present Mexican line.

In 1850 a territorial form of government had been established for New Mexico, which at that time extended westward to the California boundary, and in 1854 the territory acquired by the Gadsden purchase was added to New Mexico. In 1863, by authority of an act of Congress passed in February of that year, the territory of Arizona was organized, with boundaries as at present, except that the northern line extended westward to California. The boundary between Arizona and Nevada was established at its present location in 1866.

In June, 1910, Congress passed an act to enable Arizona and New Mexico to form state constitutions and governments and to be admitted to the Union. In December of that year, a proposed state constitution for Arizona was adopted by a convention held at Phoenix and was ratified by the people in February, 1911. This constitution received the conditional approval of the Federal Government in August, 1911, and was referred to the people of the territory for amendment. February 14, 1912, the territory became a state of the Union.

## TOTAL POPULATION, INCREASE, AND DISTRIBUTION.

Population of the territory.<sup>1</sup>—The population of Arizona is 204,354. Compared with a population of 122,931 in 1900, this represents an increase during the last decade of 81,423, or 66.2 per cent. During the same period the total population of the United States increased 21 per cent. The percentage of increase for the population of the territory during this

decade was a little more than one and two-thirds that for the preceding decade, 1890–1900.

The following table shows the population of Arizona at each census from 1870 to 1910, inclusive, together with the increase and per cent of increase during each decade, in comparison with the per cent of increase for the United States as a whole.

CENSUS YEAR.	Population.	INCREASE OVER PRECEDING CENSUS.		Per cent of increase for the United States.
		Number.	Per cent.	
1910.....	204,354	81,423	66.2	21.0
1900.....	122,931	34,688	39.3	20.7
1890.....	<sup>1</sup> 88,243	47,803	118.2	25.5
1880.....	40,440	30,782	318.7	30.1
1870.....	9,658			

<sup>1</sup> Includes population (23,623) of Indian reservations specially enumerated.

Arizona was organized as a territory<sup>1</sup> in 1863 and appears in the Federal census reports for the first time in 1870. During the 20 years from 1870 to 1890 the growth was very rapid, its population increasing a little more than four times during the decade 1870–1880 and a little more than doubling during the decade 1880–1890. The absolute increase for this 20-year period was 78,585. Since 1890 the growth has been somewhat slower, the population increasing 116,111, or 131.6 per cent.

A comparison of the rates of increase for the territory with those for the United States as a whole, as given in the preceding table, shows that during each decade the population of the territory increased much more rapidly than that of the United States. The greatest difference between the two rates was during the decade 1870–1880, when the population of the territory increased 318.7 per cent and that of the country as a whole 30.1 per cent, and the smallest difference during the decade 1890–1900, during which period the population of Arizona increased 39.3 per cent and the population of the United States 20.7 per cent.

Principal cities.—Arizona has eight cities, of which the largest, Tucson, has a population of 13,193, and the second city, Phoenix, a population of 11,134. Tombstone, with 1,582 inhabitants, is the smallest city. The aggregate population of the eight cities is 58,414, or 28.6 per cent of the total population of the territory.

Table 2 shows the population in 1910 of all the cities of the territory, with comparative figures, where possible, for 1900 and 1890. The table in the next column shows the population of the six cities having in 1910 over 5,000 inhabitants, as reported at each census since their incorporation as cities, together with the increase during each decade.

CITY AND CENSUS YEAR.	Population.	INCREASE <sup>1</sup> OVER PRECEDING CENSUS.	
		Number.	Per cent.
Bisbee:			
1910.....	9,019		
Douglas:			
1910.....	6,437		
Globe:			
1910.....	7,083		
Phoenix:			
1910.....	11,134	5,590	100.8
1900.....	5,544	2,392	75.9
1890.....	3,152		
Prescott:			
1910.....	5,002	1,533	43.1
1900.....	3,559	1,800	102.3
1890.....	1,750		
Tucson:			
1910.....	13,193	5,062	75.2
1900.....	7,531	2,381	48.2
1890.....	5,150	-1,857	-20.5
1880.....	7,007		

<sup>1</sup> A minus sign (—) denotes decrease.

Of the cities included in this table, Phoenix, Tucson, and Prescott show increases during the last decade of 100.8, 75.2, and 43.1 per cent, respectively. No figures of increase can be given for either Bisbee, Douglas, or Globe, as they have been incorporated since 1900. Phoenix and Tucson show a higher rate of increase during the last decade, 1900–1910, than during the preceding decade, 1890–1900.

Counties.—Arizona has 13 counties. The population of these counties ranges from 3,773 in Mohave County to 34,591 in Cochise County.

There have been no changes in the territorial boundaries of the counties since 1900.

Each county in the territory has increased in population during the last decade, the rates of increase ranging from 10.1 per cent in Mohave County to 273.9 per cent in Cochise County, and the absolute increases from 347 in Mohave County to 25,340 in Cochise County.

<sup>1</sup> Admitted as a state in 1912.

The maps on page 571 show the increase in the total and the rural population, respectively, of each county of Arizona during the last decade, the different rates of increase being indicated by differences in shading.

**Density of population.**—The total land area of the territory is 113,810 square miles. The average number of persons to the square mile in 1910 was 1.8; in 1900 and 1890 it was 1.1 and 0.8, respectively. The average number per square mile for the United States as a whole in 1910 was 30.9.

The density of population is given by counties in Table I of Chapter 2 and in the maps on page 572, both for the entire population and for that living in rural territory, excluding in the latter case the population of places of 2,500 or more, but not excluding the land area of such places.

Coconino County, with 18,238 square miles, has the largest area, and Santa Cruz County, with 1,229 square miles, has the smallest area. Cochise County, with 5.6 persons per square mile, has the highest density. Apache, Coconino, Mohave, and Yuma Counties each average less than 1 person per square mile.

**Minor civil divisions.**—The political divisions into which counties are subdivided are collectively termed "Minor civil divisions." In Arizona the counties are

divided into 155 primary divisions, comprising 132 election precincts, 3 cities, 4 incorporated towns, and 16 school districts. There are also 15 secondary divisions, comprising 5 cities and 10 incorporated towns. Of these, one incorporated town is coextensive with the election precinct in which it is located, the others forming parts of their respective precincts or townships. Besides these minor civil divisions duly organized for governmental purposes there are 32 unorganized townships, 31 unincorporated towns, 7 unincorporated villages, and 11 Indian reservations and part of another in the territory. These are returned under the counties in which they are wholly or partly located. Population not included in any of the specified divisions is shown under the title "Remainder of county."

**Urban and rural population compared.**—The following table presents the population of Arizona at the censuses of 1910, 1900, and 1890, respectively, distributed among cities and towns grouped according to specified limits of population, together with the percentage of the total population contained in each group at each of the censuses named. The classification is based upon the population of each place as it existed at each census.

CLASS OF PLACES.	1910		1900		1890		PER CENT OF TOTAL POPULATION.		
	Number of places.	Population.	Number of places.	Population.	Number of places.	Population.	1910	1900	1890
Total population.....		204,354		122,931		188,243	100.0	100.0	100.0
Urban territory.....	9	63,260	4	19,495	2	8,302	31.0	15.9	9.4
Cities and towns of—									
10,000 inhabitants or more.....	2	24,327					11.9		
5,000 to 10,000 inhabitants.....	4	27,031	2	13,075	1	5,150	13.5	10.6	5.8
2,500 to 5,000 inhabitants.....	3	11,302	2	6,420	1	3,152	5.5	5.2	3.6
Rural territory.....		141,094		103,436		179,941	69.0	84.1	90.6
Cities and towns of less than 2,500 inhabitants.....	13	16,406	10	8,340	10	9,247	8.0	7.2	10.5
Other rural territory.....		124,688		94,587		170,694	61.0	78.9	80.1

<sup>1</sup> Includes population (28,623) of Indian reservations specially enumerated.

As shown by the above table, the urban territory of Arizona in 1910—that is, the cities and incorporated towns of 2,500 inhabitants or more—contained 63,260 inhabitants, or 31 per cent of the total population, while 141,094 inhabitants, or 69 per cent, lived in rural territory. The urban territory as it existed in 1900—that is, the cities and incorporated towns then having 2,500 inhabitants or more—contained 19,495 inhabitants, or 15.9 per cent of the total population, while 103,436 inhabitants, or 84.1 per cent, lived in rural territory. There has thus been a large increase in the proportion of urban population during the last decade. For the United States as a whole the urban population constituted 46.3 per cent of the total population in 1910 and 40.5 per cent of the total population in 1900.

In 1910 Tucson and Phoenix, the two cities in Arizona having over 10,000 inhabitants, contributed 11.9 per cent of the total population of the territory, which was a slight increase over the proportion in these two

cities in 1900, when they comprised the group of places having from 5,000 to 10,000 inhabitants each. The largest proportion of the urban population in the territory in 1910 was contained in the four cities which had from 5,000 to 10,000 inhabitants each.

The above table shows further that in all cities and incorporated towns, including those of less than 2,500 inhabitants, there was in 1910 a population of 79,666, or 39 per cent of the population of the territory. The population of all cities and incorporated towns, as they existed in 1900, was 28,344, or 23.1 per cent of the population of the territory.

Table I of Chapter 2 shows that of the three counties of Arizona which contained urban population in 1900, two had a larger proportion and one a smaller proportion of urban population in 1910 than in 1900, while of the remaining counties which were wholly rural in 1900, five showed a considerable proportion of urban population in 1910.



In order to compare the *rate of growth* in urban and rural communities it is necessary in each case, as previously explained, to consider the changes in population which have occurred in the *same* territory from one decennial census to another. With this end in view, places classed as urban or rural according to their population in 1910 are taken as a basis and the aggregate population in 1910 and in 1900 of the same places is then compared. Thus, as shown in the table in the next column, the total population in 1910 of the cities and towns which at that time had 2,500 inhabitants or more was 63,260; in 1900 the total population of these same places (so far as separately reported) was 21,409. It may be noted that the latter figure exceeds the total population in 1900 of the cities and towns which at that time had over 2,500 inhabitants each, 19,495 (see table on p. 569), by 1,914. The difference is the net result of the passage, since 1900, of certain communities from the rural to the urban class and vice versa.

In the following table the population for the territory as a whole is distributed so as to show, for 1910 and 1900, the combined population of cities and towns

having in 1910 2,500 inhabitants or more and the population of the remainder of the territory.

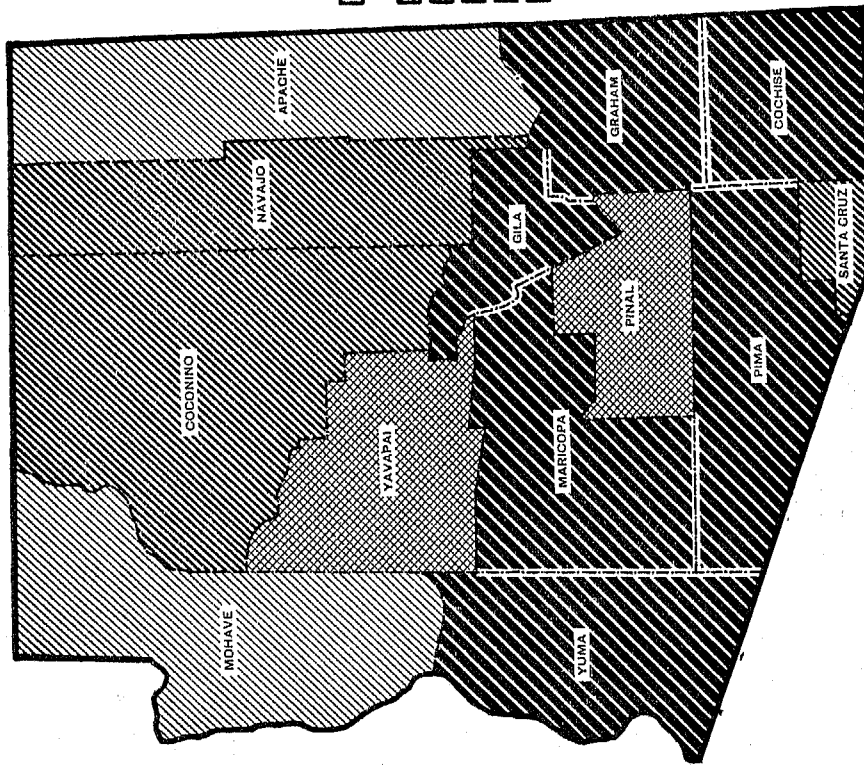
CLASS OF PLACES.	POPULATION.		INCREASE: 1900-1910	
	1910	1900	Number.	Per cent.
The territory.....	204,854	122,931	81,423	66.2
Cities and towns of 2,500 or more in 1910.....	63,260	21,409	41,851	195.5
Remainder of the territory.....	141,094	101,522	39,572	39.0

A comparison of the total population in 1910 of cities and towns having a population of not less than 2,500 each with the total population of the same places in 1900, as given in the table above, shows an increase of 195.5 per cent. This represents the rate of growth of urban communities as thus defined. During the same period the rural population, comprising that of the remainder of the territory, increased 39 per cent. Urban population thus increased a little more than five times as rapidly as that of rural territory. For the United States as a whole urban population increased 34.9 per cent in the last decade and rural population 11.2 per cent.

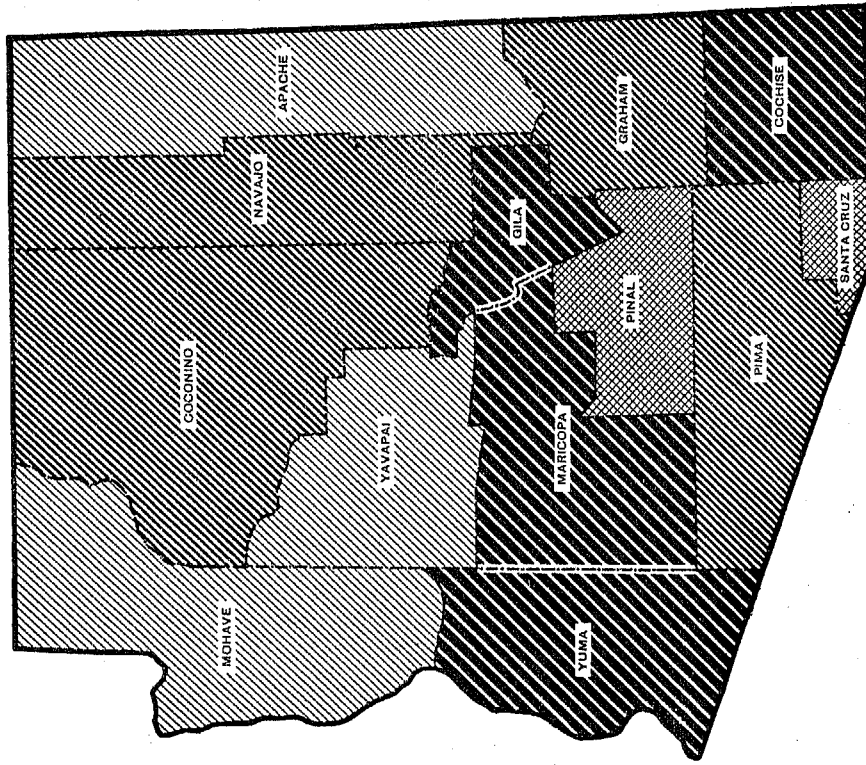
**PER CENT OF INCREASE OR DECREASE OF POPULATION OF ARIZONA, BY COUNTIES: 1900-1910.**

In case of decrease the per cent is inserted under the county name.

**TOTAL POPULATION.**



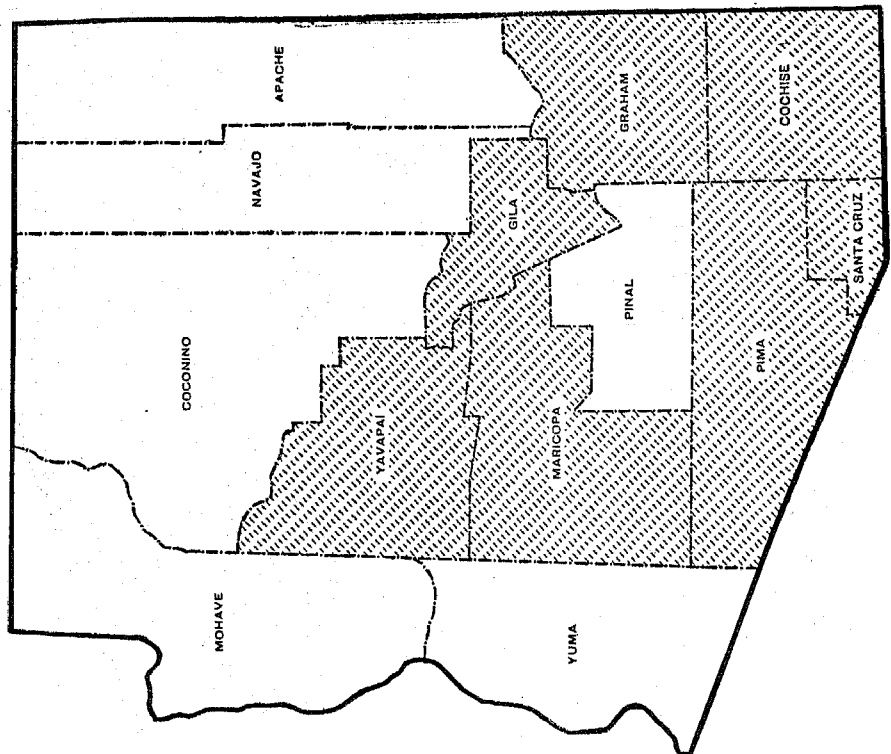
**RURAL POPULATION.**



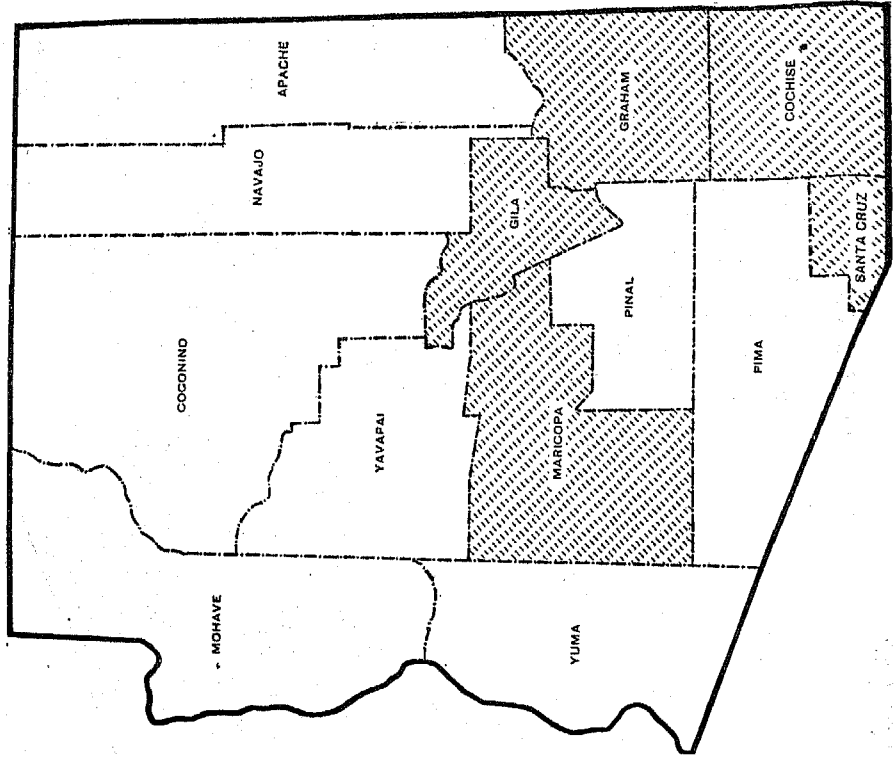
*Rural population is defined as that residing outside of incorporated places having 2,500 inhabitants or more.*

DENSITY OF POPULATION OF ARIZONA, BY COUNTIES: 1910.

TOTAL POPULATION.



RURAL POPULATION.



NUMBER OF INHABITANTS  
PER SQUARE MILE.

- Less than 2
- 2 to 6
- 6 to 18
- 18 to 45
- 45 to 90
- 90 and over.

*Rural population is defined as that residing outside of incorporated places having 2,500 inhabitants or more.*

# STATISTICS OF POPULATION.

**TABLE 1.—POPULATION OF MINOR CIVIL DIVISIONS: 1910, 1900, AND 1890.**

(The words "district" and "precinct," where used, mean school district and election precinct, respectively. For changes in boundaries, etc., between 1900 and 1910, see footnotes; for those between 1890 and 1900, see Reports of the Twelfth Census: 1900, Vol. I, Table 5.)

MINOR CIVIL DIVISION:	1910	1900	1890	MINOR CIVIL DIVISION.	1910	1900	1890
<b>Apache County</b>				<b>Cocconino County—Continued.</b>			
Concho village <sup>1</sup> .....	401			Havasupai (Supai) Indian Reservation.....	171	250	
Eagar town <sup>2</sup> .....	397			Hopi (Moqui) Indian Reservation <sup>3</sup> (part of).....	178		
St. Johns village <sup>3</sup> .....	835			<i>Total for Hopi Indian Reservation<sup>4</sup> in Coconino and Navajo Counties.....</i>	<i>3,840</i>	<i>3,807</i>	
Springerville town <sup>5</sup> .....	296			Navajo Indian Reservation (part of).....	2,544	863	
Township 11 north, range 28.....	154			[For total of that part of Navajo Indian Reservation in Arizona, see Apache County.]			
Township 13 north, range 30.....	34			Walapai (Hualapai) Indian Reservation (part of).....	(9)	(10)	
Township 14 north, range 25.....	22			<i>Total for Walapai Indian Reservation in Coconino and Mohave Counties.....</i>	<i>269</i>	<i>620</i>	
Township 14 north, range 30.....	55			Remainder of county.....	351		
Township 16 north, range 27.....	40						
Township 17 north, range 27.....	1			<b>Gila County</b>			
Township 18 north, range 24.....	67			Bellevue precinct.....	132		
Township 18 north, range 25.....	30			Clute precinct.....	30		
Township 19 north, range 25.....	23			Copper Hill precinct.....	521		
Township 19 north, range 28.....	40			Crowley precinct.....	197		
Township 20 north, range 25.....	20			Gisela precinct.....	30		
Township 20 north, range 26.....	25			Globe city <sup>12</sup> .....	7,083		
Township 20 north, range 27.....	22			Globe precinct.....	775		
Township 21 north, range 27.....	50			Hayden district.....	582		
Township 21 north, range 28.....	124			Miami precinct.....	1,390		
Township 21 north, range 29.....	59			North Globe precinct.....	113		
Township 21 north, range 30.....	41			Payson precinct, including Payson town.....	225		
Township 21 north, range 31.....	7			<i>Payson town<sup>13</sup>.....</i>	<i>86</i>		
Township 22 north, range 29.....	115			Pine precinct.....	168		
Township 22 north, range 30.....	76			Roosevelt precinct, including Roosevelt town.....	707		
Township 22 north, range 31.....	110			<i>Roosevelt town<sup>13</sup>.....</i>	<i>287</i>		
Fort Apache Indian Reservation (part of).....	24	359		Rye precinct.....	14		
<i>Total for Fort Apache Indian Reservation in Apache, Gila, and Navajo Counties.....</i>	<i>2,577</i>	<i>1,876</i>		Warrior precinct.....	492		
Navajo Indian Reservation (part of).....	5,680	4,982		Winkelman town <sup>14</sup> .....	484		
<i>Total for that part of Navajo Indian Reservation in Apache, Coconino, and Navajo Counties, Arizona<sup>15</sup>.....</i>	<i>8,959</i>	<i>6,257</i>		Fort Apache Indian Reservation (part of).....	740	709	
Remainder of county.....	392			[For total, see Apache County.]			
				San Carlos Indian Reservation (part of).....	1,383		
				<i>Total for San Carlos Indian Reservation in Gila and Graham Counties.....</i>	<i>1,866</i>	<i>13,065</i>	
				Remainder of county.....	1,342		
<b>Cochise County</b>				<b>Graham County<sup>14</sup></b>			
Benson precinct, including Benson town.....	1,218			Precinct 1, including Safford town.....	2,317		
<i>Benson town<sup>16</sup>.....</i>	<i>7,036</i>			<i>Safford town<sup>17</sup>.....</i>	<i>329</i>		
Bisbee precinct, including Bisbee city.....	9,105			Precinct 5.....	217		
<i>Bisbee city<sup>18</sup>.....</i>	<i>9,019</i>			Precinct 11.....	355		
Ward 1.....	5,068			Precinct 18, Metcalf.....	2,868		
Ward 2.....	1,280			Precinct 20.....	376		
Ward 3.....	2,723			Bonita precinct.....	362		
Bowie precinct.....	540			Clifton city <sup>19</sup> .....	4,874		
Cochise precinct.....	402			Duncan precinct.....	738		
Courtland precinct, including Courtland town.....	976			Franklin precinct.....	199		
<i>Courtland town<sup>20</sup>.....</i>	<i>914</i>			Guthrie precinct.....	92		
Douglas precinct, including Douglas city.....	7,395			Klondyke precinct.....	334		
<i>Douglas city<sup>21</sup>.....</i>	<i>6,437</i>			Morenci town <sup>22</sup> .....	5,010		
Fairbanks precinct.....	225			Sheldon precinct.....	126		
Gleeson precinct, coextensive with Gleeson town <sup>23</sup> .....	600			Solomonsville town <sup>16</sup> .....	595	620	287
Hereford precinct.....	508			Stanley precinct.....	139		
Huachuca precinct.....	417			York precinct.....	73		
Light precinct.....	441			Township 4 south, range 23.....	394		
Lowell precinct.....	4,350			Township 5 south, range 22.....	72		
Naco precinct.....	517			Township 5 south, range 23.....	97		
Paradise precinct.....	207			Township 5 south, range 24.....	355		
Pearce precinct, including Pearce town.....	1,001			Township 6 south, range 24.....	285		
<i>Pearce town<sup>24</sup>.....</i>	<i>517</i>			Township 6 south, range 25, including Pima town.....	935		
Pirleville precinct.....	2,683			<i>Pima town.....</i>	<i>500</i>	<i>521</i>	<i>750</i>
St. David precinct.....	361			Township 7 south, range 22.....	14		
Tombstone precinct, including Tombstone city.....	1,750			Township 7 south, range 23.....	9		
<i>Tombstone city.....</i>	<i>1,532</i>	640	1,875	Township 7 south, range 24.....	100		
Ward 1.....	815			Township 7 south, range 25, including Thatcher town.....	1,173		
Ward 2.....	290			<i>Thatcher town.....</i>	<i>904</i>	644	820
Ward 3.....	181			San Carlos Indian Reservation (part of).....	483		
Ward 4.....	292			[For total, see Gila County.]			
Willcox precinct.....	1,632			Remainder of county.....	1,407		
<b>Cocconino County</b>				<b>Maricopa County</b>			
Bellefont precinct.....	692			Agua Caliente precinct.....	153		
Flagstaff precinct.....	543			Alhambra precinct.....	435		
Flagstaff town.....	1,633	1,271	963	Alma precinct.....	929		
Fredonia precinct, including Fredonia village.....	177			Arlington precinct.....	241		
<i>Fredonia village<sup>25</sup>.....</i>	<i>169</i>			Buckeye precinct.....	684		
Grand Canyon district.....	290			Cartwright precinct.....	379		
Rogers Lake district.....	77			Cave Creek precinct.....	70		
Spring Valley district.....	107						
Upper Oak Creek district.....	30						
Williams precinct, including Williams town.....	1,328						
<i>Williams town<sup>26</sup>.....</i>	<i>1,267</i>						

<sup>1</sup> No comparison of population can be made; not returned by minor civil divisions in 1900.  
<sup>2</sup> No comparison of population can be made; not returned by minor civil divisions in 1890.  
<sup>3</sup> Not incorporated.  
<sup>4</sup> Total population for Navajo Indian Reservation in Apache, Coconino, and Navajo Counties, Arizona; McKinley, Sandoval, and San Juan Counties, New Mexico; and San Juan County, Utah, in 1910, 18,031, and in 1900, 8,897.  
<sup>5</sup> Incorporated in 1902.  
<sup>6</sup> Incorporated in 1905.  
<sup>7</sup> Incorporated in 1901.  
<sup>8</sup> Returned in 1900 as in Navajo County only.

<sup>9</sup> No population reported.  
<sup>10</sup> Returned with that part of Walapai Indian Reservation in Mohave County.  
<sup>11</sup> County total is exclusive of population of San Carlos Indian Reservation (part of). No comparison of population can be made; not returned by minor civil divisions in 1900.  
<sup>12</sup> Incorporated as a city in 1907.  
<sup>13</sup> Not returned by counties in 1900.  
<sup>14</sup> Greenlee County organized from part of Graham County; organization effective Jan. 1, 1911. Estimated population of Greenlee County, 14,818.  
<sup>15</sup> Incorporated in 1908.  
<sup>16</sup> Not incorporated; charter repealed in 1909.



# STATISTICS OF POPULATION.

TABLE 2.—POPULATION OF INCORPORATED PLACES: 1910, 1900, AND 1890.

CITY OR TOWN.	County.	1910	1900	1890	CITY OR TOWN.	County.	1910	1900	1890
Bisbee city.....	Cochise.....	9,019			Pima town.....	Graham.....	500	521	750
Chloride town.....	Mohave.....	275	465		Prescott city.....	Yavapai.....	5,092	3,559	1,759
Clifton city.....	Graham.....	4,374			Safford town.....	Graham.....	929		
Douglas city.....	Cochise.....	6,437			Tempe town.....	Maricopa.....	1,473	885	
Flagstaff town.....	Coconino.....	1,633	1,271	963	Thatcher town.....	Graham.....	904	644	320
Florence town.....	Pinal.....	807		1,486	Tombstone city.....	Cochise.....	1,582	646	1,875
Globe city.....	Gila.....	7,083			Tucson city.....	Pima.....	13,193	7,531	5,150
Jerome town.....	Yavapai.....	2,393	2,861	250	Wickenburg town.....	Maricopa.....	570		
Mesa town.....	Maricopa.....	1,602	722		Williams town.....	Coconino.....	1,267		
Nogales town.....	Santa Cruz.....	3,514	1,761	1,194	Winslow town.....	Navajo.....	2,381	1,305	363
Phoenix city.....	Maricopa.....	11,134	5,544	3,152	Yuma town.....	Yuma.....	2,914		

## CHAPTER 2.

### COMPOSITION AND CHARACTERISTICS OF THE POPULATION.

**Introduction.**—The first chapter having given the number of inhabitants of Arizona by counties and minor civil divisions, the decennial increase and the density of population, and the proportions urban and rural, the present chapter deals with the composition and characteristics of the population. The two chapters cover all the principal topics of the population census except occupations and ownership of homes.

**Description of the tables.**—The greater part of this chapter consists of three general tables, which present statistics of color, nativity, parentage, sex, citizenship, illiteracy, school attendance, and dwellings and families, as follows: Table I for the state and counties; Table II for the two cities of over 10,000 inhabitants; and Table III for places of 2,500 to 10,000.

A series of summary tables (numbered 1 to 12) reproduces from the general tables the more important state totals, and presents also certain additional data relative to state of birth, age, and marital condition.

On account of the wide differences in characteristics among the different classes of the population, the statistics on each subject are shown according to race, and for the whites according to nativity and parentage. Classification according to nativity and parentage is scarcely necessary for the other races, since nearly all negroes and Indians are native born of native parentage, and nearly all Chinese and Japanese either foreign born or of foreign parentage.

The white population is divided into four groups: (1) Native, native parentage—that is, having both parents born in the United States; (2) native, foreign parentage—having both parents born abroad; (3) native, mixed parentage—having one parent native and the other foreign born; (4) foreign born. As the second and third classes do not differ greatly in characteristics, they are combined in some of the tables; in a few cases all three native white classes are combined.

Since marked differences often exist between urban and rural communities with respect to the composition and characteristics of the population, the two classes are distinguished in connection with several of the subjects. Urban population, as defined by the Bureau of the Census, includes that of all incorporated places of 2,500 inhabitants or more, the remainder being classified as rural.

The census inquiry as to school attendance was merely as to whether the person enumerated had attended any

kind of school at any time between September 1, 1909, and the date of enumeration, April 15, 1910.

The Census Bureau classifies as illiterate any person 10 years of age or over who is unable to write, regardless of ability to read.

**Color and nativity** (Table 1).—Of the total population of Arizona, 82,468, or 40.4 per cent, are native whites of native parentage; 42,176, or 20.7 per cent, are native whites of foreign or mixed parentage; 46,824, or 22.9 per cent, are foreign-born whites; and 29,201, or 14.3 per cent, are Indians. The corresponding percentages in 1900 were 36.5, 20.9, 18.2, and 21.5, respectively. In 8 of the 13 counties at least 20 per cent of the population is white of foreign or mixed parentage, and in 7 counties more than 20 per cent is foreign-born white. In Santa Cruz County 42.3 per cent of the population is foreign-born white, and only 22.8 per cent is native white of native parentage. (See maps on page 583.)

Of the urban population, 42.1 per cent are native whites of native parentage; of the rural, 39.6 per cent. The corresponding proportions for native whites of foreign or mixed parentage are 26.1 and 18.2 per cent, respectively. The percentage of foreign-born whites is 27.2 in the urban population and 21 in the rural; the percentage of Indians is 1.2 in the urban and 20.1 in the rural. The Indian population is almost exclusively rural, only 2.6 per cent living in urban communities.

**Sex** (Table 2).—In the total population of the state there are 118,574 males and 85,780 females, or 138.2 males to 100 females. In 1900 the ratio was 140.4 to 100. Among native whites the ratio is 129.3; among foreign-born whites, 188.4; and among the Indians, 106.4 to 100. In the urban population there are 126 males to 100 females, and in the rural, 144.2.

**State of birth** (Tables 3 and 4).—Of the native population—that is, population born in the United States—50.7 per cent were born in Arizona and 49.3 per cent outside the state; of the native white population, 59.5 per cent were born outside the state; of the native Indians, 1.9; and of the native negroes, 85.5 per cent.

**Foreign nationalities** (Table 5).—Of the foreign-born white population of Arizona, persons born in Mexico represent 62.9 per cent; England, 7.5; Germany, 3.9; Canada, 3.9; Ireland, 3.3; Italy, 3.3; Austria, 3.2; Spain, 1.8; Sweden, 1.8; Scotland, 1.2; Finland, 1.2; all other countries, 6. Of the total white stock of

foreign origin, which includes persons born abroad and also natives having one or both parents born abroad, Mexico contributed 57.4 per cent; England, 8.2; Germany, 6.3; Ireland, 5.5; Canada, 4.4; Italy, 2.5; Austria, 2.2; Sweden, 1.8; Scotland, 1.7; Spain, 1.

**Voting and militia ages** (Table 6).—The total number of males 21 years of age and over is 74,051, representing 36.2 per cent of the population. Of such males, 38.8 per cent are native whites of native parentage, 14.4 per cent native whites of foreign or mixed parentage, 34.7 per cent foreign-born whites, 9 per cent Indians, 2 per cent Chinese and Japanese, and 1 per cent negroes. Of the 25,682 foreign-born white males of voting age, 5,912, or 23 per cent, are naturalized. Males of militia age—18 to 44—number 58,962.

**Age** (Tables 7 and 8).—Of the total population, 12.1 per cent are under 5 years of age, 19.6 per cent from 5 to 14 years, inclusive, 18.7 per cent from 15 to 24, 33.7 per cent from 25 to 44, and 15.6 per cent 45 years of age and over. The proportion of children is highest among native whites of foreign or mixed parentage, and next highest in the Indian population. The foreign-born white population comprises comparatively few children, only 11 per cent of this class being under 15 years of age, while 70 per cent are 25 years of age and over. Of the native whites of native parentage, less than one-half (47.3 per cent) are 25 and over, and of the native whites of foreign or mixed parentage only a little more than one-third (35.3 per cent).

The urban population shows a smaller proportion of children than the rural and a larger proportion of persons in the prime of life. Of the urban population, 37.1 per cent are from 25 to 44 years of age, inclusive, and of the rural population, 32.1 per cent.

**School attendance** (Table 9).—The total number of persons of school age—that is, from 6 to 20 years, inclusive—is 56,897, of whom 30,355, or 53.4 per cent, attended school. In addition to these, 490 persons under 6 and 501 of 21 and over attended school. For boys from 6 to 20 years, inclusive, the percentage attending school was 52.5; for girls, 54.3. For children from 6 to 14 years, inclusive, the percentage attending school was 67.2. The percentage for children of this age among native whites of native parentage was 80.4; among native whites of foreign or mixed parentage, 72.1; among foreign-born whites, 61.6; among Indians, 34.1. Of the small number of negro children aged 6 to 14 years 81.5 per cent were attending school. (See Table I.) The percentage attending school for children aged 6 to 14 is higher in urban than in rural communities.

**Illiteracy** (Table 10).—There are 32,953 illiterates in the state, representing 20.9 per cent of the total population 10 years of age and over, as compared with 29 per cent in 1900. The percentage of illiteracy is 72.9 in the Indian population, 31.5 among foreign-born whites, 7.2 among negroes, and 4.2 among native whites.

For all classes combined, the percentage illiterate is 9.9 in the urban population, and 26.1 in the rural. For each element of the population the percentage illiterate is higher in rural than in urban communities.

For persons from 10 to 20 years, inclusive, whose literacy depends largely upon present school facilities and school attendance, the percentage of illiteracy is 18. (See Table I.)

**Marital condition** (Table 11).—In the population 15 years of age and over, 45.8 per cent of the males are single and 22.2 per cent of the females. The percentage married is 47.7 for males and 65.7 for females, and the percentage widowed 4.4 and 10.5, respectively. The percentages of those reported as divorced, 0.8 and 1, respectively, are believed to be too small, because of the probability that many divorced persons class themselves as single or widowed.

That the percentage single is so much smaller for women than for men, though partly accounted for by the excess of males in the total population of the state, is due largely to the fact that women marry younger than men. Thus 20.3 per cent of the females and only 2 per cent of the males from 15 to 19 years of age are married; 64.5 per cent of the females and 20.6 per cent of the males from 20 to 24 years; 82.5 per cent of the females and 51.9 per cent of the males from 25 to 34 years; and 83.2 per cent of the females and 66.5 per cent of the males 35 to 44 years of age. In the age group 45 and over the difference practically disappears, the percentage married being 61.3 for females and 62.5 for males. That there is a larger proportion of widows than of widowers may indicate that men more often remarry than women, but, since husbands are generally older than their wives, the marriage relationship is in fact more often broken by death of the husband than by death of the wife.

For the main elements of the population the percentages of married persons among those 15 years of age and over are as follows: Foreign-born whites, 47.9 for males and 68.2 for females; native whites of native parentage, 46.5 and 66.4, respectively; native whites of foreign or mixed parentage, 40.7 and 60.2; Indians, 61.6 and 67.6.

These percentages by no means indicate the relative tendency of the several classes as regards marriage. To determine that, the comparison should be made by age periods, since the proportion married in any class is determined largely by the proportion who have reached the marrying age. Similarly, the proportion widowed depends largely on the proportion past middle life. The percentage married for females is higher in rural than in urban communities; for males the percentages are practically the same.

**Dwellings and families**.—The total number of dwellings in Arizona is 45,386, and the total number of families 47,927, there being 105.6 families to each 100 dwellings. (See Table I.) The average number of persons per dwelling is 4.5, and the average number per family, 4.3.



TABLE 1.—COLOR, NATIVITY, AND PARENTAGE.

CLASS OF POPULATION.	NUMBER.			PER CENT OF TOTAL.		
	1910	1900	1890	1910	1900	1890
<b>THE STATE.</b>						
Total population.....	204,354	122,931	88,243	100.0	100.0	100.0
White.....	171,468	92,903	55,734	83.9	75.6	63.2
Negro.....	2,009	1,848	1,357	1.0	1.5	1.5
Indian.....	29,201	20,480	29,981	14.3	21.5	34.0
Chinese.....	1,305	1,419	1,170	0.6	1.2	1.3
Japanese.....	371	281	1	0.2	0.2	( <sup>1</sup> )
Total native.....	155,589	98,698	69,448	76.1	80.3	78.7
Total foreign born.....	48,765	24,233	18,795	23.9	19.7	21.3
Native white, total.....	124,644	70,508	38,271	61.0	57.4	43.4
Native parentage.....	32,468	44,830	24,244	15.9	36.5	27.5
Foreign parentage.....	26,117	15,466	9,208	12.8	12.6	10.4
Mixed parentage.....	16,059	10,212	4,819	7.9	8.3	5.5
Foreign-born white.....	40,824	22,395	17,463	20.0	18.2	19.8
<b>URBAN POPULATION.</b>						
Total.....	63,260	19,495	8,302	100.0	100.0	100.0
White.....	60,355	18,379	7,662	95.4	94.3	92.3
Negro.....	1,310	330	94	2.1	1.7	1.1
Indian.....	773	194	183	1.2	1.0	2.2
Chinese and Japanese.....	822	592	363	1.3	3.0	4.4
Native white, total.....	43,166	14,047	4,553	68.2	72.1	54.8
Native parentage.....	26,644	8,237	2,402	42.1	42.3	28.9
Foreign parentage.....	10,427	5,810	2,151	16.5	29.8	25.9
Mixed parentage.....	6,095	3,190	960	9.6	9.9	7.4
Foreign-born white.....	17,189	4,332	3,109	27.2	22.2	37.4
<b>RURAL POPULATION.</b>						
Total.....	141,094	103,436	79,941	100.0	100.0	100.0
White.....	111,113	74,524	48,072	78.8	72.0	60.1
Negro.....	699	1,518	1,263	0.5	1.5	1.6
Indian.....	28,428	20,286	29,798	20.1	25.4	37.3
Chinese and Japanese.....	854	1,108	808	0.6	1.1	1.0
Native white, total.....	81,478	56,461	33,718	57.7	54.6	42.2
Native parentage.....	55,824	36,598	21,842	39.6	35.4	27.3
Foreign parentage.....	15,690	9,868	3,876	11.1	9.2	4.9
Mixed parentage.....	9,984	5,135	1,964	7.1	4.8	2.4
Foreign-born white.....	20,635	18,063	14,354	14.6	17.5	18.0

<sup>1</sup> Less than one-tenth of 1 per cent.

TABLE 2.—SEX.

[See also Tables 7 and 8.]

CLASS OF POPULATION.	1910			1900		
	Male.	Female.	Males to 100 females.	Male.	Female.	Males to 100 females.
Total population.....	118,574	85,780	138.2	71,795	51,136	140.4
White.....	100,871	70,597	142.9	55,230	37,673	146.6
Negro.....	1,054	955	110.4	1,363	485	281.0
Indian.....	15,056	14,145	106.4	13,551	12,929	104.8
Chinese and Japanese.....	1,593	83	( <sup>1</sup> )	1,651	49	( <sup>1</sup> )
Native white, total.....	70,285	54,959	129.3	41,041	29,467	139.3
Native parentage.....	47,370	35,098	135.0	26,631	18,190	146.3
Foreign parentage.....	14,371	11,740	122.3	8,783	6,683	131.4
Mixed parentage.....	8,544	7,515	113.7	5,627	4,585	122.7
Foreign-born white.....	30,538	16,238	188.4	14,189	8,206	172.9
Urban population.....	35,264	27,996	126.0	11,382	8,113	140.3
Rural population.....	83,310	57,784	144.2	60,413	43,023	140.4

<sup>1</sup> Ratio not shown, the number of females being less than 100.

TABLE 3.—NATIVE POPULATION, DISTINGUISHED AS BORN IN STATE OR OUTSIDE STATE.<sup>1</sup>

CLASS OF POPULATION.	1910	1900	Urban:	
			1910	1910
Total native population.....	155,589	98,698	45,200	110,389
Born in state.....	78,949	52,780	16,824	62,125
Born outside state <sup>2</sup> .....	76,640	45,918	28,376	48,264
Per cent outside state.....	49.3	46.5	62.8	43.7
Native white population.....	124,644	70,508	43,166	81,478
Born in state.....	50,479	26,862	16,101	34,378
Born outside state <sup>2</sup> .....	74,165	43,646	27,065	47,100
Per cent outside state.....	59.5	61.9	62.7	57.8
Native negro population.....	1,978	1,764	1,297	681
Born in state.....	237	264	123	164
Born outside state <sup>2</sup> .....	1,691	1,500	1,174	517
Per cent outside state.....	85.5	85.0	90.5	75.9
Native Indian population.....	28,674	26,300	576	28,098
Born in state.....	28,135	25,627	566	27,569
Born outside state <sup>2</sup> .....	539	673	10	529
Per cent outside state.....	1.9	2.6	1.7	1.9

<sup>1</sup> Comparable figures for 1890 not available on account of the large number of native-born persons (28,623) specially enumerated at that census and not distributed by state of birth.

<sup>2</sup> Includes persons born in United States, state not specified; persons born in outlying possessions, or at sea under United States flag; and American citizens born abroad.

TABLE 4.—STATE OR DIVISION OF BIRTH.

PLACE OF BIRTH.	NUMBER.		PER CENT OF TOTAL.	
	1910	1900	1910	1900
Total native.....	155,589	98,698	100.0	100.0
Arizona.....	78,949	52,780	50.7	53.5
Other states.....	76,640	45,918	49.3	46.5
Texas.....	10,139	4,510	6.5	4.6
California.....	6,101	5,099	3.9	5.2
Missouri.....	5,206	3,137	3.3	3.2
Illinois.....	4,700	2,659	3.0	2.7
New Mexico.....	4,477	3,351	2.9	3.4
Ohio.....	3,549	2,100	2.3	2.1
New York.....	3,082	2,324	2.0	2.4
Pennsylvania.....	2,818	1,672	1.8	1.7
Kansas.....	2,756	1,481	1.8	1.5
Utah.....	2,079	3,152	1.7	3.2
Iowa.....	2,417	1,453	1.6	1.5
Indiana.....	2,289	1,248	1.5	1.3
Kentucky.....	2,168	1,189	1.4	1.2
Michigan.....	2,100	964	1.3	1.0
Colorado.....	2,035	742	1.3	0.8
Tennessee.....	1,878	783	1.0	0.8
Arkansas.....	1,542	814	1.0	0.8
All other <sup>1</sup> .....	17,004	9,190	10.9	9.3
<b>DIVISIONS.</b>				
New England.....	1,987	1,521	1.3	1.5
Middle Atlantic.....	6,324	4,274	4.1	4.3
East North Central.....	14,057	7,767	9.0	7.9
West North Central.....	12,263	6,934	7.9	7.0
South Atlantic.....	3,732	2,230	2.4	2.3
East South Central.....	5,428	2,940	3.5	3.0
West South Central.....	13,336	5,809	8.6	5.9
Mountain.....	89,425	60,836	57.5	61.6
Pacific.....	7,096	5,638	4.6	5.7
Other <sup>1</sup> .....	1,941	740	1.2	0.8

<sup>1</sup> Includes persons born in United States, state not specified; persons born in outlying possessions, or at sea under United States flag; and American citizens born abroad.

TABLE 5.—FOREIGN WHITE STOCK, BY NATIONALITY.

FOREIGN COUNTRY IN WHICH BORN, OR, IF NATIVE, IN WHICH PARENTS WERE BORN.	WHITE POPULATION OF FOREIGN BIRTH OR FOREIGN PARENTAGE: 1910						Foreign-born white population: 1900
	Total.		Foreign born.		Native.		
	Num-ber.	Per cent.	Num-ber.	Per cent.	Both parents foreign born.	One parent foreign born.	
All countries.....	89,000	100.0	46,824	100.0	26,117	16,059	22,395
Austria.....	1,934	2.2	1,483	3.2	331	120	318
Canada—French.....	410	0.5	177	0.4	78	155	182
Canada—Other.....	3,509	3.9	1,641	3.5	422	1,446	1,107
Denmark.....	702	0.8	284	0.6	172	246	199
England.....	7,274	8.2	3,600	7.5	1,474	2,300	1,660
Finland.....	696	0.8	557	1.2	130	9	32
France.....	698	0.8	323	0.7	157	218	253
Germany.....	5,656	6.4	1,846	3.9	2,198	1,612	1,245
Hungary.....	178	0.2	115	0.2	40	17	22
Ireland.....	4,901	5.5	1,560	3.3	1,985	1,366	1,159
Italy.....	2,189	2.5	1,531	3.3	555	103	699
Mexico.....	51,102	57.4	29,452	62.9	14,871	6,779	13,061
Montenegro.....	300	0.4	345	0.7	15	.....	.....
Norway.....	542	0.6	272	0.6	164	100	123
Russia.....	460	0.5	311	0.7	111	38	119
Scotland.....	1,522	1.7	576	1.2	362	584	399
Spain.....	916	1.0	855	1.8	25	36	51
Sweden.....	1,574	1.8	845	1.8	427	302	342
Switzerland.....	632	0.7	314	0.7	133	185	199
Turkey.....	232	0.3	172	0.4	56	4	20
Wales.....	561	0.6	210	0.4	123	228	136
All other.....	12,952	14.5	465	1.0	2,282	205	290

<sup>1</sup> Includes native whites whose parents were born in different foreign countries; for example, one parent in Ireland and the other in Scotland.

TABLE 6.—MALES OF VOTING AND MILITIA AGES.

CLASS OF POPULATION.	MALES OF VOTING AGE—21 AND OVER.				MALES OF MILITIA AGE—18 TO 44.	
	Number.		Per cent.		1910	1900
	1910	1900	1910	1900		
Total.....	74,051	44,081	100.0	100.0	58,982	34,231
White.....	65,097	34,811	87.9	79.2	52,467	27,427
Negro.....	764	1,084	1.0	2.5	505	1,047
Indian.....	6,701	6,540	9.0	14.8	5,114	4,583
Chinese and Japanese.....	1,489	1,546	2.0	3.5	813	1,169
Native white.....	39,415	22,750	53.2	51.6	31,788	18,581
Native parentage.....	28,752	16,183	38.8	36.7	22,529	12,566
Foreign or mixed parentage.....	10,663	6,567	14.4	14.9	9,259	6,025
Foreign-born white.....	25,632	12,161	34.7	27.6	20,079	8,546

TABLE 7.—AGE, FOR THE STATE.  
[Per cent not shown where base is less than 100.]

AGE PERIOD.	TOTAL POPULATION.				NATIVE WHITE.				FOREIGN-BORN WHITE.		NEGRO.		INDIAN.		CHINESE AND JAPANESE.			
	1910	1900	Male.		Male.		Female.		Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
			Male.	Female.	Male.	Female.	Male.	Female.										
All ages, number.....	204,354	122,931	118,574	85,780	47,370	35,098	22,815	19,261	30,586	16,238	1,054	955	15,056	14,145	1,593	83		
Under 5 years.....	24,778	14,785	12,571	12,207	5,652	5,478	4,076	3,910	533	523	80	76	2,220	2,209	10	11		
Under 1 year.....	5,110	3,153	2,586	2,530	1,212	1,186	971	934	50	37	17	16	332	353	4	4		
5 to 9 years.....	21,017	13,999	11,191	10,720	4,797	4,558	3,075	2,979	1,018	1,020	82	80	2,211	2,073	8	10		
10 to 14 years.....	18,091	11,671	9,426	8,665	3,899	3,685	2,513	1,059	1,014	65	65	65	1,873	1,618	17	13		
15 to 19 years.....	17,389	10,412	9,002	8,387	3,532	3,344	2,160	2,195	1,543	1,235	53	53	1,661	1,624	53	6		
20 to 24 years.....	20,756	11,781	12,249	8,507	4,715	3,511	2,134	1,921	4,124	1,870	75	117	1,078	1,081	123	7		
25 to 29 years.....	21,975	11,699	13,480	8,495	5,188	3,541	1,930	1,714	5,082	2,156	118	133	1,001	943	161	8		
30 to 34 years.....	18,446	10,452	11,401	7,045	4,480	2,895	1,692	1,377	4,138	1,830	106	103	818	832	107	8		
35 to 39 years.....	10,077	9,295	10,062	6,015	3,770	2,430	1,520	1,042	3,641	1,649	150	100	837	780	144	8		
40 to 44 years.....	12,250	7,891	7,855	4,395	2,903	1,593	1,114	728	2,800	1,336	100	70	759	690	179	8		
45 to 49 years.....	9,484	5,872	6,237	3,247	2,380	1,198	973	465	2,031	1,019	69	66	627	498	257	1		
50 to 54 years.....	7,711	4,938	5,127	2,534	2,051	981	745	299	1,580	844	50	20	485	439	210	1		
55 to 59 years.....	4,858	2,939	3,292	1,506	1,357	633	417	159	1,025	483	37	12	312	278	144	1		
60 to 64 years.....	4,191	2,580	2,695	1,496	1,032	504	254	88	907	498	23	18	396	387	83	1		
65 to 74 years.....	4,069	2,422	2,516	1,553	995	534	225	74	778	503	27	7	465	435	26			
75 to 84 years.....	1,390	727	847	543	327	158	50	17	224	180	6	1	237	187	3			
85 to 94 years.....	283	126	143	140	23	25	11	4	35	29	1	1	68	81				
95 years and over.....	52	53	23	29	4	2			4	10			15	10				
Age unknown.....	637	1,289	457	180	260	53	26	19	64	33	6	2	93	68	8			
All ages, per cent.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Under 5 years.....	12.1	12.0	10.6	14.2	11.9	15.6	17.8	20.3	1.7	3.2	7.6	8.0	14.7	15.6	0.6			
5 to 9 years.....	10.7	11.4	9.4	12.5	10.1	13.0	13.4	15.5	3.3	6.3	7.8	8.4	14.7	14.7	0.5			
10 to 14 years.....	8.9	9.5	7.9	10.1	8.2	10.5	11.0	11.8	3.5	6.2	6.2	6.8	12.4	11.4	1.1			
15 to 19 years.....	8.5	8.5	7.6	9.8	7.5	9.5	9.4	11.4	5.0	7.6	5.0	8.7	11.0	10.8	3.3			
20 to 24 years.....	10.2	9.6	10.3	9.9	10.0	10.0	9.3	10.0	13.5	11.5	7.1	12.3	7.2	7.6	7.7			
25 to 34 years.....	19.8	13.0	21.0	18.1	20.4	18.3	15.8	16.0	30.1	24.5	21.3	24.7	12.1	12.5	20.6			
35 to 44 years.....	13.9	14.0	15.1	12.1	14.1	11.4	11.5	9.2	21.1	18.4	23.7	17.8	10.6	10.4	20.3			
45 to 64 years.....	12.8	13.8	14.6	10.4	14.4	9.4	10.4	5.2	18.1	17.6	17.6	12.1	11.4	11.3	43.6			
65 years and over.....	2.8	2.7	3.0	2.6	2.9	2.0	1.2	0.5	3.4	4.4	3.2	1.0	5.2	5.1	1.8			

TABLE 8.—AGE, FOR URBAN AND RURAL POPULATION.

AGE PERIOD.	TOTAL.				NATIVE WHITE.				FOREIGN-BORN WHITE.				NEGRO.				INDIAN.			
	Male.		Female.		Male.		Female.		Male.		Female.		Male.		Female.		Male.		Female.	
	Urban.	Rural.	Urban.	Rural.	Urban.	Rural.	Urban.	Rural.	Urban.	Rural.	Urban.	Rural.	Urban.	Rural.	Urban.	Rural.	Urban.	Rural.	Urban.	Rural.
All ages, number.....	35,264	83,310	27,996	57,784	23,573	46,712	19,593	34,766	9,831	20,655	7,258	8,980	628	428	684	271	379	14,677	394	13,751
Under 5 years.....	3,374	9,197	3,343	8,864	3,072	6,656	3,032	6,356	194	339	186	337	43	37	53	23	58	2,102	64	2,145
Under 1 year.....	727	1,859	729	1,801	686	1,497	686	1,434	14	36	16	21	10	7	10	6	15	317	15	338
5 to 9 years.....	2,922	8,269	2,954	7,772	2,417	5,455	2,419	5,118	408	610	439	587	49	33	40	34	44	2,187	49	2,080
10 to 14 years.....	2,643	6,783	2,533	6,127	2,103	4,309	1,967	3,988	443	616	489	525	40	25	36	20	44	1,829	36	1,582
15 to 19 years.....	2,480	6,516	2,697	5,690	1,902	3,790	2,035	3,504	489	1,054	535	700	31	22	58	25	42	1,619	64	1,460
20 to 24 years.....	3,721	8,528	3,135	5,372	2,403	4,446	2,145	3,287	1,184	2,940	852	1,018	47	28	89	28	28	1,050	44	1,037
25 to 34 years.....	8,083	16,798	5,821	9,719	4,860	8,480	3,794	5,783	2,894	6,326	1,766	2,220	145	79	190	40	63	1,756	57	1,718
35 to 44 years.....	5,784	12,133	3,806	6,604	3,288	6,019	2,921	3,472	2,139	4,302	1,341	1,644	146	104	124	46	44	1,562	36	1,440
45 to 64 years.....	5,211	12,140	3,017	5,876	2,895	6,314	1,587	2,740	1,833	3,710	1,312	1,532	103	82	80	30	39	1,681	34	1,568
65 years and over.....	821	2,708	622	1,643	447	1,193	288	520	327	714	310	403	17	17	6	4	12	773	9	710
Age unknown.....	219	238	63	117	186	100	35	42	20	44	19	14	5	1	2		5	88	7	61
All ages, per cent.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Under 5 years.....	9.6	11.0	11.9	15.3	13.0	14.2	15.5	18.3	2.0	1.6	2.6	3.8	6.9	8.6	7.7	8.5	15.3	14.7	16.2	15.6
5 to 9 years.....	8.3	9.9	10.6	13.4	10.3	11.7	12.3	14.7	4.1	3.0	6.0	6.5	7.8	7.7	6.7	12.5	11.6	14.8	10.9	14.8
10 to 14 years.....	7.5	8.1	9.1	10.6	8.9	9.2	10.0	11.5	4.5	3.0	6.7	5.8	6.4	5.8	5.3	10.7	11.6	12.5	9.1	11.6
15 to 19 years.....	7.0	7.8	9.6	9.8	8.1	9.1	10.4	10.1	4.9	5.1	7.4	7.8	5.0	5.1	8.5	9.2	11.1	11.0	16.2	10.6
20 to 24 years.....	10.6	10.2	11.2	9.3	10.2	9.5	10.9	9.5	11.9	14.2	11.7	11.3	7.5	6.5	13.0	10.3	7.4	7.2	11.2	7.5
25 to 34 years.....	22.9	20.2	20.8	16.8	20.6	18.0	19.4	16.5	29.1	30.6	24.3	24.7	23.2	18.5	27.8	17.0	16.6	12.0	14.5	12.5
35 to 44 years.....	16.4	14.6	13.6	11.4	13.9	12.9	11.7	10.0	21.5	20.8	18.5	18.3	23.3	24.3	18.1	17.0	11.6	10.6	9.1	10.5
45 to 64 years.....	14.8	14.6	10.8	10.2	12.3	13.5	8.1	7.9	18.5	18.0	18.1	17.1	16.5	19.2	11.7	13.3	10.3	11.5	8.6	11.4
65 years and over.....	2.3	3.3	2.2	2.8	1.9	2.6	1.5	1.5	3.3	3.6	4.4	2.7	4.0	0.9	1.5	3.2	5.3	2.3	5.2	

TABLE 9.—SCHOOL ATTENDANCE.  
[Per cent not shown where base is less than 100.]

AGE PERIOD.	TOTAL.			NATIVE WHITE.						FOREIGN-BORN WHITE.			NEGRO.			INDIAN.				
	Number.	Attending school.		Native parentage.		Foreign or mixed par.		Foreign or mixed par.		Attending school.		Number.	Attending school.		Number.	Attending school.		Number.	Attending school.	
		Number.	Number.	Per cent.	Number.	Number.	Per cent.	Number.	Number.	Per cent.	Number.		Number.	Per cent.		Number.	Number.		Per cent.	Number.
THE STATE.																				
6 to 20 years, inclusive.....	58,897	30,355	53.4	23,167	15,468	66.8	14,712	8,436	57.3	7,658	2,704	35.3	416	251	60.3	10,821	3,449	31.9		
Male.....	29,496	15,472	52.5	11,879	7,750	65.2	7,470	4,257	57.0	4,185	1,375	32.9	193	122	63.2	5,676	1,941	34.2		
Female.....	27,401	14,883	54.3	11,288	7,718	68.4	7,242	4,179	57.7	3,473	1,329	38.3	223	129	57.8	5,145	1,508	29.3		
6 to 9 years.....</																				

# STATISTICS OF POPULATION.

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TABLE 10.—ILLITERATE PERSONS 10 YEARS OF AGE AND OVER.

CLASS OF POPULATION.	BOTH SEXES.		MALE.		FEMALE.		CLASS OF POPULATION.	BOTH SEXES.		MALE.		FEMALE.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.		Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
THE STATE.													
Total illiterate, 1910.....	32,953	20.9	18,183	19.2	14,770	23.5	Total illiterate, 1910.....	5,036	9.9	2,494	8.6	2,542	11.7
Native white.....	3,776	4.2	1,896	3.6	1,880	5.0	Native white.....	331	2.6	360	2.0	471	3.3
Native parentage.....	1,414	2.3	692	1.9	722	2.9	Native parentage.....	220	1.0	84	0.7	136	1.5
Foreign or mixed parentage.....	2,362	8.4	1,204	7.6	1,158	9.4	Foreign or mixed parentage.....	611	5.5	276	4.7	335	6.4
Foreign-born white.....	13,768	31.5	8,605	29.6	5,163	35.1	Foreign-born white.....	3,576	22.4	1,740	18.7	1,836	27.7
Negro.....	122	7.2	68	7.6	54	6.8	Negro.....	64	5.7	27	5.1	37	6.3
Indian.....	14,930	72.9	7,269	68.4	7,670	77.8	Indian.....	374	66.3	188	67.9	186	64.8
RURAL POPULATION.													
Total illiterate, 1900.....	27,307	29.0	14,404	25.3	12,903	34.8	Total illiterate, 1910.....	27,917	28.1	15,089	23.8	12,828	29.7
Native white.....	3,096	6.2	1,652	5.4	1,444	7.4	Native white.....	2,945	5.1	1,536	4.4	1,409	6.0
Native parentage.....	1,266	3.8	690	3.3	576	4.6	Native parentage.....	1,104	2.9	608	2.5	496	3.6
Foreign or mixed parentage.....	1,830	10.9	962	9.8	868	12.5	Foreign or mixed parentage.....	1,751	10.3	928	9.4	823	11.5
Foreign-born white.....	7,552	35.3	4,318	31.5	3,234	42.0	Foreign-born white.....	10,182	36.7	6,865	34.8	3,317	41.2
Negro.....	211	12.7	129	10.2	82	20.4	Negro.....	58	10.1	41	11.5	17	7.9
Indian.....	16,049	83.1	7,921	80.6	8,128	85.7	Indian.....	14,565	73.1	7,081	68.4	7,484	78.2

TABLE 11.—MARITAL CONDITION OF PERSONS 15 YEARS OF AGE AND OVER.  
[Per cent not shown where base is less than 100.]

CLASS OF POPULATION AND AGE PERIOD.	MALES 15 YEARS OF AGE AND OVER.						FEMALES 15 YEARS OF AGE AND OVER.							
	Total. <sup>1</sup>	Single.		Married.		Wid-owed.	Di-voiced.	Total. <sup>1</sup>	Single.		Married.		Wid-owed.	Di-voiced.
		Number.	Per cent.	Number.	Per cent.				Number.	Per cent.	Number.	Per cent.		
THE STATE.														
Total, 1910.....	85,386	39,106	45.8	40,708	47.7	3,723	681	54,182	12,035	22.2	35,601	65.7	5,668	533
Total, 1900.....	61,014	26,262	43.0	22,267	36.5	2,588	345	31,403	6,620	21.0	20,890	64.8	3,971	310
15 to 19 years.....	9,002	8,006	89.6	184	2.0	8	9	8,387	6,492	77.4	1,704	20.3	40	27
20 to 24 years.....	12,249	9,426	77.0	2,822	23.0	43	18	8,507	2,697	31.7	6,487	64.5	177	70
25 to 34 years.....	24,881	11,213	45.1	12,017	51.9	316	139	15,540	1,863	12.0	12,822	82.5	627	170
35 to 44 years.....	17,917	5,010	28.0	11,923	66.5	671	187	10,410	579	5.6	8,961	83.2	1,025	130
45 years and over.....	20,880	4,761	22.8	13,055	62.5	2,604	303	11,168	381	3.4	6,865	61.3	3,770	133
Age unknown.....	457	90	19.7	107	23.4	21	5	180	23	12.8	92	51.1	29	3
Native white:														
Native parentage <sup>2</sup> .....	33,022	15,351	46.5	15,354	46.5	1,410	313	21,377	5,121	24.0	14,187	66.4	1,742	183
15 to 24 years.....	8,247	7,164	86.9	878	10.6	12	6	6,855	3,894	56.8	2,804	40.9	45	29
25 to 44 years.....	16,341	6,295	38.5	9,301	57.3	339	147	10,429	1,079	10.3	8,721	83.6	483	114
45 years and over.....	8,174	1,841	22.5	5,083	62.2	1,060	166	4,035	138	3.4	2,041	65.5	1,209	40
Foreign or mixed parentage <sup>2</sup> .....	13,251	7,127	53.8	5,399	40.7	448	117	10,102	3,261	32.3	6,085	60.2	625	66
15 to 24 years.....	4,294	3,810	88.9	393	9.2	7	5	4,116	2,607	63.3	1,399	33.9	53	10
25 to 44 years.....	6,256	2,493	39.7	3,493	55.8	150	61	4,861	597	12.3	3,916	80.6	290	45
45 years and over.....	2,675	821	30.7	1,500	55.1	289	51	1,106	62	4.7	706	68.3	277	10
Foreign-born white <sup>2</sup> .....	27,976	13,070	46.7	13,392	47.9	1,186	115	13,675	2,068	15.0	9,326	68.2	2,168	74
15 to 24 years.....	5,667	4,750	83.8	831	14.7	12	1	3,105	1,335	43.0	1,674	53.9	57	7
25 to 44 years.....	15,061	6,615	42.2	8,588	54.8	308	49	9,971	575	8.2	5,717	57.2	616	52
45 years and over.....	6,584	1,684	25.6	3,950	60.0	857	65	3,566	145	4.1	1,921	53.9	1,472	15
Negro <sup>2</sup> .....	827	313	37.8	434	52.5	54	16	734	167	22.8	402	54.8	141	22
15 to 24 years.....	128	100	78.1	26	20.3	.....	.....	200	102	51.0	83	41.5	8	5
25 to 44 years.....	474	145	30.6	286	60.3	23	13	406	60	14.8	265	65.2	76	15
45 years and over.....	219	66	30.1	120	54.8	30	3	126	5	4.0	63	50.0	56	2
Indian <sup>2</sup> .....	8,752	2,496	28.5	5,389	61.0	590	98	8,245	1,411	17.1	5,570	67.6	1,001	188
15 to 24 years.....	2,739	2,056	75.0	663	20.0	20	15	2,605	1,244	47.8	1,228	47.1	54	46
25 to 44 years.....	3,415	337	9.9	2,830	82.9	158	56	3,251	121	3.7	2,852	87.7	187	74
45 years and over.....	2,505	97	3.9	1,959	78.2	408	27	2,321	41	1.8	1,441	62.1	755	66
URBAN POPULATION.														
Total.....	26,325	12,306	46.7	12,567	47.7	1,058	167	19,161	4,935	25.8	11,652	60.8	2,331	191
15 to 24 years.....	6,207	5,447	87.8	703	11.3	14	5	5,832	3,472	59.5	2,232	38.3	80	29
25 to 44 years.....	13,867	5,496	39.6	7,925	57.2	304	89	9,627	1,281	13.3	7,874	76.6	825	134
45 years and over.....	6,032	1,311	21.7	3,013	64.9	729	50	3,639	171	4.7	2,027	55.7	1,408	28
Age unknown.....	219	52	23.7	26	11.9	11	4	63	11	.....	10	.....	.....	
Native white—Native parentage.....	11,135	5,231	47.0	5,205	46.7	452	78	7,838	2,046	26.1	4,922	62.8	748	91
Native white—Foreign or mixed parentage.....	4,846	2,618	54.0	2,041	42.1	130	35	4,337	1,608	36.2	2,406	55.5	321	36
Foreign-born white.....	8,886	3,895	43.8	4,499	50.6	430	32	6,144	1,094	17.8	3,863	62.9	1,120	48
Negro.....	494	162	32.8	201	58.9	28	11	549	124	22.6	296	53.9	111	10
Indian.....	233	70	30.0	145	62.2	9	.....	261	87	34.7	140	55.8	24	.....
RURAL POPULATION.														
Total.....	59,061	26,800	45.4	28,141	47.6	2,665	504	35,021	7,100	20.3	23,949	68.4	3,337	342
15 to 24 years.....	15,044	12,585	83.7	2,003	13.3	37	22	11,062	5,717	51.7	4,969	44.8	137	68
25 to 44 years.....	28,931	10,727	37.1	16,915	58.5	683	237	16,323	1,161	7.1	14,109	86.4	827	166
45 years and over.....	14,845	3,450	23.2	9,142	61.6	1,935	244	7,519	210	2.8	4,808	63.9	2,362	105
Age unknown.....	238	38	16.0	81	34.0	10	1	117	12	10.3	73	62.4	11	3
Native white—Native parentage.....	21,887	10,120	46.2	10,149	46.4	904	235	13,539	3,075	22.7	9,265	68.4	994	92
Native white—Foreign or mixed parentage.....	8,405	4,509	53.6	3,358	40.0	318	82	5,765	1,693	29.4	3,679	63.8	804	30
Foreign-born white.....	19,090	9,176	48.1	8,893	46.6	766	83	7,531	964	12.8	5,463	72.5	1,032	26
Negro.....	333	151	45.3	143	42.9	26	5	185	43	23.2	106	57.3	30	6
Indian.....	8,519	2,420	28.4	5,244	61.6	581	98	7,994	1,324	16.6	5,430	67.9	977	183

<sup>1</sup> Total includes persons whose marital condition is unknown.

<sup>2</sup> Totals include persons of unknown age.

## SUPPLEMENT FOR ARIZONA.

TABLE 12.—INDIAN, CHINESE, AND JAPANESE POPULATION, BY COUNTIES.

COUNTY.	INDIAN.			CHINESE.			JAPANESE.		
	1910	1900	1890	1910	1900	1890	1910	1900	1890
The state.....	29,201	<sup>1</sup> 28,480	<sup>2</sup> 29,981	1,305	<sup>3</sup> 1,419	1,170	371	281	1
Apache.....	6,131	5,540	5	1	.....	16	.....	.....	.....
Cochise.....	26	11	1	93	111	173	7	1	.....
Cocoino.....	2,788	1,206	.....	46	86	.....	10	100	.....
Gila.....	2,508	729	.....	128	49	40	19	5	.....
Graham.....	450	34	3	141	140	86	5	3	.....
Maricopa.....	3,099	3,084	1	189	135	234	135	13	.....
Mohave.....	541	1,237	9	52	50	28	2	67	.....
Navajo.....	5,752	5,099	.....	13	41	.....	38	16	.....
Pima.....	3,495	2,502	904	285	254	299	41	9	1
Pinal.....	3,139	2,999	138	30	54	64	9	2	.....
Santa Cruz.....	6	4	.....	55	44	.....	1	.....	.....
Yavapai.....	479	268	27	227	394	169	72	65	.....
Yuma.....	787	683	424	45	59	61	32	.....	.....

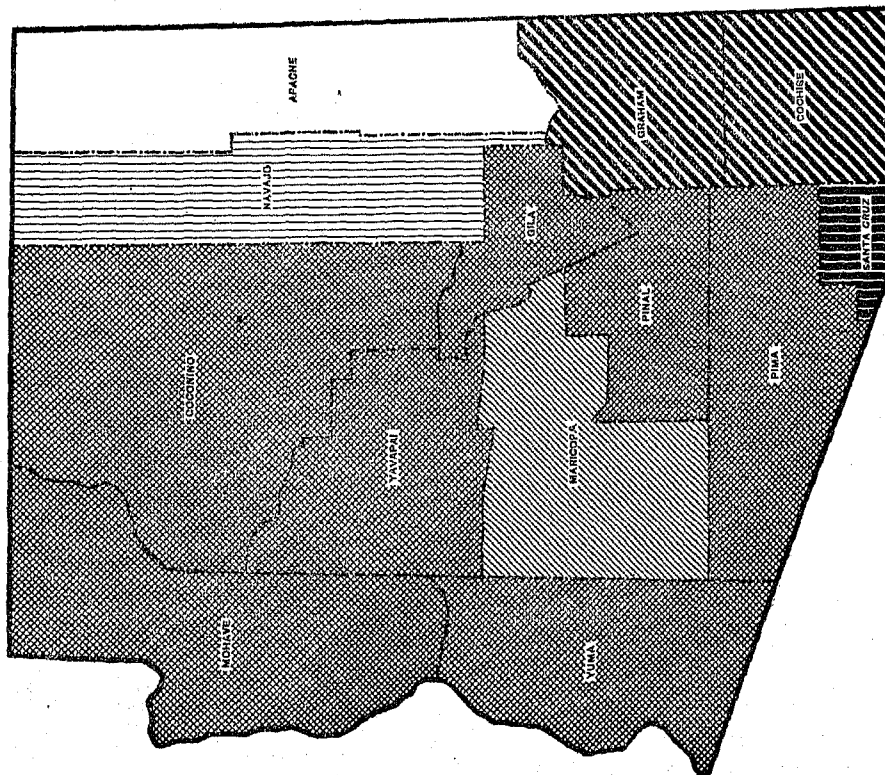
<sup>1</sup> Includes 3,024 Indians on San Carlos Indian Reservation, in Gila and Graham Counties, not returned by counties in 1900.

<sup>2</sup> Includes 28,469 Indians specially enumerated in 1890, not distributed by counties.

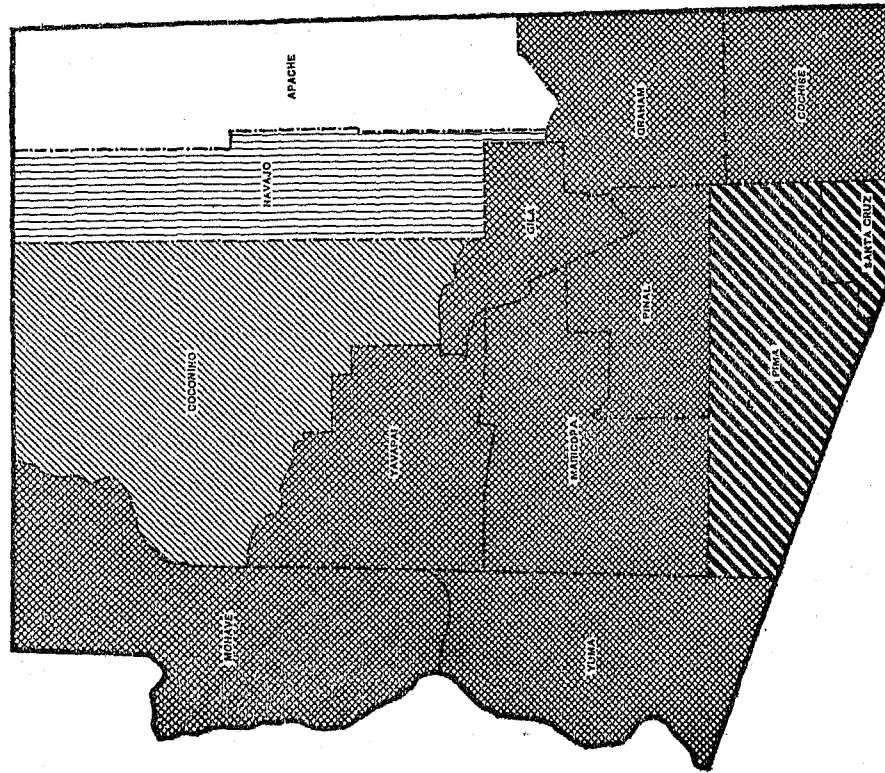
<sup>3</sup> Includes 2 Chinese on San Carlos Indian Reservation, in Gila and Graham Counties, not returned by counties in 1900.

PROPORTION OF FOREIGN-BORN WHITE AND NATIVE WHITE OF FOREIGN OR MIXED PARENTAGE OF ARIZONA, BY COUNTIES: 1910.

PER CENT OF FOREIGN-BORN WHITE IN TOTAL POPULATION.



PER CENT OF NATIVE WHITE OF FOREIGN OR MIXED PARENTAGE IN TOTAL POPULATION.



- Less than 5 per cent.
- 5 to 10 per cent.
- 10 to 15 per cent.
- 15 to 25 per cent.
- 25 to 35 per cent.
- 35 to 50 per cent.
- 50 per cent and over.

TABLE I.—COMPOSITION AND CHARACTERISTICS OF THE

[Per cent not shown where base is less than 100.]

SUBJECT.	THE STATE.	Apache. <sup>1</sup>	Cochise. <sup>1</sup>	Coconino. <sup>1</sup>	Gila. <sup>1</sup>	Graham. <sup>1</sup>	Maricopa. <sup>1</sup>
<b>POPULATION</b>							
Total population, 1910.....	204,354	9,196	34,591	8,130	16,348	23,999	34,488
1900.....	<sup>2</sup> 122,931	8,297	9,251	5,514	<sup>3</sup> 4,973	<sup>4</sup> 14,162	20,457
1890.....	<sup>5</sup> 88,243	4,281	6,938		2,021	5,070	10,986
1880.....	40,440	5,283					5,689
1870.....	9,658						
Increase, 1900-1910.....	81,423	899	25,340	2,616	<sup>3</sup> 11,375	<sup>4</sup> 9,837	14,031
Per cent of increase.....	66.2	10.8	273.9	47.4	<sup>3</sup> 228.7	<sup>4</sup> 69.5	68.6
Increase, 1890-1900.....	34,688	<sup>6</sup> 1,325	2,313	<sup>6</sup> 4,401	<sup>6</sup> 2,243	8,492	<sup>6</sup> 7,020
Per cent of increase.....	39.3	<sup>6</sup> 31.0	33.3		<sup>6</sup> 111.0	140.8	<sup>6</sup> 63.9
Land area (square miles).....	113,810	11,370	6,170	18,238	4,683	6,508	8,891
Population per square mile, 1910.....	1.8	0.8	5.6	0.4	3.5	3.7	3.9
Rural population per square mile, 1910.....	1.2	0.8	3.1	0.4	2.0	2.0	2.6
<b>URBAN AND RURAL TERRITORY.</b>							
Urban, 1910—Places of 2,500 or more in 1910.....	63,280		15,456		7,083	4,874	11,134
Same places in 1900.....	21,409				1,495		5,544
Per cent of increase, 1900-1910.....	195.5				373.8		100.8
Rural, 1910—Remainder of county in 1910.....	141,094	9,196	19,135	8,130	<sup>3</sup> 9,265	<sup>4</sup> 19,125	23,354
Same territory in 1900.....	<sup>2</sup> 101,522	8,297	9,251	5,514	<sup>3</sup> 3,478	<sup>4</sup> 14,162	14,913
Per cent of increase, 1900-1910.....	39.0	10.8	106.8	47.4	<sup>3</sup> 166.4	<sup>4</sup> 35.0	56.6
Urban, 1900—Places of 2,500 or more in 1900.....	19,495						5,544
Rural, 1900—Remainder of county in 1900.....	103,436	8,297	9,251	5,514	<sup>3</sup> 4,973	<sup>4</sup> 14,162	14,913
Per cent in places of 2,500 or more, 1910.....	31.0		44.7		43.3	20.3	32.3
Per cent in places of 2,500 or more, 1900.....	15.9						27.1
<b>COLOR AND NATIVITY</b>							
White.....	171,468	3,056	33,987	5,251	13,467	23,291	30,500
Number in 1900.....	<sup>2</sup> 92,903	2,765	8,863	4,069	4,142	13,917	17,015
Number in 1890.....	<sup>7</sup> 56,734	3,931	6,742		1,705	5,076	10,674
Negro.....	2,009	8	478	35	220	112	469
Number in 1900.....	1,848	2	275	65	43	68	310
Number in 1890.....	1,357	329	22		376	605	77
Black.....	1,501	3	442	23	208	65	276
Mulatto.....	448	5	36	12	18	47	193
Indian, Chinese, and Japanese (see Tables 1 and 12).....	30,877	6,132	126	2,844	2,655	596	3,423
Native white—Native parentage.....	82,468	2,490	15,087	2,590	6,680	9,556	18,364
Number in 1900.....	<sup>2</sup> 44,330	<sup>2</sup> 170	<sup>3</sup> 7,732	<sup>2</sup> 566	<sup>2</sup> 4,488	<sup>2</sup> 6,621	<sup>2</sup> 10,138
Native white—Foreign or mixed parentage.....	42,176	376	7,773	940	2,910	5,584	7,200
Number in 1900.....	<sup>2</sup> 23,678	<sup>2</sup> 426	<sup>2</sup> 4,590	<sup>2</sup> 898	<sup>2</sup> 847	<sup>2</sup> 3,452	<sup>2</sup> 4,101
Native white—Foreign parentage.....	26,117	162	5,162	522	1,742	3,841	4,027
Native white—Mixed parentage.....	16,059	214	2,611	427	1,168	1,743	3,173
Foreign-born white.....	46,824	190	11,127	1,712	3,877	8,151	5,032
Number in 1900.....	<sup>2</sup> 23,395	<sup>2</sup> 159	<sup>2</sup> 6,631	<sup>2</sup> 635	<sup>2</sup> 809	<sup>2</sup> 3,844	<sup>2</sup> 2,672
<b>PER CENT OF TOTAL POPULATION.</b>							
Native white—Native parentage.....	40.4	27.1	43.6	31.9	40.9	39.8	53.2
Per cent in 1900.....	36.5	26.2	40.3	46.5	50.0	45.3	49.8
Native white—Foreign or mixed parentage.....	20.6	4.1	22.5	11.7	17.8	23.3	20.9
Per cent in 1900.....	20.9	5.1	26.9	15.7	17.0	24.4	20.3
Foreign-born white.....	22.9	2.1	32.2	21.1	23.7	34.0	14.6
Per cent in 1900.....	18.2	1.9	28.4	11.5	16.3	27.1	15.1
<b>FOREIGN NATIONALITIES</b>							
<b>FOREIGN-BORN WHITE: Born in—</b>							
Australia.....	74	1	21	10	8	2	8
Austria.....	1,483		664	24	207	12	78
Canada—French.....	177		54	11	21	4	38
Canada—Other.....	1,641	5	393	85	127	103	329
Denmark.....	284	8	34	8	14	24	93
England.....	3,500	19	1,464	41	680	326	352
Finland.....	557		470	11	24		8
France.....	323	9	74	15	23	17	41
Germany.....	1,846	13	458	88	138	97	357
Hungary.....	115		37	2	12		20
Ireland.....	1,550	3	547	64	145	40	206
Italy.....	1,531		242	16	302	396	87
Mexico.....	29,452	95	5,512	1,031	1,609	0,609	2,927
Montenegro.....	345		113		193	1	5
Norway.....	272		85	24	23	9	52
Russia.....	311	3	89	15	32	9	65
Scotland.....	576	7	150	19	42	103	72
Spain.....	855	7	140	59	46	323	9
Sweden.....	845	4	300	116	68	27	111
Switzerland.....	314	5	66	11	17	19	77
Turkey.....	172	2	51	23	18	21	20
Wales.....	210	2	96	5	10	9	29
Other foreign countries.....	391	3	67	34	29	20	98
<b>NATIVE WHITE: Both parents born in—</b>							
Austria.....	331		168	6	50	5	26
Canada—French.....	78		23	1	7	3	20
Canada—Other.....	422	4	99	20	29	26	83
Denmark.....	172	28	17	11	3	28	29
England.....	1,474	33	471	22	259	154	105
France.....	157		33	10	21	9	13
Germany.....	2,198	25	461	119	182	115	500
Ireland.....	1,985	19	561	105	183	53	280
Italy.....	555		145	2	112	122	32
Norway.....	164	1	53	6	18	5	53
Russia.....	111	1	41	7	10	8	27
Scotland.....	362	1	96	11	44	37	52
Sweden.....	427	10	146	42	35	20	87
Switzerland.....	133	1	30	2	12	7	30
Wales.....	123		36	5	7	9	23
All others of foreign parentage.....	17,425	39	2,782	153	770	3,240	2,567

<sup>1</sup> For changes in boundaries, etc., see page 589.  
<sup>2</sup> State total includes population (3,056) of San Carlos Indian Reservation, in Gila and Graham Counties, not returned by counties in 1900, distributed by color and nativity as follows: Native white—native parentage, 27; native white—foreign or mixed parentage, 9; foreign-born white, 3; Indian, 3,024; and Chinese, 2.  
<sup>3</sup> See Note 1 on page 589.  
<sup>4</sup> See Note 2 on page 589.  
<sup>5</sup> State total includes population (23,623) of Indian reservations specially enumerated in 1890, not distributed by counties.  
<sup>6</sup> See Note 3 on page 589.

# STATISTICS OF POPULATION.

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## POPULATION FOR THE STATE AND FOR COUNTIES.

A minus sign (-) denotes decrease.]

SUBJECT.	THE STATE.	Apache. <sup>1</sup>	Cochise. <sup>1</sup>	Cocoonino. <sup>1</sup>	Gila. <sup>1</sup>	Graham. <sup>1</sup>	Maricopa. <sup>1</sup>
<b>SEX</b>							
Total.. Male.....	118,574	4,766	20,242	5,126	10,126	13,795	19,253
Female.....	85,780	4,430	14,349	3,004	6,222	10,204	15,235
White.. Male.....	100,871	1,653	19,902	3,560	8,402	13,353	17,050
Female.....	70,597	1,403	14,085	1,691	4,865	9,933	13,546
Negro.. Male.....	1,054	6	230	21	117	59	228
Female.....	955	2	248	14	109	53	241
<b>MALES OF VOTING AGE</b>							
Total number.....	74,051	2,078	13,375	3,245	6,953	7,751	11,841
Number in 1900.....	44,081	1,880	8,969	2,419	2,096	4,783	6,411
Native white—Native parentage.....	28,752	600	5,484	1,062	2,615	2,533	5,747
Number in 1900.....	16,183	487	1,682	1,159	1,010	1,842	3,121
Native white—Foreign or mixed parentage.....	10,063	116	1,810	370	895	896	1,078
Number in 1900.....	6,667	95	616	393	326	755	911
Native white—Foreign parentage.....	6,980	60	1,205	255	593	553	1,298
Native white—Mixed parentage.....	3,083	56	614	135	302	343	710
Foreign-born white.....	25,682	102	6,796	1,164	2,631	4,020	2,898
Number in 1900.....	12,161	93	1,440	439	639	1,989	1,463
Negro.....	764	3	173	15	88	43	161
Number in 1900.....	1,084	1	204	28	21	27	32
Indian, Chinese, and Japanese.....	8,190	1,248	108	634	724	250	1,057
<b>PER CENT OF TOTAL.</b>							
Native white—Native parentage.....	38.8	29.3	41.0	32.7	37.6	32.7	48.5
Native white—Foreign or mixed parentage.....	14.4	5.6	13.6	11.4	12.9	11.6	16.7
Foreign-born white.....	34.7	4.9	43.3	35.9	37.8	52.0	24.5
<b>CITIZENSHIP OF FOREIGN-BORN WHITE.</b>							
Naturalized.....	5,912	33	1,464	120	702	347	,892
Having first papers.....	1,113	10	419	25	197	111	99
Alien.....	14,574	37	3,196	824	1,542	3,051	1,102
Unknown.....	4,083	22	717	192	220	520	805
<b>ILLITERACY</b>							
<b>ILLITERATE MALES OF VOTING AGE.</b>							
Total number illiterate.....	14,463	1,229	1,102	1,064	1,316	2,517	1,561
Per cent illiterate.....	19.5	59.1	5.2	33.4	18.9	32.5	13.2
Per cent in 1900.....	26.4	70.7	12.9	15.2	11.6	23.4	17.0
Native white, number illiterate.....	1,297	127	76	37	66	247	186
Per cent illiterate.....	3.3	17.5	1.0	2.6	1.9	7.2	2.4
Foreign-born white, number illiterate.....	7,447	24	990	480	766	2,144	790
Per cent illiterate.....	29.0	23.5	17.1	41.2	28.7	53.2	27.5
Negro, number illiterate.....	64	11	1	1	18	2	16
Per cent illiterate.....	8.4	6.4	0.4	0.4	0.4	0.4	9.9
<b>PERSONS 10 YEARS OLD AND OVER.</b>							
Total number.....	157,659	6,309	27,087	6,458	12,353	17,462	27,019
Number illiterate.....	32,953	3,982	2,479	2,529	2,529	4,918	3,098
Per cent illiterate.....	20.9	63.1	9.2	38.4	19.5	28.2	11.5
Native white, number.....	90,119	1,993	16,347	2,770	7,138	9,518	19,134
Number illiterate.....	3,776	334	255	81	151	723	543
Per cent illiterate.....	4.2	16.8	1.6	2.9	2.1	7.6	2.8
Foreign-born white, number.....	49,724	174	10,197	1,042	3,731	7,410	4,800
Number illiterate.....	13,753	50	2,167	674	1,081	3,933	1,324
Per cent illiterate.....	31.5	28.7	21.3	41.0	29.0	53.1	27.6
Negro, number.....	1,691	5	423	29	201	88	387
Number illiterate.....	122	2	29	2	28	4	32
Per cent illiterate.....	7.2	6.0	6.0	6.0	13.9	4.5	8.3
<b>PERSONS 10 TO 20 YEARS, INCLUSIVE.</b>							
Total number.....	39,717	2,335	5,917	1,790	2,629	5,050	7,052
Number illiterate.....	7,146	1,417	380	806	385	578	439
Per cent illiterate.....	18.0	60.7	6.4	45.0	14.6	17.4	6.2
<b>SCHOOL AGE AND ATTENDANCE</b>							
Total number 6 to 20 years, inclusive.....	56,897	3,399	8,544	2,471	3,767	7,349	9,962
Number attending school.....	30,355	838	5,358	904	1,851	4,141	6,286
Per cent attending school.....	53.4	24.7	62.7	36.6	49.1	56.3	63.2
Number 6 to 9 years.....	17,180	1,064	2,627	681	1,138	2,299	2,880
Number attending school.....	9,657	250	1,975	318	568	1,314	1,806
Number 10 to 14 years.....	15,091	1,112	2,780	734	1,098	2,303	3,223
Number attending school.....	14,034	337	2,458	397	879	2,007	2,875
Number 15 to 17 years.....	10,084	610	1,443	449	625	1,236	1,902
Number attending school.....	5,126	169	742	147	321	660	1,214
Number 18 to 20 years.....	11,562	613	1,685	607	906	1,461	1,957
Number attending school.....	1,538	82	183	42	83	100	401
<b>PERSONS 6 TO 14 YEARS, INCLUSIVE.</b>							
Total number.....	35,271	2,176	5,416	1,415	2,236	4,602	6,103
Number attending school.....	23,691	587	4,431	715	1,447	3,321	4,681
Per cent attending school.....	67.2	27.0	81.8	50.5	64.7	72.2	76.7
Native white—Native parentage, number.....	14,857	560	2,633	402	1,017	2,217	3,512
Number attending school.....	11,952	437	2,243	331	732	1,760	2,872
Per cent attending school.....	80.4	79.5	85.2	82.3	76.9	79.4	81.8
Native white—Foreign or mixed parentage, number.....	9,497	60	1,698	156	541	1,438	1,553
Number attending school.....	6,845	52	1,344	136	394	977	1,102
Per cent attending school.....	72.1	86.7	82.1	87.2	72.8	67.9	71.0
Foreign-born white, number.....	3,762	12	1,090	68	172	854	252
Number attending school.....	2,318	3	799	42	96	540	119
Per cent attending school.....	61.6	25.0	73.3	61.8	55.8	63.2	47.2
Negro, number.....	254	1	50	5	23	15	67
Number attending school.....	207	0	42	5	19	15	55
Per cent attending school.....	81.5	0.0	84.0	100.0	82.6	100.0	82.6
<b>DWELLINGS AND FAMILIES</b>							
Dwellings, number.....	45,386	1,543	8,050	1,373	4,312	5,169	7,694
Families, number.....	47,927	1,672	8,485	1,417	4,487	5,593	8,125

<sup>1</sup> Includes 164 specially enumerated not distributed by counties.

<sup>2</sup> Native whites having both parents born in countries other than specified, and also those having both parents of foreign birth but born in different countries.

<sup>3</sup> Includes 736 on San Carlos Indian Reservation, distributed by color and nativity as follows: Native white—native parentage, 11; native white—foreign or mixed parentage, 3; foreign-born white, 3; Indian and Chinese, 713.



TABLE I.—COMPOSITION AND CHARACTERISTICS OF THE

SUBJECT.	Mohave.	Navajo. <sup>1</sup>	Pima. <sup>1</sup>	Pinal. <sup>1</sup>	Santa Cruz. <sup>1</sup>	Yavapai. <sup>1</sup>	Yuma.
<b>POPULATION</b>							
Total population, 1910.....	3,773	11,471	22,818	9,045	6,766	15,996	7,783
1900.....	3,426	8,829	14,689	7,779	4,545	13,799	4,145
1890.....	1,444		12,673	4,251		8,685	2,671
1880.....	1,190		17,006	3,044		5,013	3,215
1870.....	179		5,716			2,142	1,621
Increase, 1900-1910.....	347	2,642	8,129	1,266	2,221	2,197	3,583
Per cent of increase.....	10.1	29.9	55.3	16.3	48.9	15.9	86.8
Increase, 1890-1900.....	1,982	2,302	2,473	2,574	4,545	5,114	2,916
Per cent of increase.....	137.3		23.7	213.5		58.9	234.3
Land area (square miles).....	13,390	10,300	9,505	5,380	1,229	8,150	9,987
Population per square mile, 1910.....	0.3	1.1	2.4	1.7	5.5	2.0	0.8
Rural population per square mile, 1910.....	0.3	1.1	1.0	1.7	2.6	1.3	0.5
<b>URBAN AND RURAL TERRITORY.</b>							
Urban, 1910—Places of 2,500 or more in 1910.....			13,193		3,514	5,092	2,014
Same places in 1900.....			7,531		1,761	3,569	1,519
Per cent of increase, 1900-1910.....			75.2		99.5	43.1	91.8
Rural, 1910—Remainder of county in 1910.....	3,773	11,471	9,625	9,045	3,252	10,904	4,810
Same territory in 1900.....	3,426	8,829	7,158	7,779	2,784	10,240	2,626
Per cent of increase, 1900-1910.....	10.1	29.9	34.5	16.3	16.8	6.5	83.5
Urban, 1900—Places of 2,500 or more in 1900.....			7,531			6,420	
Rural, 1900—Remainder of county in 1900.....	3,426	8,829	7,158	7,779	4,545	7,379	4,145
Per cent in places of 2,500 or more, 1910.....			57.8		51.9	31.8	37.7
Per cent in places of 2,500 or more, 1900.....			51.3			46.5	
<b>COLOR AND NATIVITY</b>							
White.....	3,168	5,630	18,702	5,819	6,070	15,070	6,761
Number in 1900.....	1,895	3,347	11,746	4,307	4,487	12,049	3,532
Number in 1890.....	1,405		11,418	4,033		8,423	2,179
Negro.....	10	38	295	48	34	148	108
Number in 1900.....	177	326	118	417	10	123	21
Number in 1890.....	2		57	16		60	7
Black.....	2	22	247	40	28	108	97
Mulatto.....	8	16	48	8	6	40	11
Indian, Chinese, and Japanese (see Tables 1 and 12).....	595	5,803	3,821	3,178	62	778	864
Native white—Native parentage.....	1,718	3,899	6,636	2,468	1,540	7,992	3,448
Number in 1900.....	1,182	2,337	3,008	1,323	875	6,050	1,431
Native white—Foreign or mixed parentage.....	761	899	6,687	1,690	2,265	3,195	1,887
Number in 1900.....	610	766	4,678	1,615	1,494	5,236	1,133
Native white—Foreign parentage.....	418	369	4,210	1,078	1,575	1,983	1,028
Native white—Mixed parentage.....	343	530	2,477	612	690	1,212	850
Foreign-born white.....	689	832	5,379	1,661	2,805	3,883	1,425
Number in 1900.....	253	244	4,060	1,369	2,118	2,763	835
<b>PER CENT OF TOTAL POPULATION.</b>							
Native white—Native parentage.....	45.5	34.0	20.1	27.3	22.8	50.0	44.6
Per cent in 1900.....	53.0	26.5	20.5	17.0	19.3	50.4	54.5
Native white—Foreign or mixed parentage.....	20.2	7.8	29.3	18.7	33.5	20.0	24.4
Per cent in 1900.....	14.9	8.7	31.3	20.8	32.9	25.5	27.2
Foreign-born white.....	18.3	7.3	23.6	18.4	42.3	24.3	18.4
Per cent in 1900.....	7.4	2.8	27.6	17.6	46.6	20.0	20.1
<b>FOREIGN NATIONALITIES</b>							
<b>FOREIGN-BORN WHITE: Born in—</b>							
Australia.....	3	2	4	1	2	8	4
Austria.....	25	18	20	12	7	322	25
Canada—French.....	2	9	13	5	1	13	6
Canada—Other.....	49	36	160	38	55	196	65
Denmark.....	14	18	12	10	6	31	12
England.....	61	64	137	46	22	202	80
Finland.....	11	3	2	3	1	21	3
France.....	6	4	88	9	11	54	19
Germany.....	37	44	164	44	24	282	100
Hungary.....	1	8	4	1		20	1
Ireland.....	40	22	93	21	41	271	51
Italy.....	65	19	39	20	6	344	15
Mexico.....	275	618	4,457	1,360	2,616	1,551	932
Montenegro.....	1				2	30	
Norway.....	7	9	26	3	3	20	7
Russia.....	1	9	23	3	4	46	7
Scotland.....	18	15	42	19	7	47	15
Spain.....	8	4	14	27	15	190	8
Sweden.....	22	13	40	17	4	81	42
Switzerland.....	19	6	15	5	4	59	11
Turkey.....	3		9	5	7	13	
Wales.....	3	1	16	1	1	29	4
Other foreign countries.....	13	10	42	7	26	44	19
<b>NATIVE WHITE: Both parents born in—</b>							
Austria.....	4	4	11		6	48	3
Canada—French.....	3	2	5	2		9	3
Canada—Other.....	3	17	47	3	11	56	19
Denmark.....	7	33	3	3	1	11	1
England.....	31	55	74	18	19	108	35
France.....	1	5	12	6	3	29	10
Germany.....	53	59	235	38	17	308	86
Ireland.....	85	46	179	42	37	290	105
Italy.....	7		16	1	1	116	1
Norway.....	4	1	15	2		3	3
Russia.....		6	9	1			1
Scotland.....	16	13	31	6	2	32	21
Sweden.....	8	11	18	5	4	31	10
Switzerland.....	34		4			10	3
Wales.....	5	5	9	4	3	10	7
All others of foreign parentage.....	157	112	3,545	947	1,471	922	720

<sup>1</sup> For changes in boundaries, etc., see page 589.<sup>2</sup> See Note 3 on page 589.



POPULATION FOR THE STATE AND FOR COUNTIES—Continued.

SUBJECT.	Mohave.	Navajo. <sup>1</sup>	Pima. <sup>1</sup>	Pinal. <sup>1</sup>	Santa Cruz. <sup>1</sup>	Yavapai. <sup>1</sup>	Yuma.
<b>SEX</b>							
Total... Male.....	2,536	6,369	12,211	5,408	3,518	10,391	4,835
Female.....	1,237	5,102	10,607	3,639	3,248	5,605	2,898
White... Male.....	2,189	3,379	9,993	3,078	3,440	9,787	4,270
Female.....	979	2,251	8,709	2,141	3,221	5,293	2,485
Negro... Male.....	8	31	143	42	19	70	66
Female.....	2	7	147	6	15	69	42
<b>MALES OF VOTING AGE</b>							
Total number.....	1,900	3,399	7,035	3,389	1,905	7,818	3,362
Number in 1900.....	1,618	2,639	4,456	2,804	1,591	7,332	1,748
Native white—Native parentage.....	801	1,234	2,180	1,044	565	3,454	1,424
Number in 1900.....	608	862	1,115	531	312	2,860	608
Native white—Foreign or mixed parentage.....	373	349	1,329	412	311	1,121	694
Number in 1900.....	247	244	725	301	298	1,367	313
Native white—Foreign parentage.....	243	177	643	310	232	727	434
Native white—Mixed parentage.....	130	172	386	102	79	394	260
Foreign-born white.....	529	497	2,376	1,027	908	2,768	896
Number in 1900.....	191	148	1,722	787	787	2,060	640
Negro.....	6	25	109	40	14	60	36
Number in 1900.....	55	219	69	505	9	66	17
Indian, Chinese, and Japanese.....	191	1,294	1,050	806	47	414	312
<b>PER CENT OF TOTAL.</b>							
Native white—Native parentage.....	42.2	36.3	31.0	30.8	29.7	44.2	42.4
Native white—Foreign or mixed parentage.....	19.6	10.3	19.0	12.2	16.3	14.3	20.6
Foreign-born white.....	27.8	14.6	33.8	30.3	50.8	35.4	26.7
<b>CITIZENSHIP OF FOREIGN-BORN WHITE.</b>							
Naturalized.....	217	70	588	187	170	815	301
Having first papers.....	23	13	40	22	24	123	34
Alien.....	235	167	1,185	574	674	1,555	432
Unknown.....	54	247	563	244	94	270	129
<b>ILLITERACY</b>							
<b>ILLITERATE MALES OF VOTING AGE.</b>							
Total number illiterate.....	242	1,324	1,553	914	521	659	441
Per cent illiterate.....	12.7	39.0	22.1	27.0	27.3	8.4	13.1
Per cent in 1900.....	27.2	50.0	33.6	39.6	30.4	10.4	24.2
Native white, number illiterate.....	10	59	221	68	91	84	31
Per cent illiterate.....	0.9	3.3	6.3	4.7	10.4	1.8	1.5
Foreign-born white, number illiterate.....	114	209	640	267	426	363	238
Per cent illiterate.....	21.6	42.1	26.9	26.0	44.0	13.1	26.0
Negro, number illiterate.....			3	4	1	4	4
Per cent illiterate.....			3.0				
<b>PERSONS 10 YEARS OLD AND OVER.</b>							
Total number.....	3,173	8,313	17,413	6,890	4,984	13,367	6,231
Number illiterate.....	450	3,417	4,035	1,991	1,598	1,083	887
Per cent illiterate.....	14.2	41.1	23.2	28.9	32.1	8.1	14.2
Native white, number.....	2,037	3,550	9,379	2,972	2,360	8,769	4,102
Number illiterate.....	26	133	751	193	346	143	92
Per cent illiterate.....	1.3	3.7	8.0	6.5	14.7	1.6	2.2
Foreign-born white, number.....	675	781	5,057	1,558	2,542	3,791	1,366
Number illiterate.....	164	322	1,444	429	1,244	531	390
Per cent illiterate.....	24.3	41.2	28.6	27.5	48.9	14.0	28.6
Negro, number.....	9	35	241	47	26	127	73
Number illiterate.....			5	4	3	9	6
Per cent illiterate.....			2.1			7.1	
<b>PERSONS 10 TO 20 YEARS, INCLUSIVE.</b>							
Total number.....	605	2,508	4,868	1,697	1,596	2,301	1,339
Number illiterate.....	66	306	985	294	431	124	135
Per cent illiterate.....	10.9	32.1	20.2	17.3	27.0	5.4	10.1
<b>SCHOOL AGE AND ATTENDANCE</b>							
Total number 6 to 20 years, inclusive.....	832	3,661	6,959	2,505	2,304	3,245	1,899
Number attending school.....	422	1,740	3,373	1,284	1,087	2,041	1,042
Per cent attending school.....	50.7	47.5	48.5	50.5	47.2	62.9	54.9
Number 6 to 9 years.....	227	1,163	2,091	808	708	944	560
Number attending school.....	117	510	1,037	406	338	712	306
Number 10 to 14 years.....	277	1,176	2,202	783	795	990	609
Number attending school.....	202	764	1,615	586	584	866	506
Number 15 to 17 years.....	119	623	1,287	422	407	566	325
Number attending school.....	73	325	561	210	162	366	186
Number 18 to 20 years.....	209	709	1,379	492	394	745	405
Number attending school.....	30	141	160	82	33	97	44
<b>PERSONS 6 TO 14 YEARS, INCLUSIVE.</b>							
Total number.....	504	2,320	4,293	1,591	1,503	1,934	1,169
Number attending school.....	319	1,274	2,682	972	902	1,578	812
Per cent attending school.....	63.3	54.7	61.8	61.1	60.0	81.6	69.5
Native white—Native parentage, number.....	227	779	1,107	337	308	1,139	579
Number attending school.....	158	662	784	290	228	906	439
Per cent attending school.....	69.6	85.0	70.8	74.9	74.0	84.8	75.8
Native white—Foreign or mixed parentage, number.....	109	97	1,816	424	744	535	336
Number attending school.....	67	75	1,262	273	442	485	236
Per cent attending school.....	61.5		69.5	64.4	59.4	82.9	70.2
Foreign-born white, number.....	12	44	498	133	439	105	83
Number attending school.....	3	18	297	56	224	70	42
Per cent attending school.....			59.6	42.1	51.0	75.2	
Negro, number.....	2	5	43	1	4	10	28
Number attending school.....	2	3	37		3	8	13
Per cent attending school.....							
<b>DWELLINGS AND FAMILIES</b>							
Dwellings, number.....	1,048	2,392	4,838	1,924	1,328	3,579	2,086
Families, number.....	1,077	2,436	5,163	2,047	1,419	3,851	2,185

<sup>1</sup> Native whites having both parents born in countries other than specified, and also those having both parents of foreign birth but born in different countries.

TABLE II.—COMPOSITION AND CHARACTERISTICS OF THE POPULATION FOR CITIES OF 10,000 OR MORE.

SUBJECT.	TOTAL, CITIES NAMED.	Phoenix.	Tucson.	SUBJECT.	TOTAL, CITIES NAMED.	Phoenix.	Tucson.
<b>COLOR AND NATIVITY</b>				<b>SEX</b>			
Total population, 1910.....	24,327	11,134	13,193	Total...Male.....	12,781	5,880	6,901
1900.....	13,075	5,544	7,531	Female.....	11,546	5,254	6,292
Native white—Native parentage.....	10,961	6,244	4,717	White...Male.....	11,763	5,562	6,201
Native white—Foreign or mixed parentage.....	6,925	2,739	4,186	Female.....	10,838	5,050	5,788
Foreign-born white.....	4,715	1,620	3,086	Negro...Male.....	261	157	104
Negro.....	550	323	222	Female.....	289	171	118
Indian, Chinese, and Japanese.....	1,176	194	982	<b>MALES OF VOTING AGE</b>			
<b>FOREIGN NATIONALITIES</b>				Total number.....	7,963	3,838	4,125
<b>FOREIGN-BORN WHITE: Born in—</b>				Native white—Native parentage.....	3,650	2,077	1,573
Austria.....	52	34	18	Native white—Foreign or mixed parentage.....	1,576	730	846
Canada—French.....	23	16	7	Foreign-born white.....	2,034	780	1,254
Canada—Other.....	253	135	118	Negro.....	184	115	69
Denmark.....	25	17	8	<b>CITIZENSHIP OF FOREIGN-BORN WHITE.</b>			
England.....	216	120	96	Naturalized.....	674	290	384
France.....	52	22	30	Having first papers.....	52	31	21
Germany.....	280	158	122	Alien.....	733	226	507
Hungary.....	14	10	4	Unknown.....	575	233	342
Ireland.....	156	89	67	<b>ILLITERACY</b>			
Italy.....	51	33	18	Total number 10 years old and over.....	19,511	9,094	10,417
Mexico.....	3,233	792	2,441	Number illiterate.....	1,874	546	1,328
Norway.....	40	22	18	Native white 10 years old and over.....	13,633	7,068	6,565
Russia.....	50	33	17	Number illiterate.....	495	159	336
Scotland.....	50	27	23	Foreign-born white 10 years old and over.....	4,474	1,587	2,907
Sweden.....	62	32	30	Number illiterate.....	931	357	574
Switzerland.....	29	20	9	Negro 10 years old and over.....	457	274	183
Wales.....	22	10	12	Number illiterate.....	19	16	3
Other foreign countries.....	107	59	48	Illiterate males of voting age.....	733	221	512
<b>NATIVE WHITE: Both parents born in—</b>				<b>SCHOOL AGE AND ATTENDANCE</b>			
Austria.....	14	10	4	Total number 6 to 20 years, inclusive.....	6,753	2,877	3,876
Canada—French.....	6	3	3	Number attending school.....	3,891	1,751	2,140
Canada—Other.....	57	31	26	<b>PERSONS 6 TO 14 YEARS, INCLUSIVE.</b>			
Denmark.....	13	13	9	Total number.....	3,997	1,693	2,304
England.....	125	76	49	Number attending school.....	3,004	1,331	1,673
France.....	19	10	9	Native white—Native parentage.....	1,770	1,031	739
Germany.....	429	258	171	Number attending school.....	1,411	846	565
Hungary.....	11	11	6	Native white—Foreign or mixed parentage.....	1,636	539	1,097
Ireland.....	272	152	120	Number attending school.....	1,219	401	818
Italy.....	27	21	6	Foreign-born white.....	347	72	275
Norway.....	29	22	7	Number attending school.....	227	44	183
Russia.....	24	16	8	Negro.....	73	43	30
Scotland.....	37	22	15	Number attending school.....	60	34	26
Sweden.....	45	32	13	<b>DWELLINGS AND FAMILIES</b>			
Switzerland.....	13	11	2	Dwellings, number.....	5,406	2,564	2,842
Wales.....	17	8	9	Families, number.....	5,832	2,816	3,016
All others of foreign parentage <sup>1</sup> .....	2,959	894	2,065				

<sup>1</sup> Native whites having both parents born in countries other than specified, and also those having both parents of foreign birth but born in different countries.

TABLE III.—COMPOSITION AND CHARACTERISTICS OF THE POPULATION FOR PLACES OF 2,500 TO 10,000.

SUBJECT.	TOTAL, PLACES NAMED.	Bisbee. <sup>1</sup>	Clifton. <sup>1</sup>	Douglas. <sup>1</sup>	Globe. <sup>1</sup>	Nogales.	Prescott.	Yuma. <sup>1</sup>
<b>SEX, COLOR, AND NATIVITY</b>								
Total population, 1910.....	38,933	9,019	4,874	6,437	7,083	3,514	5,092	2,914
1900.....	5,320					1,761	3,550	
Male.....	22,483	5,504	2,703	3,583	4,235	1,785	3,029	1,644
Female.....	16,450	3,515	2,171	2,854	2,848	1,729	2,063	1,270
Native white—Native parentage.....	15,683	3,086	1,310	2,784	3,283	827	2,971	1,422
Native white—Foreign or mixed parentage.....	9,597	2,262	1,536	1,244	1,583	963	1,084	925
Foreign-born white.....	12,474	3,474	1,007	2,250	1,949	1,653	746	495
Negro.....	700	195	62	158	188	30	113	24
Indian, Chinese, and Japanese.....	419	2	69	1	80	41	178	48
<b>MALES OF VOTING AGE</b>								
Total number.....	15,283	4,041	1,590	2,282	2,995	1,014	2,313	1,048
Native white—Native parentage.....	6,225	1,374	494	1,038	1,225	356	1,242	496
Native white—Foreign or mixed parentage.....	2,242	572	192	274	399	141	408	256
Foreign-born white.....	6,182	2,023	816	919	1,288	472	467	247
Naturalized.....	1,570	558	66	185	372	91	221	76
Negro.....	274	70	23	50	68	12	41	10
<b>ILLITERACY</b>								
Total number 10 years old and over.....	31,156	7,432	3,600	5,073	5,721	2,656	4,408	2,266
Number illiterate.....	3,162	302	441	573	602	884	226	134
Native white 10 years old and over.....	18,593	4,003	1,770	2,033	3,591	1,161	3,404	1,731
Number illiterate.....	336	24	57	18	42	157	16	22
Foreign-born white 10 years old and over.....	11,488	3,254	1,716	2,000	1,883	1,434	755	466
Number illiterate.....	2,645	270	382	548	507	724	107	107
Negro 10 years old and over.....	662	173	45	139	167	22	95	21
Number illiterate.....	45	8		7	23	2	5	
Illiterate males of voting age.....	1,355	123	158	218	307	235	167	57
<b>SCHOOL AGE AND ATTENDANCE</b>								
Total number 6 to 20 years, inclusive.....	9,416	1,805	1,410	1,707	1,543	1,134	1,023	789
Number attending school.....	5,543	1,119	738	891	958	530	783	444
<b>PERSONS 6 TO 14 YEARS, INCLUSIVE.</b>								
Native white, number.....	4,399	800	677	699	813	434	540	436
Number attending school.....	3,568	711	484	565	690	294	506	318
Foreign-born white, number.....	1,284	257	241	334	99	296	14	43
Number attending school.....	869	216	149	243	73	153	11	24
Negro, number.....	73	14	6	21	19	4	8	1
Number attending school.....	63	13	6	16	16	3	8	1
<b>DWELLINGS AND FAMILIES</b>								
Dwellings, number.....	8,254	1,858	1,038	1,443	1,646	631	1,010	619
Families, number.....	8,950	2,021	1,100	1,585	1,784	700	1,087	663

<sup>1</sup> See explanatory notes below.

NOTES REGARDING CHANGES IN BOUNDARIES, ETC.

COUNTIES.

APACHE.—Organized from part of Yavapai in 1879; part taken to form part of Graham in 1881; part taken to form Navajo in 1895.  
 COCHISE.—Organized from part of Pima in 1881.  
 COCONINO.—Organized from part of Yavapai in 1891.  
 GILA.—Organized from parts of Maricopa and Pinal in 1881.  
 GRAHAM.—Organized from parts of Apache and Pima in 1881.  
 MARICOPA.—Organized from part of Yavapai in 1871; part of Pima annexed in 1873; parts taken to form part of Pinal in 1875 and part of Gila in 1881.  
 NAVAJO.—Organized from part of Apache in 1895.  
 PIMA.—Part taken to form part of Pinal in 1875; parts annexed to Maricopa in 1873 and Pinal in 1877; parts taken to form Cochise and part of Graham in 1881 and Santa Cruz in 1899.  
 PINAL.—Organized from parts of Maricopa, Pima, and Yavapai in 1875; part of Pima annexed in 1877; part taken to form part of Gila in 1881.  
 SANTA CRUZ.—Organized from part of Pima in 1899.  
 YAVAPAI.—Parts taken to form Maricopa in 1871, Apache in 1879, Coconino in 1891, and part of Pinal in 1875.

NOTE 1.—Population for Gila County and estimated population (2,272) for that part of San Carlos Indian Reservation now in Gila County—1900, 7,245; increase, 1900-1910, 9,103; per cent of increase, 125.6. Rural population—1910, 9,265; same territory in 1900, 5,750; per cent of increase, 1900-1910, 61.1. Rural population—1900, 7,245.

NOTE 2.—Population for Graham County and estimated population (793) for that part of San Carlos Indian Reservation now in Graham County—1900, 14,955; increase, 1900-1910, 9,044; per cent of increase, 60.5. Rural population—1910, 19,125; same territory in 1900, 14,955; per cent of increase, 1900-1910, 27.9. Rural population—1900, 14,955.

NOTE 3.—In computing this increase the population of Indian reservations in 1900 has been deducted from the total population of the county in order to make that total comparable with the total for 1890 which does not include the population of Indian reservations. The population thus deducted in the several counties was as follows: Apache, 5,341; Coconino, 1,113; Gila, 709; Maricopa, 2,451; Navajo, 5,027; Pima, 1,543; Pinal, 2,954; Yuma, 558.

INCORPORATED PLACES.

BISBEE.—Incorporated in 1902. GLOBE.—Incorporated in 1907.  
 CLIFTON.—Incorporated in 1909. YUMA.—Incorporated in 1902.  
 DOUGLAS.—Incorporated in 1905.

## CHAPTER 3.

### STATISTICS OF AGRICULTURE FOR THE STATE AND ITS COUNTIES.

**Introduction.**—This chapter presents a complete statement of the statistics of agriculture for Arizona collected at the census of 1910. Statistics of farms and farm property relate to April 15, 1910; those of farm products, expenses, and receipts are for the calendar year 1909.

**Definitions.**—To assist in securing comparability for its statistics of agriculture, the Bureau of the Census provided the enumerators with certain definitions and instructions, the more important of which were essentially as given below.

**Farm.**—A "farm" for census purposes is all the land which is directly farmed by one person managing and conducting agricultural operations, either by his own labor alone or with the assistance of members of his household or hired employees. The term "agricultural operations" is used as a general term referring to the work of growing crops, producing other agricultural products, and raising animals, fowls, and bees. A "farm" as thus defined may consist of a single tract of land, or of a number of separate and distinct tracts, and these several tracts may be held under different tenures, as where one tract is owned by the farmer and another tract is hired by him. Further, when a landowner has one or more tenants, renters, croppers, or managers, the land operated by each is considered a "farm."

In applying the foregoing definition of a "farm," for census purposes, enumerators were instructed to report as a "farm" any tract of 3 or more acres used for agricultural purposes, and also any tract containing less than 3 acres which produced at least \$250 worth of farm products in the year 1909.

**Farmer.**—A "farmer" or "farm operator," according to the census definition, is a person who directs the operations of a farm. Hence owners of farms who do not themselves direct the farm operations are not reported as "farmers." Farmers are divided by the Bureau of the Census into three general classes according to the character of their tenure, namely, owners, tenants, and managers.

**Farm owners** include (1) farmers operating their own land only, and (2) those operating both their own land and some land hired from others. The latter are sometimes referred to in the census reports as "part owners," the term "owners" being then restricted to those owning all their land.

**Farm tenants** are farmers who, as tenants, renters, or croppers, operate hired land only. They were reported in 1910 in three classes: (1) *Share tenants*—those who pay a certain share of the products, as one-half, one-third, or one-quarter; (2) *share-cash tenants*—those who pay a share of the products for part of the land rented by them and cash for part; and (3) *cash tenants*—those who pay a cash rental or a stated amount of labor or products, such as \$7, 10 bushels of wheat, or 100 pounds of seed cotton per acre.

**Managers** are farmers who are conducting farm operations for the owner for wages or a salary.

**Farm land.**—Farm land is divided into (1) improved land, (2) woodland, and (3) all other unimproved land. The same classification was followed in 1880. At former censuses, except that of 1880, farm land was divided into improved land and unimproved land, woodland being included with unimproved land. *Improved*

*land* includes all land regularly tilled or mowed, land pastured and cropped in rotation, land lying fallow, land in gardens, orchards, vineyards, and nurseries, and land occupied by farm buildings. *Woodland* includes all land covered with natural or planted forest trees, which produce, or later may produce, firewood or other forest products. *All other unimproved land* includes brush land, rough or stony land, swamp land, and any other land which is not improved or in forest. The census classification of farm land as "improved land," "woodland," and "other unimproved land" is one not always easy for the farmers or enumerators to make, and the statistics therefore must be considered at best only a close approximation.

**Total value of farm products.**—No attempt has been made at this census to compute or even to estimate approximately the total value of farm products. Among the numerous difficulties which stand in the way of obtaining a total which would be at once comprehensive, free from duplication, and confined exclusively to the products of a definite period of time are the following:

(1) The duplication resulting from the feeding of farm crops to farm live stock, when the value both of the products derived from such live stock and of the crops are included in the same total. In 1900 an attempt was made to eliminate this duplication by means of an inquiry as to the total value of the products of each farm fed to the live stock on that farm, but aside from the fact that this would not eliminate the duplication where the products of one farm are fed to the live stock of another farm, it is believed that the farmers were unable to make even approximately accurate answers to the inquiry, and it was accordingly not included in the schedule for 1910.

(2) The fact that farmers may buy domestic animals during the census year which are subsequently sold or slaughtered during the same year and that it is impossible to eliminate the duplication accurately; and the further fact that the value of domestic animals sold or slaughtered, or of forest products cut, during a given year (as well as some other minor items) does not usually represent a value created wholly during that year, and that it is quite impossible to ascertain the value created during the year.

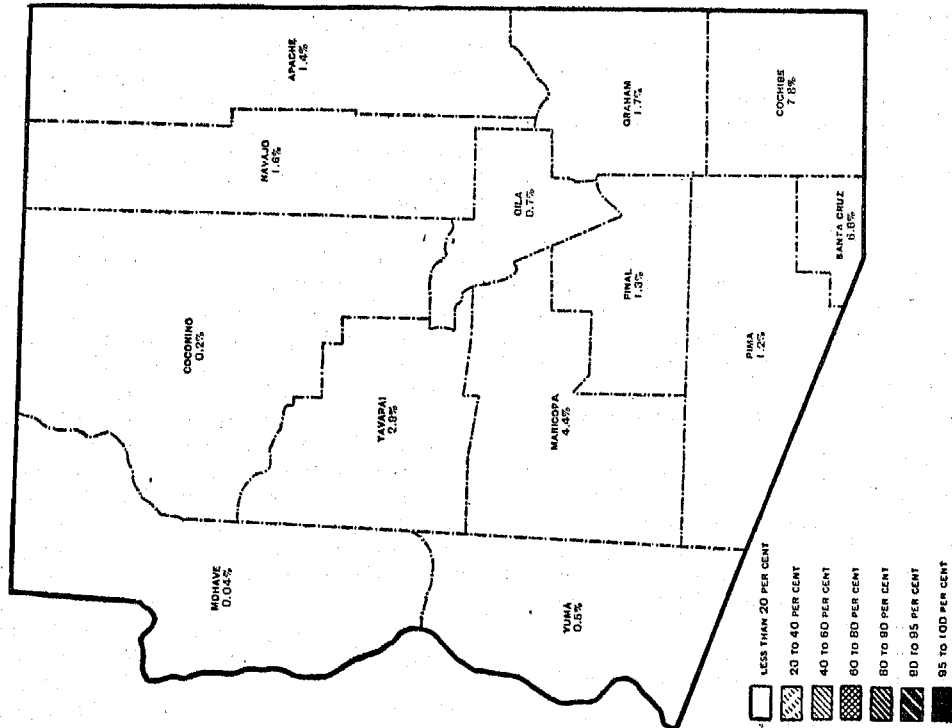
(3) The fact that the returns for some products are incomplete. The returns for all products are to a considerable extent estimates made by the farmers. Special difficulty was encountered in cases where the person in possession of the farm in April, 1910, when the census was taken, was not in possession of it during the crop year 1909. In such cases the farmer was not always able to report completely and accurately the products of the land for the preceding year. It is probable that the returns for the principal crops are in general fairly accurate, but that those for minor crops and for dairy and poultry products are frequently understatements, particularly because the home consumption was disregarded or underestimated. In the belief that no accurate result could be obtained from such an inquiry, the Bureau of the Census did not even attempt to ascertain the total quantity and value of certain by-products, such as straw and cornstalks, which are of considerable importance, the schedule calling only for the value of such by-products sold.

PER CENT OF LAND AREA IN FARMS, AND AVERAGE VALUE OF FARM LAND PER ACRE, IN ARIZONA, BY COUNTIES: 1910.

PER CENT OF LAND AREA IN FARMS.

[Per cent for the state, 1.7.]

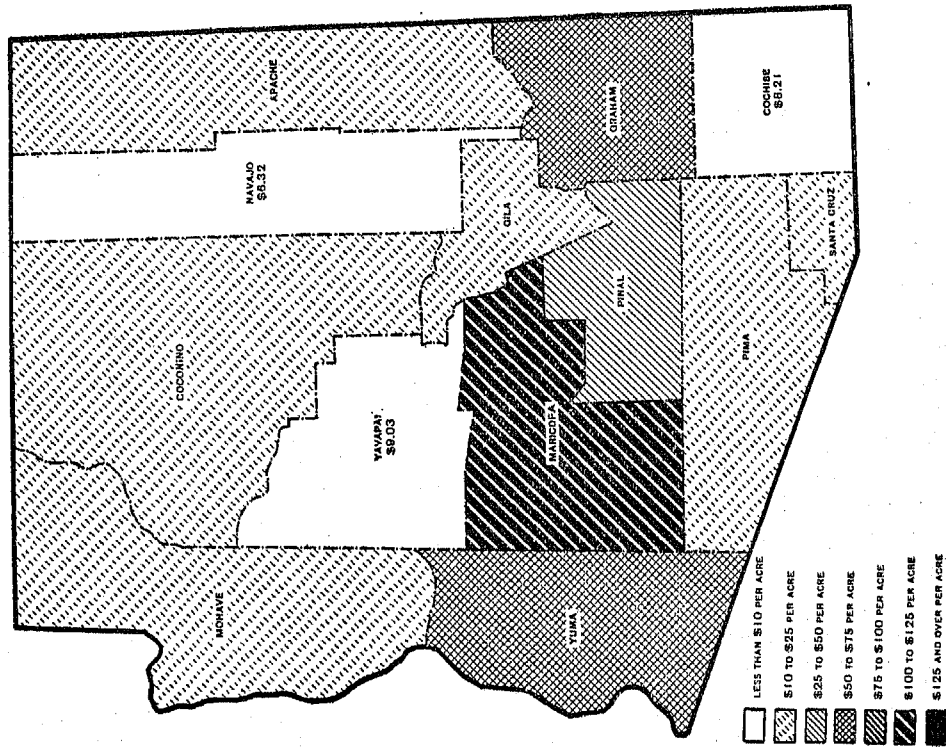
The per cent of land area in farms, when less than 20, is inserted under the county name.



AVERAGE VALUE OF FARM LAND PER ACRE.

[Average for the state, \$33.97.]

When the value is less than \$10 per acre, it is inserted under the county name.



FARMS AND FARM PROPERTY.

Arizona ranks fifth in land area and forty-sixth in population among the states of continental United States. The southwestern portion of Arizona ranges from an altitude of approximately 350 feet above sea level along the lower course of the Colorado River to a general elevation of approximately 2,000 feet in the desert plains, with altitudes in excess of 4,000 feet in the mountain ridges which cross these plains from the northwest to southeast. The northern and north-eastern parts consist of a high plateau ranging in altitude from 4,000 to 8,000 feet above sea level, with mountain masses which rise to extreme altitudes of over 12,000 feet. The average elevation of Arizona above sea level is approximately 4,100 feet, with comparatively little below an altitude of 2,500 feet.

Southern and southwestern Arizona, lying within the extremely arid southwestern portion of the United States, consists of broad desert plains interspersed with nearly parallel mountain ranges of considerable elevation having a general northwestern and south-eastern trend. The floors of the desert plains are made up of gravelly and sandy detritus washed down from the mountains, together with sandy loam, loam and adobe soils in the vicinity of the larger streams or in the centers of the basinlike plains.

The plateau country is extremely varied in its surface configuration and in its soils. Extensive areas of the plateau consist of high mesas overlooking

lower plains and deep valleys and bounded by abrupt escarpments and canyons, the greatest of which, the Grand Canyon, has been cut by the Colorado River. The soils of this region are formed principally from a variety of underlying rock through surface weathering.

In the western half of Arizona the annual precipitation ranges from 1 to 10 inches, and in the eastern half from 10 to 25 inches. Irrigation is necessary to the growth of crops in the low valleys, but on the higher plains some crops are grown without it.

The two maps on the opposite page show, for the different counties, the proportion of the total land area which is in farms and the average value of farm land per acre. Of the entire land area of Arizona, only 1.7 per cent is in farms, and, as shown by the first map, the proportion in no county reaches 10 per cent, the highest percentage being 7.8 per cent for Cochise County.

For Arizona as a whole the average value per acre of farm land, exclusive of buildings, is \$33.97. The average varies considerably in the several counties, ranging from \$6.32 in Navajo County to \$104.50 in Maricopa County.

Progress during the decade 1900 to 1910.—The following table summarizes the more significant facts relating to population and land area, the number, value, and acreage of farms, and the value of all other farm property in 1910 and 1900:

NUMBER, AREA, AND VALUE OF FARMS.	1910 (April 15)	1900 (June 1)	INCREASE, <sup>1</sup>	
			Amount.	Per cent.
Population.....	204,354	122,931	81,423	66.2
Number of all farms.....	9,227	5,809	3,418	58.8
Approximate land area of the state..... acres..	72,838,400	72,857,600	<sup>2</sup> -19,200	.....
Land in farms..... acres..	1,246,613	1,935,327	-688,714	-35.6
Improved land in farms..... acres..	350,173	254,521	95,652	37.6
Average acres per farm.....	135.1	333.2	-198.1	-59.5
Value of farm property:				
Total.....	\$75,123,970	\$29,993,847	\$45,130,123	150.5
Land.....	42,349,737	11,416,460	30,933,277	271.0
Buildings.....	4,935,573	2,266,500	2,669,073	117.8
Implements and machinery.....	1,787,790	765,200	1,022,590	133.6
Domestic animals, poultry, and bees....	26,050,870	15,545,687	10,505,183	67.6
Average value of all property per farm.....	\$8,142	\$5,163	\$2,979	57.7
Average value of land per acre.....	\$33.97	\$5.90	\$28.07	475.8

<sup>1</sup> A minus sign (-) denotes decrease.

<sup>2</sup> Due to the building of Roosevelt and Laguna reservoirs.

NOTE.—Ranges or ranches using the public domain for grazing purposes but not owning or leasing land were counted as farms in 1910 and 1900. They were included as owned or managed, free from mortgage, and under 3 acres in size. The counting of these ranges as farms affects all totals, averages, and percentages in which the number of farms is a factor. In 1910 there were 1,527 such ranges included as farms.

Between 1900 and 1910 there was an increase of 81,423, or 66.2 per cent, in population, and of 3,418, or 58.8 per cent, in the number of farms. The total farm acreage decreased 688,714, or 35.6 per cent, while the acreage of improved land increased 95,652, or 37.6 per cent.

Farm property, which includes land, buildings, implements and machinery, and live stock (domestic animals, poultry, and bees), has increased in value

during the decade \$45,130,000, or 150.5 per cent. Land alone increased in value 271 per cent, as compared with increases of 133.6 per cent in the value of implements and machinery, 117.8 per cent in that of buildings, and 67.6 per cent in that of live stock. In considering the increase of values in agriculture the general increase in the prices of all commodities in the last 10 years should be borne in mind.

The average value of a farm with its equipment was \$8,142 in 1910, compared with \$5,163 in 1900. The average value of land alone rose from \$5.90 per acre in 1900 to \$33.97 in 1910.

**Irrigation.**—Of the 9,227 farms in Arizona, 4,841, or 52.5 per cent, were irrigated in 1909. The acreage reported as irrigated in 1909 was 320,051 acres, or 91.4 per cent of the improved land in farms. The area to which enterprises existing in 1910 were capable of supplying water was 387,655 acres, while the total acreage included in projects completed or under way in 1910 was 944,090 acres.

**Population, number of farms, and farm acreage: 1870 to 1910.**—The table following presents, for each census from 1870 to 1910, inclusive, a statement of the total population, the number of farms, and the acreage of farm land and of improved land in farms. It also gives the percentage of the land area in farms, the percentage of farm land improved, and the percentage of increase during each decade in the number of farms and in the land in farms:

CENSUS YEAR.	Population.	FARMS.		LAND IN FARMS.			Per cent of land area in farms.	Per cent of farm land improved.
		Number.	Per cent of increase.	All land.		Improved land (acres).		
				Acres.	Per cent of increase. <sup>1</sup>			
1910.....	204,354	9,227	58.8	1,246,613	-35.6	350,173	1.7	28.1
1900.....	122,931	5,809	307.4	1,935,327	49.2	254,521	2.7	13.2
1890.....	88,243	1,428	85.9	1,297,033	856.7	104,128	1.8	8.0
1880.....	40,440	767	345.9	135,573	521.7	56,071	0.2	41.4
1870 <sup>2</sup> .....	9,658	172	.....	21,807	.....	14,585	.....	66.9

<sup>1</sup> A minus sign (-) denotes decrease.  
<sup>2</sup> No data prior to 1870. Organized as a territory in 1863.

In the 40 years since 1870 the population has increased from 9,658 to 204,354, or twentyfold. The increase was much greater during the last 20 years than during the preceding 20 years. There has been a continuous increase in the number of farms during the entire 40-year period, the greater part of which has taken place since 1890.

The land surface of Arizona is approximately 72,838,400 acres, of which 1,246,613 acres, or 1.7 per cent, are included in farms. Of this area in farms, 350,173 acres, or 28.1 per cent, representing five-tenths of 1 per cent of the total land area, are reported as improved land. The total acreage of farm land decreased 688,714, or 35.6 per cent, during the last decade. This was owing to the presence in 1900 of several very large ranches, including one of nearly 1,000,000 acres, which were not reported in 1910. These ranches were mainly in Coconino and Navajo Counties. In Graham County a considerable amount of railroad land which in 1900 was leased for grazing purposes has been added to the forest reserves. Outside of these three counties in which the great losses in acreage occurred, there was an increase in farm acreage from 1900 to 1910 of 437,455, or 72.7 per cent. The reported acreage of improved land increased

95,652 acres, or 37.6 per cent, and now represents 28.1 per cent of all farm land, as compared with 13.2 per cent in 1900. From 1870 to 1900 the total farm acreage increased rapidly, advancing from 21,807 in 1870 to 1,935,327 in 1900, although, as already noted, there was a considerable falling off between 1900 and 1910, while the reported improved acreage increased continuously throughout the period covered by the table from 14,585 in 1870 to 350,173 in 1910.

**Values of farm property: 1870 to 1910.**—The agricultural changes in Arizona since 1870, as reflected in the values of the several classes of farm property, are shown in the table which follows:

CENSUS YEAR.	FARM PROPERTY.							
	Total.		Land and buildings.		Implements and machinery.		Domestic animals, poultry, and bees.	
	Value.	Per cent of increase.	Value.	Per cent of increase.	Value.	Per cent of increase.	Value.	Per cent of increase.
1910.....	\$75,123,970	150.5	\$47,285,310	245.0	\$1,787,790	133.0	\$26,050,870	07.6
1900.....	29,993,847	45.3	13,082,960	89.5	765,200	239.3	15,545,837	17.5
1890.....	20,646,263	366.3	7,222,230	540.3	196,580	121.3	13,227,453	311.9
1880.....	14,427,746	1,600.7	1,127,946	773.9	88,811	452.2	13,210,689	2,087.5
1870 <sup>2</sup> .....	260,353	.....	129,072	.....	16,084	.....	115,197	.....

<sup>1</sup> Includes estimated value of range animals.  
<sup>2</sup> Computed gold values, being 80 per cent of the currency values reported.  
<sup>3</sup> No data prior to 1870. Organized as a territory in 1863.

The total wealth of Arizona in the form of farm property is \$75,124,000, of which \$47,285,000, or 62.9 per cent, is represented by land and buildings; \$26,051,000, or 34.7 per cent, by live stock; and \$1,788,000, or 2.4 per cent, by implements and machinery. At each census from 1880 to 1900, inclusive, the value of live stock was greater than the value of land and buildings. Although the increase in the total value of farm property was continuous throughout the past four decades, it was much greater from 1880 to 1890 than for the preceding or succeeding decade. The increase between 1900 and 1910, however, was greater than that for any other decade, being over one and one-half times the total value reported in 1900.

**Average acreage and values per farm: 1870 to 1910.**—The changes which have taken place during the past 40 years in the average acreage of Arizona farms and in the average values of the various classes of farm property, as well as in the average value per acre of land and buildings, are shown in the following table:

CENSUS YEAR.	Average acres per farm.	AVERAGE VALUE PER FARM. <sup>1</sup>				Average value of land and buildings per acre.
		All farm property.	Land and buildings.	Implements and machinery.	Domestic animals, poultry, and bees.	
1910.....	135.1	\$8,142	\$5,125	\$104	\$2,823	\$37.93
1900.....	333.2	5,163	2,355	132	2,676	7.07
1890.....	909.6	14,478	5,065	138	9,276	5.57
1880.....	178.8	5,773	1,471	116	4,186	8.32
1870 <sup>2</sup> .....	126.8	1,514	750	94	670	5.92

<sup>1</sup> Averages are based on "all farms."  
<sup>2</sup> Includes estimated value of range animals.  
<sup>3</sup> Computed gold values, being 80 per cent of the currency values reported.  
<sup>4</sup> No data prior to 1870. Organized as a territory in 1863.



One of the striking characteristics of Arizona is the great area of arid land utilized, if at all, for grazing purposes only. Upon this land are some very large farms or ranches, which raise the average acreage per farm and lower the average value of all farm land per acre. The farms other than those used almost exclusively for grazing purposes are not, on the average, unusually large.

During the 40 years since 1870 the reported average size of the Arizona farm has fluctuated greatly. The average size for 1870, 126.8 acres, was not greatly below that for 1910, but in 1890 it was 909.6 acres, or over five times as great as in 1880 and over seven times as great as in 1870. Since 1890 there has been a rapid decrease, the average size in 1910 being but 135.1 acres.

The average value of an Arizona farm, including its equipment, is \$8,142, of which \$5,125 represents the value of land and buildings, \$2,823 the value of live stock, and \$194 the value of implements and machinery. The average value of land and buildings is \$37.93 per acre, or more than five times as great as it was 10 years ago. Although the average value per acre was much greater in 1910 than in any other year shown in the table, the average value per farm of all farm property has fallen below the figure for 1890 by \$6,336, or 43.8 per cent. The average value per farm of land and buildings in 1910 was but \$60 greater than in 1890. The increase in the value of implements and machinery per farm has been nearly continuous. This increase, however, is quite small, amounting to only \$100 for the entire 40-year period. The value of live stock per farm after rapid increases from 1870 to 1890, at which time it was \$9,276, fell off \$6,600 during the next decade, being only \$2,676 in 1900. Between 1900 and 1910, however, a gain of \$147 per farm was reported.

**Farm tenure: 1880 to 1910.**—The following table shows the distribution of the farms according to character of tenure at each census since 1880:

TENURE.	1910	1900	1890	1880
Number of all farms.....	9,227	5,809	1,426	767
<b>Farms operated by owners and managers.</b>	<b>8,366</b>	<b>5,320</b>	<b>1,313</b>	<b>666</b>
Farms consisting of owned land only.....	7,759	4,794	(1)	(1)
Farms consisting of owned and hired land.	444	191	(1)	(1)
Farms operated by managers.....	163	335	(1)	(1)
<b>Farms operated by tenants.....</b>	<b>861</b>	<b>489</b>	<b>113</b>	<b>101</b>
Share tenants.....	272	189	62	59
Share-cash tenants <sup>2</sup> .....	18			
Cash tenants.....	466	300	51	42
Tenure not specified <sup>3</sup> .....	105			
<b>Per cent of farms operated by—</b>				
Owners and managers.....	90.7	91.6	92.1	86.8
Tenants.....	9.3	8.4	7.9	13.2
Share and share-cash.....	3.1	3.3	4.3	7.7
Cash and nonspecified.....	6.2	5.2	3.6	5.5

<sup>1</sup> Not reported separately.

<sup>2</sup> Share-cash tenants were doubtless largely included with share tenants in 1900, 1890, and 1880.

<sup>3</sup> Prior to 1910 nonspecified tenants were included with cash tenants.

The number of farm operators is 9,227, of whom 8,203 are classified as owners, 163 as managers, and 861 as tenants. Of the owners, 7,759 operate exclusively land

owned by them, while 444 operate land which they rent in addition to that which they own. The tenants are further distributed according to the character of their tenancy; thus 272 are share tenants, 18 share-cash tenants, 466 cash tenants; and for 105 no report relative to character of tenure was secured.

During the past decade the number of tenant farms increased from 489 to 861, representing an increase of 372, as compared with an increase of 3,046 in the farms operated by owners and managers, the latter, however, being the smaller relative increase. In 1880 the number of tenant farms was 101 and in 1890 it was 113, although the total number of farms had about doubled. Thus the proportion of tenant farms fell from 13.2 per cent in 1880 to 7.9 per cent in 1890; in 1900, however, it had increased to 8.4 per cent and in 1910 to 9.3 per cent. The percentage in 1910 was low in comparison with that for the Mountain and Pacific divisions combined (14), and lower still in comparison with that for the United States as a whole (37). This small proportion of tenant farms represents, however, a usual condition in newly settled portions of the United States.

In order to compare the figures for 1910 with those for earlier censuses, it is necessary to group the share-cash tenants with the share tenants, and those with tenure not specified with the cash tenants. Throughout the period from 1880 to 1910 the latter class has constituted an increasing proportion of all tenants. In 1910, 6.2 per cent of the total number of farm operators belonged to this group, as compared with a corresponding percentage of 3.1 for the share and share-cash group.

The following table shows the total and improved acreage and the value of land and buildings for farms operated by owners (including part owners), managers, and tenants, respectively:

FARMS OPERATED BY—	ALL LAND IN FARMS (ACRES).		IMPROVED LAND IN FARMS (ACRES).		VALUE OF LAND AND BUILDINGS.	
	1910	1900	1910	1900	1910	1900
<b>Total.....</b>	<b>1,246,613</b>	<b>1,935,327</b>	<b>350,173</b>	<b>254,521</b>	<b>\$47,285,310</b>	<b>\$13,682,960</b>
Owners.....	874,914	523,117	254,439	195,733	33,196,611	9,125,880
Managers.....	264,798	1,354,854	35,871	27,640	5,800,694	3,238,090
Tenants.....	106,901	57,356	59,863	31,148	8,288,005	1,318,990

The following table shows the per cent distribution by tenure groups of the items in the preceding table, and also of the number of farms:

FARMS OPERATED BY—	PER CENT OF TOTAL.							
	Number of farms.		All land in farms.		Improved land in farms.		Value of land and buildings.	
	1910	1900	1910	1900	1910	1900	1910	1900
<b>Total.....</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Owners.....	88.9	85.8	70.2	27.0	72.7	76.9	70.2	66.7
Managers.....	1.8	5.8	21.2	70.0	10.2	10.9	12.3	23.7
Tenants.....	9.3	8.4	8.6	3.0	17.1	12.2	17.5	9.6



It will be seen that, in 1910, 70.2 per cent of all land in farms was in farms operated by their owners (including part owners), 21.2 per cent in farms operated by managers, and 8.6 per cent in farms operated by tenants, the percentage for owners and for tenants being higher and that for managers much lower than in 1900.

As shown by the next table, the average size of farms operated by managers in 1910 (1,624.5 acres) was about thirteen times as great as that of farms operated by tenants (124.2 acres), which was in turn larger than that of farms operated by owners (106.7 acres). The average size of farms operated by owners and by tenants increased between 1900 and 1910, while that of farms operated by managers decreased decidedly. In 1910 the percentage of farm land improved was highest for farms operated by tenants and lowest for those operated by managers.

FARMS OPERATED BY—	AVERAGE ACRES PER FARM.				PER CENT OF FARM LAND IMPROVED.		AVERAGE VALUE OF LAND AND BUILDINGS.			
	All land.		Improved land.		1910	1900	Per farm.		Per acre.	
	1910	1900	1910	1900			1910	1900	1910	1900
Total.....	135.1	333.2	38.0	43.8	28.1	13.2	\$5,125	\$2,355	\$37.93	\$7.07
Owners.....	106.7	104.9	31.0	39.3	29.1	37.4	4,047	1,831	37.94	17.45
Managers.....	1,624.5	4,044.3	220.1	82.5	13.5	2.0	35,537	9,660	21.91	2.39
Tenants.....	124.2	117.3	69.5	63.7	56.0	54.3	9,620	2,697	77.53	23.00

**Farm mortgages: 1890 to 1910.**—The Eleventh Census (1890) was the first to collect data relating to mortgage debt on farms. The basis of the returns was the "farm home" occupied by its owner. The same class of information was secured by the population schedules of the Twelfth Census (1900). The agricultural schedules of the Thirteenth Census (1910) secured practically the same information, except that the basis was "owned farms" instead of "owned farm homes"—a difference involving, however, no appreciable incomparability.

The following table relates to farms operated by persons owning all or part of the land, and shows for 1910 (1) the number of such farms reported as free from mortgage; (2) the number reported as mortgaged; and (3) the number for which no mortgage reports were secured. Comparable items are included for 1900 and 1890.

CLASS.	OWNED FARMS. <sup>1</sup>		OWNED FARM HOMES.		OWNED FARM HOMES. <sup>2</sup>	
	1910		1900		1890	
	Number.	Per cent. <sup>3</sup>	Number.	Per cent. <sup>3</sup>	Number.	Per cent.
Total.....	8,203		6,452		1,842	
Free from mortgage.....	7,038	87.1	5,924	94.0	1,716	93.2
Mortgaged.....	1,043	12.9	380	6.0	126	6.8
Unknown.....	122		148			

<sup>1</sup> Includes all farms owned in whole or in part by the operator.  
<sup>2</sup> The 122 "owned farm homes" for which no reports were secured were distributed between "free from mortgage" and "mortgaged" in 1890.  
<sup>3</sup> Per cent of combined total of "free from mortgage" and "mortgaged."

In 1910 the total number of farms owned in whole or in part by the operators was 8,203. Of this number

7,038 were reported as free from mortgage; 1,043 were reported as mortgaged; and for 122 no report relative to mortgage indebtedness was obtained. The number of mortgaged farms constituted 12.9 per cent of the total number of owned farms, exclusive of those for which no mortgage report was obtained, a proportion about double those for 1900 and 1890. It may be noted that the percentages given for the three censuses are comparable, but that the number of mortgaged and unmortgaged farms reported in 1890 is not entirely comparable with the numbers reported at the later censuses because at the census of 1890 the farms for which no reports were secured were distributed between the two classes of mortgaged and unmortgaged farms. It can be seen, however, that from 1890 to 1910 the number free of mortgage has increased much more than the number mortgaged.

The statement of mortgage debt and of the value of mortgaged farm property is restricted to the farms of those farmers who own all of their land and report the amount as well as the fact of indebtedness. Of the 1,043 farms reported as mortgaged, 883 are wholly owned by the farmers, and for 813 of these the amount of mortgage debt is reported. Only these last-mentioned farms are included for 1910 in the next table, which presents data relating to mortgaged farms for 1910 and 1890. In this connection it should be noted that in 1890 the amount of mortgage debt of farms with incomplete reports was estimated according to the percentages and averages obtained from farms with full reports, but that no such estimate is here made for 1910. The table gives a comparative statement of the value of mortgaged farms owned entirely by their operators and the amount of indebtedness, together with the average value of such farms, the average debt per farm, and the average equity per farm for 1910 and 1890. Data regarding the amount of mortgage debt were not obtained in 1900.

	OWNED FARMS OR FARM HOMES MORTGAGED.		INCREASE.	
	1910 <sup>1</sup>	1890 <sup>2</sup>	Amount.	Percent.
Number.....	813	126		
Value—Land and buildings.....	\$8,695,498	\$550,379		
Amount of mortgage debt.....	\$2,253,252	\$225,626		
Per cent of debt to value.....	25.9	40.6		
Average value per farm.....	\$10,696	\$4,416	\$6,280	142.2
Average debt per farm.....	\$2,772	\$1,791	\$981	54.8
Average equity per farm.....	\$7,924	\$2,625	\$5,299	201.9

<sup>1</sup> Includes only farms consisting wholly of owned land and reporting value of farm and amount of debt.  
<sup>2</sup> Includes all owned farm homes, estimates being made of value of farms and amount of debt for all defective reports.

The average debt of mortgaged farms increased in the 20 years covered by the table from \$1,791 to \$2,772, or 54.8 per cent, while the average value of such farms rose from \$4,416 to \$10,696, or 142.2 per cent. Thus the owner's equity increased from \$2,625 to \$7,924, or 201.9 per cent. As a result of the greater relative

increase in farm values than in farm debt, the mortgage indebtedness, which was 40.6 per cent of the value of the mortgaged farm in 1890, was 25.9 per cent of this value in 1910.

Farms by size groups: 1910 and 1900.—The following table shows the distribution of farms by size groups at the censuses of 1910 and 1900:

SIZE GROUP.	NUMBER OF FARMS.		INCREASE.		PER CENT OF TOTAL.	
	1910	1900	Number.	Per cent.	1910	1900
					1910	1900
Total.....	9,227	5,809	3,418	58.8	100.0	100.0
Under 3 acres.....	1,595	814	781	95.9	17.3	14.0
3 to 9 acres.....	912	718	194	27.0	9.9	12.4
10 to 19 acres.....	839	506	333	65.8	9.1	8.7
20 to 49 acres.....	1,477	922	555	60.2	16.0	15.9
50 to 99 acres.....	820	674	146	21.7	8.9	11.6
100 to 174 acres.....	2,591	1,581	1,010	63.9	28.1	27.2
175 to 259 acres.....	263	143	120	33.9	2.9	2.5
260 to 499 acres.....	494	268	226	34.3	5.4	4.6
500 to 999 acres.....	164	112	52	46.4	1.8	1.9
1,000 acres and over.....	72	71	1	1.4	0.8	1.2

More than one-fourth of all the farms in Arizona are from 100 to 174 acres in size, and about one-sixth from 20 to 49 acres, these two groups combined, which include the 160-acre and the 40-acre farms, containing over two-fifths of all. A study of the distribution of farms by size groups discloses the fact that of the groups in the table given above the greatest absolute gain, 1,010, was in those from "100 to 174 acres" in size. The greatest relative gain was made in those of less than 3 acres; but it should be noted that this group is composed mainly of ranges or ranches for which no acreage reports were given, and not of farms actually under 3 acres in size. Although all groups show increases in number of farms, that comprising the farms of 1,000 acres and over increased by only a single farm.

The following table shows the total and improved acreage and the value of land and buildings for farms of various size groups, consolidating into one group the farms of less than 20 acres (numbering in all 3,346), and also the farms of between 175 and 499 acres (numbering 757):

SIZE GROUP.	ALL LAND IN FARMS (ACRES).		IMPROVED LAND IN FARMS (ACRES).		VALUE OF LAND AND BUILDINGS.	
	1910	1900	1910	1900	1910	1900
					1910	1900
Total.....	1,246,613	1,935,327	350,173	254,521	\$47,285,310	\$13,682,960
Under 20 acres.....	15,496	12,830	14,367	11,437	2,623,273	666,390
20 to 49 acres.....	40,757	29,530	37,271	23,057	5,824,965	1,350,490
50 to 99 acres.....	59,047	49,856	38,273	31,722	5,862,040	1,576,090
100 to 174 acres.....	399,210	241,983	95,442	77,202	12,157,575	3,745,080
175 to 499 acres.....	225,491	125,102	79,633	53,196	10,120,344	2,461,100
500 to 999 acres.....	112,612	70,114	37,001	20,482	3,873,652	1,345,230
1,000 acres and over.....	388,000	1,399,912	48,186	28,425	6,822,861	2,538,580

The next table shows the per cent distribution, by size groups, of the items presented in the preceding table, and also of the number of farms.

Of the total farm acreage of the state in 1910, 32 per cent was in farms of 100 to 174 acres, and 31.1 per cent in farms of 1,000 acres and over, these two being from the standpoint of aggregate acreage the most

important size groups. The most noteworthy change between 1900 and 1910 was the decided decrease in the proportion of the total acreage which was in farms of 1,000 acres and over, offset by increases in the proportion in every other size group, the greatest increase being for farms of 100 to 174 acres.

SIZE GROUP.	PER CENT OF TOTAL.							
	Number of farms.		All land in farms.		Improved land in farms.		Value of land and buildings.	
	1910	1900	1910	1900	1910	1900	1910	1900
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Under 20 acres.....	36.3	35.1	1.2	0.7	4.1	4.5	5.5	4.0
20 to 49 acres.....	16.0	15.9	3.8	1.5	10.6	9.1	12.3	9.9
50 to 99 acres.....	8.9	11.6	4.7	2.6	10.9	12.5	12.4	11.5
100 to 174 acres.....	28.1	27.2	32.0	12.5	27.3	30.3	25.7	27.4
175 to 499 acres.....	8.2	7.1	18.1	6.5	22.7	20.9	21.4	18.0
500 to 999 acres.....	1.8	1.9	9.0	3.9	10.6	11.6	8.2	9.8
1,000 acres and over.....	0.8	1.2	31.1	72.3	13.8	11.2	14.4	18.6

In general, as shown by the next table, the percentage of farm land improved diminishes as the size of the farms increases. For this reason and also because buildings have normally a higher value in proportion to farm acreage on small than on large farms, the average value of land and buildings per acre of land in general also diminishes with the increase in the size of the farms. The one exception is in the farms of 100 to 174 acres, which have a lower proportion of improved land and a lower value of land and buildings per acre than the farms in any other size group, except that of 1,000 acres and over.

SIZE GROUP.	PER CENT OF FARM LAND IMPROVED.		AVERAGE VALUE OF LAND AND BUILDINGS.			
	1910	1900	Per farm.		Per acre.	
			1910	1900	1910	1900
Total.....	28.1	13.2	\$5,125	\$2,355	\$37.93	\$7.07
Under 20 acres.....	92.7	89.1	784	327	169.29	51.94
20 to 49 acres.....	79.7	78.1	3,944	1,465	124.58	45.73
50 to 99 acres.....	64.8	63.6	7,150	2,338	99.29	31.61
100 to 174 acres.....	23.9	31.9	4,692	2,369	30.45	15.48
175 to 499 acres.....	35.3	42.5	13,369	5,988	44.88	19.67
500 to 999 acres.....	32.9	38.7	23,620	12,011	34.40	17.07
1,000 acres and over.....	12.4	2.0	94,762	35,755	17.58	1.81

Color and nativity of farmers: 1910.—Prior to the Thirteenth Census no attempt was made to secure information on the farm schedules concerning the nativity of farmers. The table which follows shows the color and nativity of farm operators by character of tenure for 1910:

COLOR AND NATIVITY.	FARM OPERATORS.							
	Total.			Per cent of total.				
	Num-ber.	Per cent dis-tribu-tion.	Own-ers.	Ten-ants.	Man-agers.	Own-ers.	Ten-ants.	Man-agers.
Total.....	9,227	100.0	8,203	861	163	88.9	9.3	1.8
Native white.....	5,213	56.6	4,410	983	125	84.5	13.1	2.4
Foreign-born white.....	806	8.7	644	135	27	79.9	16.7	3.3
Negro and other non-white.....	3,203	34.7	3,149	43	11	93.3	1.3	0.3

Of the Arizona farmers, 56.6 per cent were native whites and 8.7 per cent foreign-born whites; 3,203, or 34.7 per cent, were nonwhites, 3,159 being Indians; 27, Chinese; 12, negroes; and 5, Japanese. Among the native white farmers, 13.1 per cent were tenants and 2.4 per cent managers; among the foreign-born whites,

16.7 per cent were tenants and 3.3 per cent managers. Of the 806 foreign-born white farmers in Arizona in 1910, 116 were born in Germany, 95 in England, 86 in Canada, and 51 in Denmark. Other European countries were represented by a total of 252 farmers, and non-European countries, other than Canada, by 206.

### DOMESTIC ANIMALS, POULTRY, AND BEES.

**Domestic animals on farms: 1910.**—The census of 1910 was taken as of April 15 and that of 1900 as of June 1. Since a great many domestic animals are born during the six weeks between April 15 and June 1, and on the other hand a considerable number of older animals are slaughtered or die during the same period, the numbers of the different classes of animals for the two censuses are not closely comparable, and the same is true in somewhat less degree of the values. For this reason the figures for 1900 are not presented in this chapter, but in the general reports of the census the figures for the several states will be presented and the extent to which their comparability is affected by the change in the date of enumeration will be discussed.

Of the total number of farms enumerated, 8,790, or 95.3 per cent, report domestic animals of some kind, the number without any domestic animals being only 437.

Of all farms, cattle are reported by 67.5 per cent, "dairy cows" by 43.4 per cent, and "other cows" by 32.8 per cent. The number of cows not kept for dairy purposes is, however, more than thirteen times as great as that of "dairy cows." The average number of "dairy cows" per farm reporting is only 7, while the average number of "other cows" per farm reporting that class is about 127.

All classes of cattle except calves increased considerably during the decade. The census of 1900 was taken as of June 1, after all the spring calves were born, while that of 1910 was taken as of April 15, before the close of the calving season and when the calves on hand were on the average younger than at the enumeration of 1900. As a result, the calves enumerated were fewer in number and of lower average value in 1910 than in 1900, the number decreasing from 135,181 to 57,887 and the average value decreasing from \$8.38 to \$7.02.

Horses are reported by 90.1 per cent of all the farms. It is noteworthy that 30.8 per cent report colts born in 1909 and 20.5 per cent report spring colts. The average value of mature horses is nearly three times that reported in 1900. Mules are reported by only 12.9 per cent of the farms, the number of this class of animals being equal to only 4 per cent of the total number of horses. The average value of mature mules is more than twice that of horses.

Sheep and lambs are reported from only 1,627 farms, or 17.6 per cent of all farms. Of these farms, 81.9 per cent report spring lambs, the number of the latter being equal to 41.2 per cent of the number of ewes. Ewes are reported from all but 11 of the farms reporting

sheep, and for the farms reporting the average is 466 ewes per farm. The average flock, excluding spring lambs, numbers 563, while in 1900 it numbered 1,110.

The following table summarizes the statistics of domestic animals for the state recorded as of April 15, 1910. Cattle and sheep are divided into age and sex groups, while horses, mules, and swine are presented by age groups only.

AGE AND SEX GROUP.	FARMS REPORTING.		ANIMALS.		
	Number.	Per cent of all farms.	Number.	Value.	Average value.
Total.....	8,790	95.3	.....	\$24,376,530	.....
<b>Cattle</b> .....	6,225	67.5	824,929	14,624,708	\$17.73
Dairy cows (cows and heifers kept for milk, born before Jan. 1, 1909).....	4,000	43.4	28,862	1,273,070	44.11
Other cows (cows and heifers not kept for milk, born before Jan. 1, 1909).....	3,025	32.8	384,091	6,742,626	17.55
Heifers born in 1909.....	3,418	37.0	93,113	1,287,024	13.82
Calves born after Jan. 1, 1910.....	3,400	36.8	57,887	406,341	7.02
Steers and bulls born in 1909.....	2,428	26.3	80,554	1,279,161	14.78
Steers and bulls born before Jan. 1, 1909.....	1,647	17.8	91,575	2,078,490	22.70
Unclassified.....	710	7.7	82,847	1,557,990	18.81
<b>Horses</b> .....	8,309	90.1	99,578	4,209,726	42.28
Mares, stallions, and geldings born before Jan. 1, 1909.....	7,668	83.1	74,788	3,681,406	40.22
Colts born in 1909.....	2,843	30.8	11,276	256,106	22.71
Colts born after Jan. 1, 1910.....	1,891	20.5	5,775	79,422	13.75
Unclassified.....	664	7.2	7,739	192,792	24.91
<b>Mules</b> .....	1,104	12.9	3,963	399,449	100.79
Mules born before Jan. 1, 1909.....	1,102	11.9	3,507	379,905	108.33
Mule colts born in 1909.....	160	1.7	338	17,167	50.79
Mule colts born after Jan. 1, 1910.....	58	0.6	118	2,377	20.14
<b>Asses and burros</b> .....	1,338	14.5	7,104	73,092	10.29
<b>Swine</b> .....	1,681	18.2	17,208	113,714	6.61
Hogs and pigs born before Jan. 1, 1910.....	1,383	15.0	10,422	91,479	8.78
Pigs born after Jan. 1, 1910.....	727	7.9	6,786	22,235	3.28
<b>Sheep</b> .....	1,627	17.6	1,226,733	4,400,514	3.59
Ewes born before Jan. 1, 1910.....	1,616	17.5	752,413	3,031,764	4.03
Rams and wethers born before Jan. 1, 1910.....	1,362	14.8	164,187	635,520	3.87
Lambs born after Jan. 1, 1910.....	1,332	14.4	310,133	733,230	2.36
<b>Goats</b> .....	911	9.9	246,617	555,327	2.25

Of all farms, 18.2 per cent report swine, the average number being 10 per farm reporting. Only 7.9 per cent of all farms report spring pigs, which is due largely no doubt to the early date of enumeration. The average value of the swine reported under the head of "hogs and pigs born before January 1, 1910," is \$8.78.

**Poultry on farms: 1910 and 1900.**—The following table gives the numbers of the various kinds of poultry reported in 1910 and 1900, together with their value and the number of farms reporting each kind in 1910:

KIND.	1910 (April 15)				1900 (June 1)
	Farms reporting.		Number of fowls.	Value.	
	Number.	Per cent of all farms.			
Total.....	5,040	54.6	268,762	\$1,545,966	174,872
Chickens.....	5,020	54.4	252,657	164,327	165,200
Turkeys.....	836	9.1	5,498	12,507	6,043
Ducks.....	295	3.2	1,824	1,365	2,439
Geese.....	87	0.9	701	1,365	840
Guinea fowls.....	107	1.2	401	365	(1)
Pigeons.....	124	1.3	3,568	830	(2)
Ostriches.....	13	0.1	4,028	1,365,000	450
Peafowls.....	5	0.1	25	175	(2)

1 Included with chickens.

2 Not reported.

The increase in the number of fowls, exclusive of ostriches, on Arizona farms during the last decade amounts to 90,212, or 51.7 per cent, while the corresponding increase in value is \$100,000, or 124 per cent. The number of farms reporting poultry increased from 3,304 to 5,040, or 52.5 per cent. Thirteen farms report ostriches, the number reported being 4,028 and their value \$1,365,000, or an average of \$338.88. In 1900, 450 ostriches were reported, with a value of \$22,500, or an average of \$50 per fowl. The value of poultry and the number of farms reporting were obtained in 1900 for the total of all fowls only, and not for each kind as in 1910.

**Bees on farms: 1910 and 1900.**—The number of farms reporting bees has decreased from 489 in 1900 to 441 in 1910, or 9.8 per cent. The number of colonies of bees increased from 18,991 to 23,770, or 25.2 per cent, and their value increased from \$66,603 to \$104,374, or 56.7 per cent. The average value of bees per farm reporting was \$136.20 in 1900 and \$236.68 in 1910. About one farm in every twenty reports bees.

**Domestic animals not on farms: 1910.**—Statistics for domestic animals not on farms follow.

No provision was made by law to secure data pertaining to poultry and bees not on farms. In the next table age groups are omitted for the sake of brevity, but it may be noted that a comparatively small proportion of the animals of each class are in the younger age groups.

As would be expected, horses are the most important class of domestic animals not on farms, both in number and in value; goats rank next in importance when number is considered, while cattle (including dairy cows) rank next in value.

KIND.	Number of inclosures reporting.	ANIMALS.		
		Number.	Value.	Average value.
Total.....	5,153		\$1,562,564	
All cattle.....	1,222	8,529	203,017	\$23.80
Dairy cows.....	1,030	2,150	97,206	45.21
Horses.....	4,374	15,031	1,121,618	74.62
Mules.....	290	1,321	162,976	123.37
Asses and burros.....	643	2,878	27,270	9.48
Swine.....	224	1,304	15,083	11.57
Sheep.....	31	1,131	2,817	2.49
Goats.....	115	12,779	29,783	2.33

**Domestic animals on farms and not on farms: 1910.**—The following table gives the total number and value of domestic animals, distinguishing those on farms from those not on farms:

KIND.	DOMESTIC ANIMALS.					
	Total.		On farms.		Not on farms.	
	Number.	Value.	Number.	Value.	Number.	Value.
Total.....		\$25,939,094		\$24,376,530		\$1,562,564
All cattle.....	833,458	14,827,725	824,929	14,624,708	8,529	203,017
Dairy cows.....	31,012	1,370,282	28,862	1,273,076	2,150	97,206
Horses.....	114,609	5,331,344	99,578	4,209,726	15,031	1,121,618
Mules.....	5,284	562,425	3,963	399,449	1,321	162,976
Asses and burros.....	9,982	100,362	7,104	73,092	2,878	27,270
Swine.....	18,512	128,797	17,208	113,714	1,304	15,083
Sheep.....	1,227,864	4,403,331	1,226,733	4,400,514	1,131	2,817
Goats.....	259,396	585,110	246,617	555,327	12,779	29,783

The total value of all domestic animals in the state in 1910 was \$25,939,000, of which the value of animals not on farms constituted 6 per cent.

**LIVE STOCK PRODUCTS.**

The returns for live stock products obtained at the census of 1910, like those for crops, relate to the activities of the calendar year 1909. It is impossible to give a total representing the annual production of live stock products for the reason that, as shown elsewhere, the total value of products from the business of raising domestic animals for use, sale, or slaughter can not be calculated from the census returns. Even if this value could be ascertained and were added to the value of the crops the sum would not correctly represent the total value of farm products, because, as already more fully explained, duplication would result from the fact that part of the crops are fed to the live stock.

**Dairy products: 1909 and 1899.**—The number of farms reporting dairy cows on April 15, 1910, was 4,000, but

only 2,734 reported dairy products in 1909. That there should be this difference is not surprising. Doubtless some farmers who had dairy cows in 1910 had none in 1909, while other farmers neglected to give information for the preceding year, or were unable to do so, perhaps because the farm was then in other hands. Dairy products in general are somewhat less accurately reported than the principal crops. This is particularly the case as regards the quantity of milk produced. The number of farms which made any report of milk produced during 1909 was 2,333 (somewhat less than the total number reporting dairy products), and the number of dairy cows on such farms on April 15, 1910, was 17,668. The amount of milk reported was 6,882,000 gallons; assuming that there were the same number of cows in 1909 as in 1910, this would represent an

average of 389 gallons per cow. In considering this average, however, it should be borne in mind that the quantity of milk reported is probably deficient and that the distinction between dairy and other cows is not always strictly observed in the census returns.

By reason of the incompleteness of the returns for milk produced, the Census Bureau has made no attempt to determine the total value of dairy products for 1909. For convenience a partial total has been presented comprising the reported value of milk, cream, and butter fat sold and the reported value of butter and cheese made, whether for home consumption or for sale. The total thus obtained for 1909 is \$909,000, which may be defined as the total value of dairy products exclusive of milk and cream used on the farm producing.

About one-half of the milk reported as produced by Arizona farmers in 1909 was sold as such. In addition, considerable quantities of milk and cream were sold as butter fat. The butter made on farms in 1909 was valued at \$105,000.

The following table shows the principal statistics relative to dairy products in 1909, with certain comparative statistics for 1899:

	FARMS REPORTING.		Number or quantity.	Unit.	VALUE.	
	Num-ber.	Per cent of all farms.			Total.	Average per unit.
Dairy cows on farms April 15, 1910.....	4,000	43.4	28,892	Head..		
On farms reporting dairy products in 1909.....	2,734	29.6	22,687	Head..		
On farms reporting milk produced in 1909.....	2,333	25.3	17,668	Head..		
Specified dairy products, 1909:						
Milk reported.....			6,881,608	Gals..		
Butter made.....	1,599	17.0	325,980	Lbs..	\$105,347	\$0.32
Cheese made.....	97	1.1	60,690	Lbs..	9,116	0.15
Milk sold.....	515	5.6	3,347,723	Gals..	573,095	0.17
Cream sold.....	57	0.6	37,744	Gals..	37,280	0.99
Butter fat sold.....	280	3.1	665,850	Lbs..	184,574	0.28
Butter sold.....	453	4.9	120,951	Lbs..	39,924	0.33
Cheese sold.....	53	0.6	50,181	Lbs..	7,337	0.15
Total receipts from sales, 1909.....					842,210	
Total value of milk, cream, and butter fat sold and butter and cheese made, 1909.....					909,411	
Specified dairy products, 1899:						
Butter made.....	1,234	21.2	379,311	Lbs..		
Cheese made.....	38	0.7	33,305	Lbs..		
Butter sold.....			208,974	Lbs..	52,168	0.25
Cheese sold.....			26,635	Lbs..	3,969	0.15

Comparisons are made between 1909 and 1899 for but few of the census items relating to dairy products, for the reason that in 1899 estimates were made for farms with incomplete reports, which was not done at the census of 1910. The figures for milk produced and milk sold are particularly affected, but those for butter and cheese are approximately comparable. The table shows a material decrease between 1899 and 1909 in the amount of butter made, and a decided increase in the production of cheese, which, however, is still unimportant.

Wool: 1909 and 1899.—The next table gives statistics as to the production of wool on farms, the figures being partly based on estimates.

The total number of sheep of shearing age in Arizona on April 15, 1910, was 917,000, representing an increase of 37.1 per cent as compared with the number on June 1, 1900 (668,000). The approximate production of wool during 1909 was 919,000 fleeces, weighing 5,504,000 pounds, and valued at \$984,000. Of these totals about 22 per cent represents estimates. The number of fleeces produced in 1909 was 16.1 per cent greater than in 1899. The average weight per fleece in 1909 was 6 pounds, as compared with 4.2 pounds in 1899, and the average value per pound was 18 cents, as compared with 13 cents in 1899.<sup>1</sup>

	Number of farms reporting.	Sheep of shearing age.	WOOL PRODUCED:		
			Fleeces (number).	Weight (pounds).	Value.
Sheep of shearing age on farms April 15, 1910.....	1,161	916,600			
Wool produced, as reported, 1909.....	680		713,905	4,277,878	\$764,518
On farms reporting sheep April 15, 1910.....	667	705,782	707,391	4,237,926	757,496
On other farms.....	13		6,514	39,947	7,022
Total production of wool (partly estimated):					
1909.....			918,690	5,503,800	983,761
1899.....			791,361	3,352,937	426,318
Increase, 1899 to 1909.....			127,329	2,150,863	557,443
Per cent of increase.....			16.1	64.1	130.8

Goat hair and mohair: 1909 and 1899.—Although 911 farmers reported 246,617 goats and kids on their farms April 15, 1910, only 114 reported the production of goat hair or mohair during 1909. These farmers reported 103,226 fleeces, weighing 246,032 pounds and valued at \$63,120. The importance of the production increased decidedly between 1899 and 1909. Many farmers who have goats do not produce goat hair or mohair, but it is believed that the report is somewhat short of the actual production.

Poultry products: 1909 and 1899.—The total number of fowls on Arizona farms on April 15, 1910, was 269,000. Of the 5,040 farms reporting fowls, 1,810 did not report any eggs produced in 1909, and 1,893 did not report any poultry raised in 1909. The production of eggs actually reported for the year 1909 was 1,311,000 dozens, valued at \$399,000. According to the Twelfth Census reports, the production of eggs in 1899 was 820,000 dozens, the value being \$163,000. The latter figures, however, are somewhat in excess of the actual returns at that census, because

<sup>1</sup> Farmers should be able in general to report the production of wool more accurately than that of dairy products. There were, however, 494 farmers who reported the possession of 210,818 sheep of shearing age on April 15, 1910, without reporting any wool produced in 1909. Probably in a large proportion of cases this failure was due to the fact that they did not have these sheep, or did not occupy the same farm, during the preceding year. The returns of farms reporting wool in 1909 but no sheep of shearing age on April 15, 1910, would partially make up this deficiency, but it is believed that in many cases enumerators, having found that a farm had no sheep in 1910, omitted the inquiry as to wool produced in 1909, and thus missed more or less wool actually produced. It is a fairly safe assumption that the entire production of wool in 1909 bore the same relation to the entire number of sheep of shearing age on April 15, 1910, as the production of wool on those farms reporting both production and sheep bore to the number of sheep reported on such farms. Statistics for this group of farms are given in the table, and the total wool product, estimated on the basis of the above assumption, is also given.

they include estimates made to cover those cases where the schedules reported fowls on hand without reporting the production of eggs. In order to make the returns for 1909 comparable with those published for 1899 similar estimates have been made, the method of estimate and the justification therefor being substantially the same as in the case of wool. The total production of eggs in 1909, including these estimates, was 1,744,000 dozens, valued at \$531,000. The total production of poultry in 1909, including estimates made on the same basis as for eggs, was 392,000 fowls, valued at \$226,000.

The statement below gives data relative to the production and sale of eggs and poultry:

	Number of farms reporting.	Number of fowls on hand.	PRODUCT.	
			Quantity.	Value.
Fowls on farms April 15, 1910.....	5,040	268,762		
On farms reporting eggs produced in 1909.....	3,230	206,043		
On other farms.....	1,810	62,719		
Eggs produced, as reported, 1909.....	3,302		Dozens.	\$398,095
Total production of eggs (partly estimated):			1,311,134	
1909.....			1,744,081	530,746
1899.....			819,507	163,274
Increase, 1899 to 1909.....			924,574	367,472
Per cent of increase.....			112.8	225.1
Eggs sold, as reported, 1909.....	2,228		820,377	250,488
Fowls on farms April 15, 1910:				
On farms reporting poultry raised in 1909.....	3,147	197,842		
On other farms.....	1,893	70,920		
Poultry raised, as reported, 1909.....	3,280		No. of fowls.	166,099
Total poultry raised (partly estimated):			288,771	
1909.....			392,280	225,640
1899.....				114,884
Increase, 1899 to 1909.....				110,756
Per cent of increase.....				96.4
Fowls sold, as reported, 1909.....	1,952		134,098	85,277

**Honey and wax: 1909.**—Although, as noted elsewhere, 441 farms reported 23,770 colonies of bees on hand April 15, 1910, 163 of these farms, with 2,664 colonies on hand April 15, 1910, made no report of honey or wax produced in 1909. The actual returns show the production of 1,025,282 pounds of honey, valued at \$53,298, and 15,012 pounds of wax, valued at \$3,905; the true totals are doubtless somewhat above these figures.

**Sale or slaughter of domestic animals on farms: 1909 and 1899.**—The total value of domestic animals sold during the year was \$4,532,000, and that of

animals slaughtered on farms \$316,000, making an aggregate of \$4,847,000. This total, however, involves considerable duplication, resulting from the resale or slaughter of animals which had been purchased by the farmers during the same year.

The total value of the cattle (including calves) sold during 1909 represented about three-fourths of the total value of animals sold, and the value of sheep sold ranked next in importance.

The census of 1900 called for the receipts from the sale of all domestic animals raised on the farms reporting and the total value of those slaughtered during 1899, which amounted, respectively, to \$2,909,000 and \$296,000. The item of sales is not closely comparable with that for 1909, when the inquiry covered all sales whether of animals raised on the farms reporting or elsewhere. It is believed, however, that in many cases the returns for 1899 also included receipts from sales of animals not actually raised on the farms reporting.

The following statement presents statistics relating to the sale or slaughter of domestic animals by Arizona farmers during the year 1909, with certain items for 1899:

	FARMS REPORTING.		Number of animals.	VALUE.	
	Number.	Per cent of all farms.		Total.	Average.
1909—All domestic animals:					
Sold.....				\$4,531,545	
Slaughtered.....				316,552	
Calves:					
Sold.....	659	7.1	7,525	67,136	\$8.92
Slaughtered.....	171	1.9	1,144	9,361	8.18
Other cattle:					
Sold.....	1,988	21.5	146,852	3,305,014	22.51
Slaughtered.....	942	10.2	10,773	220,814	20.50
Horses:					
Sold.....	777	8.4	4,357	255,130	58.56
Mules:					
Sold.....	69	0.7	216	28,752	133.11
Asses and burros:					
Sold.....	26	0.3	69	2,097	30.39
Swine:					
Sold.....	489	5.3	9,780	82,318	8.42
Slaughtered.....	816	8.8	3,299	44,124	13.37
Sheep:					
Sold.....	133	1.4	205,496	749,203	3.65
Slaughtered.....	194	2.1	8,125	26,238	3.23
Goats:					
Sold.....	73	0.8	17,765	41,889	2.36
Slaughtered.....	227	2.5	6,634	15,020	2.26
1899—All domestic animals:					
Sold.....				2,908,745	
Slaughtered.....				296,013	

<sup>1</sup> Schedules called for receipts from sales of animals raised on the farms reporting.

**CROPS.**

**Summary: 1909 and 1899.**—The next table summarizes the census data relative to all of the farm crops of 1909 and 1899. It includes not only general farm crops, but also flowers and plants, nursery products, and forest products of farms. In comparing one year with the other it should be borne in mind that acreage is on the whole a better index of the general changes or tendencies of agriculture than either the quantity or the value of the crops, since variations in

quantity may be due largely to temporarily favorable or unfavorable climatic conditions, and variations in the value of the crops are largely affected by changes in prices. (See also discussion of "Total value of farm products.")

The total value of crops in 1909 was \$5,497,000. Of this amount, 90.2 per cent was contributed by crops for which the acreage as well as the value was reported, the remainder consisting of the value of by-products



(straw, garden and grass seeds, etc.) derived from the same land as other crops reported, or of orchard fruits, nuts, forest products, and the like. The combined acreage of crops for which acreage was reported was 190,982, representing 54.5 per cent of the total im-

proved land in farms (350,173 acres). Most of the remaining improved land doubtless consisted of improved pasture, land lying fallow, house and farm yards, and land occupied by orchards and vineyards, the acreage for which was not reported.

	ACRES.				PER CENT OF IMPROVED LAND OCCUPIED.		VALUE OF PRODUCTS.						
	1909	1899	Increase. <sup>1</sup>		1909	1899	1909	1899	Increase. <sup>1</sup>		Per cent of total.		
			Amount.	Per cent.					Amount.	Per cent.	1909	1899	
All crops.....								\$5,496,872	\$2,472,348	\$3,024,524	122.3	100.0	100.0
<b>Crops with acreage reports.....</b>	<b>190,982</b>	<b>150,781</b>	<b>40,201</b>	<b>26.7</b>	<b>54.5</b>	<b>59.2</b>	<b>4,958,938</b>	<b>2,249,407</b>	<b>2,709,531</b>	<b>120.5</b>	<b>90.2</b>	<b>91.0</b>	
Cereals.....	75,269	53,958	21,311	39.5	21.5	21.2	1,570,853	673,630	897,214	133.2	28.6	27.2	
Other grains and seeds.....	2,301	859	1,532	178.3	0.7	0.3	47,206	14,143	33,063	233.8	0.9	0.6	
Hay and forage.....	102,490	92,674	9,816	10.6	29.3	36.4	2,553,228	1,362,112	1,191,116	37.4	46.4	55.1	
Cotton (including cotton seed).....	19	20	-1	( <sup>2</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	867	814	53	6.5	( <sup>3</sup> )	( <sup>3</sup> )	
Sugar crops.....	5,045	183	4,862	2,656.8	1.4	0.1	251,602	6,230	245,372	3,938.6	4.0	0.3	
Sundry minor crops.....	15	123	-108	-37.8	( <sup>3</sup> )	( <sup>3</sup> )	495	1,983	-1,488	-75.0	( <sup>3</sup> )	( <sup>3</sup> )	
Potatoes and sweet potatoes and yams.....	1,351	677	674	99.6	0.4	0.3	126,695	38,564	88,131	228.5	2.3	1.6	
Other vegetables.....	4,302	2,192	2,110	96.3	1.2	0.9	379,293	136,508	242,785	177.9	6.9	-5.5	
Flowers and plants and nursery products.....	24	16	8	( <sup>2</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	15,712	3,149	12,563	399.0	0.3	0.1	
Small fruits.....	76	79	-3	( <sup>2</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	12,987	12,265	722	5.9	0.2	0.5	
<b>Crops with no acreage reports.....</b>							<b>537,934</b>	<b>222,941</b>	<b>314,993</b>	<b>141.3</b>	<b>9.8</b>	<b>9.0</b>	
Seeds.....							156,840	6,958	149,882	2,154.1	2.9	0.3	
Fruits and nuts.....							334,598	4,161,596	173,002	107.1	6.1	6.5	
Forest products of farms.....							45,312	48,877	-3,565	-7.3	0.8	2.0	
Miscellaneous.....							1,184	5,510	-4,326	-78.5	( <sup>3</sup> )	0.2	

<sup>1</sup> A minus sign (-) denotes decrease.

<sup>2</sup> Per cent not calculated when base is less than 100.

<sup>3</sup> Less than one-tenth of 1 per cent.

<sup>4</sup> Includes value of raisins and other dried fruits, wine, cider, vinegar, etc.

The general character of Arizona agriculture is indicated by the fact that somewhat more than one-fourth (28.6 per cent) of the total value of crops in 1909 was contributed by the cereals, somewhat less than one-half (46.4 per cent) by hay and forage, and less than one-tenth (9.2 per cent) by potatoes and other vegetables. The remainder, representing in value 15.8 per cent of the total, consisted for the most part of fruits and nuts, sugar crops, and seeds.

The total value of the crops in 1909 was 122.3 per cent greater than in 1899, this increase being no doubt due in part to higher prices. There was an increase of 26.7 per cent in the total acreage of crops for which acreage was reported, there being increases in the acreage of every important crop.

General farm crops, minor grains and seeds, and sundry minor crops: 1879 to 1909.—The next table presents statistics for 1909 regarding cereals, other grains and seeds, hay and forage, potatoes, cotton, and sundry minor crops.

The leading crops of Arizona in the order of their importance, as judged by value, are hay and forage, \$2,553,000; barley, \$715,000; wheat, \$410,000; corn, \$294,000; alfalfa seed, \$157,000; oats, \$130,000; and potatoes, \$99,000. It should be noted, however, that some of the crops, statistics for which are reported in other tables, are more important than the last four mentioned above.

Of the total land area, 72,838,400 acres, the crops included in the next table occupy but 181,535 acres, or less than three-tenths of 1 per cent. In total acreage and value the combined cereals rank considerably below hay and forage. Among the cereals barley ranks first in acreage and value, representing about one-half of their total acreage and value. In both

acreage and value wheat, corn, and oats follow in the order named.

CROP.	Farms reporting.	Acres harvested.	QUANTITY.		Value.
			Amount.	Unit.	
<b>Cereals, total.....</b>		<b>75,269</b>	<b>1,878,980</b>	<b>Bu.....</b>	<b>\$1,570,853</b>
Corn.....	2,266	15,605	298,664	Bu.....	293,847
Oats.....	315	5,867	189,312	Bu.....	130,384
Wheat, total.....	1,409	20,028	362,875	Bu.....	410,214
Common winter.....	1,220	18,099	324,074	Bu.....	366,851
Common spring.....	189	1,929	38,801	Bu.....	43,363
Emmer and spelt.....	1	10	67	Bu.....	80
Barley.....	983	32,807	1,008,442	Bu.....	714,834
Buckwheat.....	1	40	600	Bu.....	900
Rye.....	6	21	261	Bu.....	239
Kafir corn and milo maize.....	109	801	18,739	Bu.....	20,355
<b>Other grains and seeds with acreage report, total.....</b>		<b>2,331</b>	<b>19,750</b>	<b>Bu.....</b>	<b>47,206</b>
Dry edible beans.....	776	2,301	18,457	Bu.....	44,997
Peanuts.....	20	9	345	Bu.....	608
Sorghum-cane seed.....	11	68	855	Bu.....	1,308
<b>Seeds with no acreage report, total<sup>2</sup>.....</b>					<b>156,840</b>
Alfalfa seed.....	126	( <sup>3</sup> )	22,492	Bu.....	156,628
<b>Hay and forage, total.....</b>	<b>3,738</b>	<b>102,490</b>	<b>259,750</b>	<b>Tons.</b>	<b>2,553,228</b>
Timothy alone.....	14	120	182	Tons.	1,948
Timothy and clover mixed.....	10	143	289	Tons.	4,934
Clover alone.....	4	119	119	Tons.	1,265
Alfalfa.....	2,179	66,102	194,534	Tons.	1,896,469
Millet or Hungarian grass.....	75	443	791	Tons.	11,683
Other tame or cultivated grasses.....	103	1,745	2,196	Tons.	31,129
Wild, salt, or prairie grasses.....	327	9,514	8,168	Tons.	81,987
Grains cut green.....	999	19,058	29,712	Tons.	368,316
Coarse forage.....	572	3,980	7,762	Tons.	84,003
Root forage.....	7	1,266	15,997	Tons.	71,404
Potatoes.....	634	1,151	97,141	Bu.....	98,597
Sweet potatoes and yams.....	139	200	21,206	Bu.....	28,098
Cotton.....	2	19	11	Bales.	730
Cotton seed (estimated).....			6	Tons.	137
Sundry minor crops, total <sup>4</sup> .....		15			495

<sup>1</sup> Includes small amount of dry peas.

<sup>2</sup> Includes small amounts of other varieties of grass seeds.

<sup>3</sup> The entire acreage from which these seeds were secured is believed to be included in the acreage given elsewhere for hay and forage crops, flowers and plants, etc.

<sup>4</sup> Includes small amounts of tobacco and broom corn.

Of the hay and forage crops, alfalfa ranks first, representing about two-thirds and three-fourths, respectively, of the acreage and value of the entire crop. "Grains cut green," "wild, salt, or prairie grasses," and

"coarse forage" rank, respectively, second, third, and fourth in acreage. "Coarse forage" slightly exceeds "wild, salt, or prairie grasses" in value.

Outside of cereals and hay and forage, alfalfa seed and potatoes are of the most importance from the standpoint of value. The value of alfalfa seed in 1909 was more than one-fifth as great as that of barley and nearly one and two-thirds as great as that of potatoes.

The fluctuations in the acreages of some of the principal crops during the past 30 years are shown in the following table:

CROP YEAR.	ACRES HARVESTED.					
	Corn.	Oats.	Wheat.	Barley.	Hay and forage.	Potatoes.
1909.....	15,605	5,867	20,028	32,897	102,490	1,151
1899.....	11,054	1,041	24,377	16,270	92,674	626
1889.....	4,331	1,472	6,225	10,644	27,968	407
1879.....	1,818	29	9,026	12,404	5,559	(1)

<sup>1</sup> Not reported.

The acreage of corn shows a steady increase since 1879. Oats, though showing an increase for the last decade, is relatively very small in acreage. While wheat decreased in acreage during the first decade, it has considerably increased since 1889, the greatest acreage being reported for 1899. Although barley shows a decrease for the first decade, marked increases are recorded for those succeeding.

The acreage of hay and forage has increased during each decade covered by the above table, the largest gain occurring between 1889 and 1899. In the 20 years since 1889 the acreage of potatoes has considerably more than doubled.

The following table shows for 1909 and 1899 the percentage which the farms reporting specified crops represented of all farms, the percentage of improved land devoted to these crops, and the percentage of increase or decrease in the acreage of each crop during the decade, together with the average yields and average values per acre for 1909:

CROP.	PER CENT OF FARMS REPORTING.		PER CENT OF IMPROVED LAND.		Per cent of increase in acres: 1899 to 1909 <sup>1</sup>	AVERAGE YIELD PER ACRE.	AVERAGE VALUE PER ACRE.
	1909	1899	1909	1899		1909	1909
	Corn.....	24.6	28.9	4.5	4.6	33.9	19.1 Bu.
Oats.....	3.4	2.6	1.7	0.8	267.5	32.3 Bu.	22.22
Wheat.....	15.3	22.7	5.7	9.6	-17.8	18.1 Bu.	20.48
Barley.....	10.7	9.5	9.4	6.4	102.2	30.7 Bu.	21.73
Hay and forage.....	40.5	45.4	29.3	36.4	10.6	2.53 Tons.	24.91
Alfalfa.....	23.6	32.4	18.9	24.6	5.6	2.94 Tons.	28.69
Potatoes.....	6.9	4.8	0.3	0.2	83.9	84.4 Bu.	85.66

<sup>1</sup> A minus sign (-) denotes decrease.

Out of every 100 farms, 41 report hay and forage; 25, corn; 24, alfalfa; 11, barley; 7, potatoes; and 3, oats. The proportions for oats, barley, and potatoes are higher than in 1899, while those for corn, alfalfa, and hay and forage are smaller.

The six crops shown in the above table cover about 50 per cent of the improved land of Arizona. All hay

and forage, as also alfalfa, show marked decreases in the proportion of improved land occupied. Of the other crops, oats, barley, and potatoes show increases, while corn and wheat show decreases. The increase in the acreages of the cereals for the last 10 years is 21,311, or 39.5 per cent; that in the acreage of hay and forage, 9,816, or 10.6 per cent.

The average value per acre of all cereals combined is \$20.87, oats and barley exceeding this average, corn and wheat falling below it. The average value per acre of hay and forage is greater by \$4.04 than that of the combined cereals, and about three-tenths as great as that of potatoes.

In the acreage of corn a general increase is shown, Navajo County reporting the largest gain. Nearly one-half of the acreage of oats is reported for Apache County. For the remaining crops of any consequence, hay and forage, barley, wheat, and alfalfa seed, Maricopa County reports from 50 to 95 per cent of their total acreages. Hay and forage is grown generally throughout Arizona, but with the exception of Maricopa County increases in its acreage are confined entirely to Apache, Graham, Cochise, Navajo, and Santa Cruz Counties, all located in the eastern part.

Vegetables, flowers and plants, and nursery products: 1909 and 1899.—The table which follows shows details with regard to vegetables (not including potatoes and sweet potatoes and yams, which appear elsewhere), and also with regard to flowers and plants and nursery products:

CROP.	FARMS REPORTING: 1909		ACRES.		VALUE OF PRODUCTS.	
	Num-ber.	Per cent of all farms.	1909	1899	1909	1899
Vegetables, other than potatoes and sweet potatoes and yams, total.....	12,404	26.1	4,302	2,192	\$379,293	\$136,508
Farms reporting a product of \$500 or over.....	149	1.6	1,570	.....	184,623	.....
All other farms.....	2,255	24.4	2,732	.....	194,670	.....
Flowers and plants, total.....	7	0.1	6	2	11,177	235
Farms reporting a product of \$250 or over.....	5	0.1	.....	.....	10,977	.....
All other farms.....	2	(2)	.....	.....	200	.....
Nursery products, total.....	11	0.1	18	14	4,535	2,914
Farms reporting a product of \$250 or over.....	3	(2)	.....	.....	3,552	.....
All other farms.....	8	0.1	.....	.....	983	.....

<sup>1</sup> Does not include 732 farms which reported that they had vegetable gardens, but gave no information as to their products.

<sup>2</sup> Less than one-tenth of 1 per cent.

In 1909 the total acreage of potatoes and other vegetables was 5,653 and their value \$505,988. Excluding (so far as reported separately<sup>1</sup>) potatoes and sweet potatoes and yams, the acreage of vegetables was 4,302 and their value \$379,000, both acreage and value being decidedly greater than in 1899. The table distinguishes between farms which make the

<sup>1</sup> It is probable that some of the potatoes and sweet potatoes and yams raised in farm gardens were not reported separately by farmers, but were included in their returns for vegetables.



raising of vegetables a business of some importance (having produced vegetables valued at \$500 or more in 1909) and other farms, on most of which vegetables are raised mainly for home consumption. There were in 1909 only 149 farms in the first class, representing more than one-third of the total acreage of vegetables and nearly one-half of the total value, the average acreage per farm for these farms being 10.5 and the average value of products per acre \$117.59.

The raising of flowers and plants and of nursery products is comparatively unimportant in Arizona.

**Small fruits: 1909 and 1899.**—The following table shows data with regard to small fruits on farms:

CROP.	Number of farms reporting: 1909	ACRES.		Quantity (quarts): 1909	Value: 1909
		1909	1899		
<b>Small fruits, total</b> .....		76	79	112,190	\$12,987
Strawberries.....	68	58	60	95,247	10,775
Blackberries and dewberries.....	40	16	9	13,808	1,761
Raspberries and loganberries.....	17	1	2	1,550	250
Currants.....	10	1	2	1,010	111
Gooseberries.....	4	( <sup>1</sup> )	2	575	90
Other berries.....			4		

<sup>1</sup> Reported in small fractions.

The total production of all small fruits in Arizona in 1909 was 112,000 quarts and in 1899, 129,000 quarts, and the value was \$12,987 in 1909 as compared with \$12,265 in 1899. The most important of the small fruits grown in 1909 were strawberries.

**Orchard fruits, grapes, nuts, and tropical fruits: 1909 and 1899.**—The following table presents data with regard to orchard fruits, grapes, nuts, and tropical fruits. The acreage devoted to these products was not ascertained. In comparing one year with the other the number of trees or vines of bearing age is on the whole a better index of the general changes or tendencies than the quantity of product, but the data for the censuses of 1910 and 1900 are not closely comparable, and the product is therefore compared, although variations may be due largely to temporarily favorable or unfavorable climatic conditions.

The total quantity of orchard fruits produced in 1909 was 154,000 bushels, valued at \$241,000. Apples contributed about one-half of this quantity, peaches and nectarines most of the remainder. The production of oranges in 1909 amounted to 32,247 boxes, valued at \$52,341; the production of grapes to 838,000 pounds, valued at \$25,371; and that of nuts to 35,834 pounds, valued at \$4,485.

The production of all orchard fruits together in 1909 was 35.8 per cent greater in quantity than in 1899, and that of oranges 190.1 per cent greater, while that of grapes declined. The value of orchard fruits increased from \$96,764 in 1899 to \$241,110 in 1909. It should be noted in this connection that the values for 1899 include the value of more advanced products derived from orchard fruits or grapes, such as cider, vinegar, dried fruits, and the like, and may therefore involve some duplication, while the values for 1909 relate only to the products in their original condition.

CROP.	TREES OR VINES OF BEARING AGE: 1910		TREES OR VINES OF BEARING AGE: 1910		PRODUCT.		
	Farms reporting.	Number.	Farms reporting.	Number.	1900		1899
					Quantity.	Value.	
<b>Orchard fruits, total</b> .....		152,340		116,988	153,885	\$241,110	113,306
Apples.....	822	62,027	965	53,884	72,814	109,395	13,471
Peaches and nectarines.....	1,268	51,415	1,030	32,562	50,102	80,325	38,062
Pears.....	745	16,851	824	12,852	13,289	21,331	13,197
Plums and prunes.....	717	12,196	624	7,898	8,420	16,261	3,133
Cherries.....	143	812	252	1,408	478	840	220
Apricots.....	565	6,665	529	6,992	6,849	10,053	40,578
Quinces.....	209	2,453	202	1,161	1,815	2,805	( <sup>2</sup> )
Mulberries.....	6	421	8	31	120	100	( <sup>3</sup> )
Unclassified.....							\$ 4,615
<b>Grapes</b> .....	508	131,570	592	84,510	\$87,842	25,371	\$1,697,200
<b>Nuts, total</b> .....		\$ 6,812		\$ 1,452	\$ 35,834	\$ 4,485	\$121,060
Almonds.....	155	6,639	90	845	33,759	4,193	116,510
Pecans.....	14	64	39	212	1,075	131	350
Unclassified.....							\$ 4,200
<b>Tropical fruits, total</b> .....		51,088		65,195		63,832	
Pomeloes (grapefruit).....	12	818	52	2,187	\$ 820	1,508	\$ 633
Dates.....	14	1,210	21	1,509	\$ 6,500	96	
Pomegranates.....	29	776	37	847	\$23,360	477	
Olives.....	57	9,353	73	1,773	\$264,895	3,073	\$ 13,150
Oranges.....	96	33,373	240	56,882	\$32,247	52,341	\$ 11,116
Figs.....	301	3,848	280	2,088	\$127,081	4,103	\$49,140
Lemons.....	26	1,652	73	309	\$ 1,010	2,034	\$ 203

<sup>1</sup> Bushels.

<sup>2</sup> Included with "unclassified."

<sup>3</sup> Consists of products not separately named by the enumerator, but grouped under the designation "all other."

<sup>4</sup> Pounds.

<sup>5</sup> Includes Persian or English walnuts, black walnuts, hickory nuts, chestnuts, filberts, and pistachio.

<sup>6</sup> Boxes.

The following table shows the quantities of the more advanced products manufactured by farmers from orchard fruits and grapes. Values were not called for on the schedule.

PRODUCT.	FARMS REPORTING: 1909		QUANTITY PRODUCED.		
	Number.	Percent of all farms.	Unit.	1909	1899
Cider.....	15	0.2	Gals....	2,771	945
Vinegar.....	39	0.4	Gals....	3,604	613
Wine and grape juice.....	5	0.1	Gals....	5,100	397
Dried fruits.....	31	0.3	Lbs....	7,932	135,270

**Forest products: 1909 and 1899.**—The census schedules for 1910 called for the "value of all firewood, fencing material, logs, railroad ties, telegraph and telephone poles, materials for barrels, bark, naval stores, or other forest products cut or produced in 1909, whether used on farm, sold, or on hand April 15, 1910;" and also, in a separate item, for the "amount received from sale of standing timber in 1909." There were 402 farms in Arizona (4.4 per cent of all farms in the state) which reported forest products in 1909, the total value of such products being \$45,312, as compared with \$48,877 in 1899, a decrease of 7.3 per cent. Of the value in 1909, \$31,301 was reported as that of products used or to be used on the farms themselves, \$10,971 as that of products sold or for sale, and \$3,040 as the amount received for standing timber.

It should be noted that forest products not produced on farms are not included in this report.

**Miscellaneous crops: 1909.**—Straw and cornstalks derived as by-products from the production of grain and corn have a considerable value for feed and other purposes. They are, however, mainly consumed on the farms producing them. The Census Bureau made no attempt to ascertain the total quantity or value of these products, but the schedules called for the quantity and value of those sold during the year 1909. The returns show that 11 farmers in Arizona sold, during 1909, 260 tons of straw, for which they received \$1,120.

**Sugar crops: 1909 and 1899.**—The table following shows data with regard to sugar beets and sorghum cane and also for sugar cane. The total value of sugar beets produced in 1909 was \$237,000, while in 1899 there was no production of sugar beets reported.

PRODUCT.	FARMS REPORTING.		Acres.	PRODUCT.		
	Number.	Percent of all farms.		Amount.	Unit.	Value.
Sugar beets, 1909 <sup>1</sup> .....	67	0.7	4,443	49,630	Tons...	\$236,907
Sorghum cane:						
Total, 1909 <sup>2</sup> .....	122	1.3	580	1,451	Tons.....	13,886
Cane grown.....	49	0.5		3,967	Gals.....	3,068
Sirup made.....						4,882
Total, 1899.....	52	0.9	133	953	Tons.....	182
Cane grown.....				41	Tons.....	4,700
Cane sold as such.....				9,031	Gals.....	719
Sirup made.....						710
Sugar cane:						
Total, 1909.....	8	0.1	16	55	Tons.....	710
Cane grown.....	8	0.1		1,040	Gals.....	\$1,348
Sirup made.....						
Total, 1899.....	7	0.1	50	240	Tons.....	620
Cane grown.....	5	0.1		100	Tons.....	228
Cane sold as such.....	2	(*)		438	Gals.....	
Sirup made.....						

<sup>1</sup> Includes beets used as root forage.      <sup>2</sup> Includes cane reserved for seed.  
<sup>3</sup> Includes cane used as coarse forage.      \* Less than one-tenth of 1 per cent.

**SELECTED FARM EXPENSES AND RECEIPTS.**

**Farm expenses: 1909 and 1899.**—The next table shows the number of farms reporting expenditures for labor, feed, and fertilizer at the census of 1910, as well as the sums expended in 1909 and 1899.

EXPENSE.	1909		Amount.	1899	INCREASE.		
	Farms reporting.				Amount.	Amount.	Per cent.
	Number.	Per cent of all farms.					
Labor.....	3,300	35.8	\$2,504,984	\$1,152,670	\$1,352,314	117.3	
Feed.....	2,714	29.4	541,371	( <sup>1</sup> )			
Fertilizer.....	33	0.4	0,080	2,921	3,159	108.1	

<sup>1</sup> Not reported at the census of 1900.

Over one-third of the farmers hire labor, the average amount expended by the farmers hiring being \$759. During the decade the total expenditure for labor increased \$1,352,000, or 117.3 per cent. Nearly one-fifth of the amount reported as expended for labor is in the form of rent and board. At prior censuses no tabulation was made of the number of farmers reporting expenditures for labor.

About three farmers out of every 10 report some expenditure for feed, but only 33 farmers report ex-

penditure for fertilizer. The total amount reported as paid for fertilizer has increased \$3,159, or 108.1 per cent, during the decade, the average per farm reporting being \$184.

**Receipts from sale of feedable crops: 1909.**—An effort was made at the census of 1910 to secure as complete a statement as possible of the sales as well as the production of the more important feedable crops (that is, crops ordinarily fed to live stock). The following table summarizes the data reported:

CROP.	FARMS REPORTING.		QUANTITY SOLD.		Amount received.
	Number.	Per cent of all farms.	Amount.	Unit.	
Total.....					\$1,445,838
Corn.....	503	5.5	77,089	Bu.....	68,818
Oats.....	177	1.9	97,310	Bu.....	66,995
Barley.....	642	7.0	586,863	Bu.....	430,346
Hay and coarse forage.....	918	9.9	84,728	Tons...	879,684

While the total amount expended by Arizona farmers for the purchase of feed in 1909 was \$541,000, the total receipts from the sale of feed by those reporting sales amounted to \$1,446,000.

**COUNTY TABLES.**

Tables 1 to 6, which follow, present by counties the more important agricultural data collected at the Thirteenth Census, 1910.

Table 1 shows the population, number of farms, land and farm area, value of farm property, and number and value of domestic animals and of poultry and bees, as of April 15, 1910. Comparative data for June 1, 1900, are given in italics for certain items.

Table 2 gives the number of farms, the farm acreage, and the value of farm property operated by owners, tenants, and managers, collected as of April 15, 1910. Statistics of farm mortgages are included in this table. (See explanation in text.) Comparative data for June 1, 1900, are given in italics for certain items.

Table 3 gives statistics pertaining to the products of

live stock on farms (dairy products, poultry and eggs, honey and wax, and wool and mohair); also the number and value of domestic animals sold or slaughtered on farms for the year 1909.

Table 4 shows the total value of farm crops and the principal classes thereof, together with the acreage (or trees of bearing age) and production of the principal crops for the crop year 1909.

Table 5 gives statistics relating to selected farm expenses for 1909 and also shows the receipts from the sale of feedable crops.

Table 6 shows the number and value of domestic animals in barns and inclosures not on farms, by classes, together with the number of dairy cows and mature horses and mules, on April 15, 1910.

TABLE 1.—FARMS AND FARM PROPERTY,

[Comparative data for June 1, 1900, in italics.]

	THE STATE.	Apache. <sup>1</sup>	Cochise.	Coconino. <sup>1</sup>	Gila. <sup>1</sup>	Graham. <sup>1</sup>	Maricopa. <sup>1</sup>
1 Population.....	204,354	9,196	34,591	8,130	16,348	23,999	34,483
2 <i>Population in 1900.....</i>	<i>182,931</i>	<i>8,297</i>	<i>31,251</i>	<i>5,514</i>	<i>4,973</i>	<i>14,162</i>	<i>20,457</i>
3 Number of all farms.....	9,227	803	1,042	656	515	889	2,229
4 <i>Number of all farms in 1900.....</i>	<i>6,809</i>	<i>280</i>	<i>252</i>	<i>280</i>	<i>237</i>	<i>509</i>	<i>1,089</i>
<b>Color and nativity of farmers:</b>							
5 Native white.....	5,218	264	942	137	199	778	1,540
6 Foreign-born white.....	806	30	92	24	22	107	271
7 Negro and other nonwhite.....	3,203	509	8	495	294	4	418
<b>Number of farms, classified by size:</b>							
8 Under 3 acres.....	1,595	184	16	538	191	76	17
9 3 to 9 acres.....	912	55	5	4	67	36	251
10 10 to 19 acres.....	839	10	9	5	78	69	316
11 20 to 49 acres.....	1,477	47	47	13	42	237	619
12 50 to 99 acres.....	820	39	36	14	35	176	321
13 100 to 174 acres.....	2,591	394	709	53	90	232	425
14 175 to 259 acres.....	263	27	20	2	5	38	92
15 260 to 499 acres.....	494	22	156	12	6	20	137
16 500 to 999 acres.....	164	19	28	3	1	5	38
17 1,000 acres and over.....	72	6	16	12	.....	.....	13
<b>LAND AND FARM AREA</b>							
18 Approximate land area..... acres.	72,838,400	7,282,560	3,948,800	11,072,320	2,097,120	4,165,120	5,690,240
19 Land in farms..... acres.	1,246,613	104,859	309,985	20,054	22,006	72,760	248,271
20 <i>Land in farms in 1900.....</i>	<i>1,935,337</i>	<i>30,332</i>	<i>62,992</i>	<i>143,937</i>	<i>50,015</i>	<i>172,570</i>	<i>170,716</i>
21 Improved land in farms..... acres.	350,173	17,954	34,787	5,971	6,660	33,715	172,592
22 <i>Improved land in farms in 1900.....</i>	<i>264,521</i>	<i>9,275</i>	<i>10,576</i>	<i>6,275</i>	<i>5,731</i>	<i>20,761</i>	<i>112,830</i>
23 Woodland in farms..... acres.	100,061	2,124	13,096	7,944	4,063	3,555	10,853
24 Other unimproved land in farms..... acres.	796,379	84,781	262,102	15,439	11,283	35,490	64,826
25 Per cent of land area in farms.....	1.7	1.4	7.8	0.2	0.7	1.7	4.4
26 Per cent of farm land improved.....	28.3	17.1	11.2	19.5	30.3	46.3	69.5
27 Average acres per farm.....	135.1	130.6	297.5	44.3	42.7	81.8	111.4
28 Average improved acres per farm.....	38.0	22.4	33.4	8.6	12.9	37.9	77.4
<b>VALUE OF FARM PROPERTY</b>							
29 All farm property..... dollars..	75,123,970	4,159,329	6,407,825	3,151,540	2,234,279	7,669,553	33,570,281
30 <i>All farm property in 1900.....</i>	<i>29,935,847</i>	<i>1,317,924</i>	<i>3,505,069</i>	<i>1,360,506</i>	<i>1,304,534</i>	<i>3,311,363</i>	<i>8,214,028</i>
31 Per cent increase, 1900-1910.....	160.5	215.6	82.3	131.6	71.3	131.6	312.5
32 Land..... dollars..	42,349,737	1,115,242	2,545,181	501,085	421,288	4,290,257	25,945,339
33 <i>Land in 1900.....</i>	<i>11,416,460</i>	<i>169,760</i>	<i>496,510</i>	<i>444,340</i>	<i>151,190</i>	<i>1,371,339</i>	<i>6,216,696</i>
34 Buildings..... dollars..	4,935,573	171,635	558,165	186,343	101,942	552,873	2,119,308
35 <i>Buildings in 1900.....</i>	<i>2,266,500</i>	<i>91,600</i>	<i>134,350</i>	<i>83,690</i>	<i>34,890</i>	<i>261,170</i>	<i>308,110</i>
36 Implements and machinery..... dollars..	1,787,790	50,407	207,345	30,870	36,885	210,804	708,820
37 <i>Implements, etc., in 1900.....</i>	<i>765,200</i>	<i>30,990</i>	<i>46,140</i>	<i>30,990</i>	<i>27,660</i>	<i>87,070</i>	<i>230,270</i>
38 Domestic animals, poultry, and bees..... dollars..	26,050,870	2,822,045	3,097,134	2,433,242	1,074,164	2,615,619	5,045,814
39 <i>Domestic animals, etc., in 1900.....</i>	<i>15,545,687</i>	<i>1,025,874</i>	<i>2,327,569</i>	<i>800,936</i>	<i>1,040,804</i>	<i>1,589,784</i>	<i>1,957,926</i>
<b>Per cent of value of all property in—</b>							
40 Land.....	56.4	26.8	39.7	15.9	18.9	55.9	78.6
41 Buildings.....	6.6	4.1	8.7	5.9	4.6	7.2	6.3
42 Implements and machinery.....	2.4	1.2	3.2	1.0	1.7	2.7	2.3
43 Domestic animals, poultry, and bees.....	34.7	67.8	48.3	77.2	74.9	34.1	14.9
<b>Average values:</b>							
44 All property per farm..... dollars..	8,142	5,180	6,150	4,804	4,338	8,627	15,199
45 Land and buildings per farm..... dollars..	5,125	1,603	2,978	1,043	1,016	5,448	12,591
46 Land per acre..... dollars..	33.97	10.64	8.21	17.25	19.14	58.96	104.50
47 <i>Land per acre in 1900.....</i>	<i>5.90</i>	<i>5.60</i>	<i>7.88</i>	<i>3.09</i>	<i>6.04</i>	<i>7.95</i>	<i>30.56</i>
<b>DOMESTIC ANIMALS (farms and ranges)</b>							
48 Farms reporting domestic animals.....	8,790	773	947	646	493	867	2,073
49 Value of domestic animals..... dollars..	24,376,530	2,819,551	3,070,934	2,407,912	1,670,102	2,587,892	3,553,980
<b>Cattle:</b>							
50 Total number.....	824,929	46,426	152,169	43,984	92,369	99,997	75,912
51 Dairy cows.....	28,862	1,654	2,506	331	624	2,247	12,660
52 Other cows.....	384,091	21,413	78,769	11,985	50,572	58,204	19,764
53 Yearling heifers.....	93,113	5,653	15,689	3,039	11,291	13,004	8,421
54 Calves.....	57,887	2,322	5,619	602	8,552	6,836	9,759
55 Yearling steers and bulls.....	36,554	4,847	17,332	2,891	11,014	12,664	6,542
56 Other steers and bulls.....	91,575	3,158	18,424	7,579	9,555	7,042	12,922
57 Value..... dollars..	14,624,708	904,909	2,570,991	760,989	1,418,111	1,798,249	1,910,350
<b>Horses:</b>							
58 Total number.....	99,578	14,990	8,752	4,926	8,858	8,295	14,646
59 Mature horses.....	74,788	7,841	7,442	3,046	7,209	6,904	12,142
60 Yearling colts.....	11,276	1,777	988	235	980	974	1,475
61 Spring colts.....	5,775	1,013	302	31	370	417	1,029
62 Value..... dollars..	4,209,726	399,738	364,340	184,187	212,638	588,407	1,239,377
<b>Mules:</b>							
63 Total number.....	3,963	269	480	62	131	193	1,339
64 Mature mules.....	3,507	243	423	53	125	180	1,209
65 Yearling colts.....	338	13	35	4	6	13	113
66 Spring colts.....	118	13	22	5	2	7	17
67 Value..... dollars..	399,449	13,765	44,097	4,615	8,850	18,540	213,566
<b>Asses and burros:</b>							
68 Number.....	7,104	1,546	574	458	1,146	313	181
69 Value..... dollars..	73,092	14,070	4,723	4,680	6,780	5,204	7,460
<b>Swine:</b>							
70 Total number.....	17,208	235	1,645	255	1,121	2,462	6,226
71 Mature hogs.....	10,422	204	1,099	210	734	1,269	3,526
72 Spring pigs.....	6,786	31	546	45	387	1,193	2,700
73 Value..... dollars..	113,714	1,974	11,067	2,509	6,638	14,144	42,508
<b>Sheep:</b>							
74 Total number.....	1,226,733	415,994	4,826	351,528	2,415	.....	27,424
75 Rams, ewes, and wethers.....	916,600	334,723	4,826	236,594	2,408	.....	21,555
76 Spring lambs.....	310,133	81,271	.....	114,934	7	.....	5,869
77 Value..... dollars..	4,400,514	1,345,457	23,107	1,450,936	9,632	.....	121,238
<b>Goats:</b>							
78 Number.....	246,617	74,989	18,274	.....	3,083	57,415	963
79 Value..... dollars..	555,327	139,638	52,609	.....	7,553	163,348	2,481
<b>POULTRY AND BEES</b>							
80 Number of poultry of all kinds.....	268,762	5,134	32,842	1,298	6,189	27,471	127,847
81 Value..... dollars..	1,545,906	2,319	23,458	1,160	3,822	17,031	1,439,584
82 Number of colonies of bees.....	23,770	34	749	41	84	3,059	15,488
83 Value..... dollars..	104,374	175	2,742	170	240	10,696	72,250

<sup>1</sup> Agricultural data for Indians on reservations in 1900 shown separately in last column of table.  
<sup>2</sup> Population of San Carlos Indian Reservation not located by counties.

STATISTICS OF AGRICULTURE.

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BY COUNTIES: APRIL 15, 1910.

[Comparative data for June 1, 1900, in italics.]

	Mohave. <sup>1</sup>	Navajo. <sup>1</sup>	Pima. <sup>1</sup>	Pinal. <sup>1</sup>	Santa Cruz.	Yavapai.	Yuma. <sup>1</sup>	Indian res- ervations.
1 Population.....	3,773	11,471	22,818	9,045	6,706	15,996	7,733	
2 <i>Population in 1900.....</i>	<i>3,480</i>	<i>8,829</i>	<i>14,089</i>	<i>7,779</i>	<i>4,545</i>	<i>13,799</i>	<i>4,145</i>	<i>23,065</i>
3 Number of all farms.....	111	977	405	614	176	522	288	
4 <i>Number of all farms in 1900.....</i>	<i>99</i>	<i>193</i>	<i>253</i>	<i>237</i>	<i>113</i>	<i>422</i>	<i>153</i>	<i>1,768</i>
5 Color and nativity of farmers:								
6 Native white.....	58	278	108	133	135	454	197	
7 Foreign-born white.....	15	16	74	18	38	63	36	
8 Negro and other nonwhite.....	43	683	233	463	3	5	55	
9 Number of farms, classified by size:								
10 Under 3 acres.....	71	284	85	15	14	95	9	
11 3 to 9 acres.....	4	253	28	128	3	21	54	
12 10 to 19 acres.....	4	122	36	161	3	18	13	
13 20 to 49 acres.....	11	104	61	178	11	54	53	
14 50 to 99 acres.....		34	24	26	16	69	30	
15 100 to 174 acres.....	18	121	142	75	95	158	79	
16 175 to 259 acres.....		14	6	9	7	26	17	
17 260 to 499 acres.....	3	20	13	20	16	48	21	
18 500 to 999 acres.....		16	5	7	4	24	5	
19 1,000 acres and over.....		9	5	5	4	9	2	
<b>LAND AND FARM AREA</b>								
20 Approximate land area..... acres..	8,569,600	6,592,000	6,083,200	3,443,200	786,500	5,216,000	6,301,680	
21 Land in farms..... acres..	4,090	105,589	71,937	43,199	51,874	150,434	32,555	
22 <i>Land in farms in 1900.....</i>	<i>5,851</i>	<i>1,017,065</i>	<i>71,172</i>	<i>45,767</i>	<i>60,289</i>	<i>67,744</i>	<i>25,704</i>	<i>43,173</i>
23 Improved land in farms..... acres..	1,027	11,176	10,504	18,789	6,070	18,097	13,131	
24 <i>Improved land in farms in 1900.....</i>	<i>1,943</i>	<i>4,621</i>	<i>3,399</i>	<i>15,777</i>	<i>4,431</i>	<i>14,022</i>	<i>6,844</i>	<i>28,651</i>
25 Woodland in farms..... acres..	63	14,718	16,028	3,337	6,997	7,687	9,596	
26 Other unimproved land in farms..... acres..	3,000	79,695	45,405	21,073	38,807	124,650	9,828	
27 Per cent of land area in farms.....	(3)	1.6	1.2	1.3	6.6	2.9	0.6	
28 Per cent of farm land improved.....	25.1	10.6	14.6	43.5	11.7	12.0	40.3	
29 Average acres per farm.....	36.8	108.1	177.6	70.4	294.7	283.2	113.0	
30 Average improved acres per farm.....	9.3	11.4	25.9	30.6	34.5	34.7	45.6	
<b>VALUE OF FARM PROPERTY</b>								
31 All farm property..... dollars..	400,050	3,073,033	2,540,396	2,306,782	1,098,297	4,627,368	2,916,231	
32 <i>All farm property in 1900.....</i>	<i>596,455</i>	<i>1,051,437</i>	<i>2,260,423</i>	<i>1,296,009</i>	<i>1,247,468</i>	<i>2,231,091</i>	<i>1,202,042</i>	<i>1,870,609</i>
33 Per cent increase, 1900-1910.....	22.9	192.3	12.4	78.0	36.1	107.4	583.0	
34 Land..... dollars..	82,550	687,076	1,202,451	1,180,758	665,868	1,358,257	2,367,785	
35 <i>Land in 1900.....</i>	<i>106,080</i>	<i>607,700</i>	<i>533,770</i>	<i>423,280</i>	<i>593,690</i>	<i>611,540</i>	<i>256,600</i>	<i>553,405</i>
36 Buildings..... dollars..	25,615	198,090	277,800	172,810	116,802	313,450	140,140	
37 <i>Buildings in 1900.....</i>	<i>35,980</i>	<i>71,100</i>	<i>158,100</i>	<i>143,080</i>	<i>70,080</i>	<i>242,900</i>	<i>36,340</i>	<i>43,210</i>
38 Implements and machinery..... dollars..	12,210	50,821	96,131	88,232	55,769	161,275	78,241	
39 <i>Implements, etc., in 1900.....</i>	<i>15,770</i>	<i>20,800</i>	<i>40,160</i>	<i>45,080</i>	<i>21,670</i>	<i>69,080</i>	<i>25,950</i>	<i>63,630</i>
40 Domestic animals, poultry, and bees..... dollars..	339,681	2,155,866	904,014	858,982	859,898	2,854,380	330,056	
41 <i>Domestic animals, etc., in 1900.....</i>	<i>440,715</i>	<i>291,797</i>	<i>1,478,393</i>	<i>673,659</i>	<i>791,183</i>	<i>1,937,561</i>	<i>109,493</i>	<i>1,205,304</i>
42 Per cent of value of all property in—								
43 Land.....	17.9	21.7	47.3	51.4	39.2	29.4	81.2	
44 Buildings.....	6.4	6.5	10.9	7.5	6.9	6.8	4.8	
45 Implements and machinery.....	2.7	1.7	3.8	3.8	3.3	2.2	2.7	
46 Domestic animals, poultry, and bees.....	73.8	70.2	37.9	37.2	50.6	61.7	11.3	
47 Average values:								
48 All property per farm..... dollars..	4,145	3,145	6,273	3,757	6,649	8,865	10,126	
49 Land and buildings per farm.....	974	887	3,655	2,214	4,447	3,202	8,708	
50 Land per acre..... dollars..	20.18	6.32	18.72	27.47	12.84	9.03	72.73	
51 <i>Land per acre in 1900.....</i>	<i>18.12</i>	<i>0.66</i>	<i>8.20</i>	<i>0.25</i>	<i>7.23</i>	<i>9.03</i>	<i>10.33</i>	<i>12.33</i>
<b>DOMESTIC ANIMALS (farms and ranges)</b>								
52 Farms reporting domestic animals.....	109	965	393	580	168	407	273	
53 Value of domestic animals..... dollars..	338,132	2,151,955	948,223	852,218	856,792	2,837,622	301,217	
54 Cattle:								
55 Total number.....	15,164	44,160	46,121	42,526	44,133	115,646	6,322	
56 Dairy cows.....	192	2,269	2,705	619	280	2,199	576	
57 Other cows.....	3,227	22,737	20,223	20,271	23,639	51,428	1,859	
58 Yearling heifers.....	1,019	5,534	5,249	5,117	5,600	12,488	1,009	
59 Calves.....	337	4,372	2,758	3,887	1,082	10,761	1,000	
60 Yearling steers and bulls.....	825	4,854	3,863	4,489	5,465	10,891	877	
61 Other steers and bulls.....	964	3,203	5,583	5,583	5,067	10,494	1,001	
62 Value..... dollars..	273,765	823,697	751,261	652,093	752,159	1,891,915	116,223	
63 Horses:								
64 Total number.....	1,338	14,293	6,760	5,834	2,442	6,698	1,746	
65 Mature horses.....	841	10,938	5,111	4,782	2,070	4,987	1,475	
66 Yearling colts.....	105	1,942	1,027	748	340	505	180	
67 Spring colts.....	37	1,343	622	304	32	184	91	
68 Value..... dollars..	51,266	335,639	166,334	143,453	90,612	239,949	146,786	
69 Mules:								
70 Total number.....	44	316	301	212	107	267	242	
71 Mature mules.....	30	293	252	168	93	241	197	
72 Yearling colts.....	14	5	38	39	12	28	32	
73 Spring colts.....		18	11	5	2	3	13	
74 Value..... dollars..	1,854	12,822	12,410	10,185	7,080	25,140	26,525	
75 Asses and burros:								
76 Number.....	25	1,764	160	141	60	683	53	
77 Value..... dollars..	895	11,783	1,527	1,207	1,194	12,624	945	
78 Swine:								
79 Total number.....	169	397	732	777	400	1,227	1,502	
80 Mature hogs.....	139	296	491	559	320	778	797	
81 Spring pigs.....	30	101	241	218	140	449	705	
82 Value..... dollars..	1,492	2,473	4,923	4,828	2,259	8,559	10,440	
83 Sheep:								
84 Total number.....	23	255,635	1,806	4,702	25	162,301	54	
85 Rams, ewes, and wethers.....	23	206,441	1,360	4,002	25	104,603	40	
86 Spring lambs.....		49,194	446	700		57,698	14	
87 Value..... dollars..	115	926,514	5,658	17,055	75	500,474	253	
88 Goats:								
89 Number.....	2,915	28,802	2,613	9,194	797	47,562	10	
90 Value..... dollars..	8,745	39,027	6,110	23,397	3,413	108,961	45	
<b>POULTRY AND BEES</b>								
91 Number of poultry of all kinds.....	1,407	5,285	18,163	8,241	4,268	18,436	12,181	
92 Value..... dollars..	992	2,956	15,691	3,534	2,807	12,118	20,494	
93 Number of colonies of bees.....	203	128	46	622	44	983	2,289	
94 Value..... dollars..	557	955	100	3,230	259	4,646	8,354	

<sup>1</sup> Less than one-tenth of 1 per cent.

<sup>2</sup> Decrease.

<sup>3</sup> Includes buffaloes, valued at \$24,000.

<sup>4</sup> Includes animals, age or sex not specified.

TABLE 2.—NUMBER, ACREAGE, AND VALUE OF FARMS CLASSIFIED BY TENURE; COLOR AND NATIVITY

[Comparative data for June 1, 1900, in Italics.]

	THE STATE.	Apache. <sup>1</sup>	Cochise.	Coconino. <sup>1</sup>	Gila. <sup>1</sup>	Graham. <sup>1</sup>	Maricopa. <sup>1</sup>	
<b>FARMS OPERATED BY OWNERS</b>								
1	Number of farms.....	8,203	772	980	636	484	744	1,772
2	Number of farms in 1900.....	<i>4,986</i>	<i>236</i>	<i>186</i>	<i>255</i>	<i>206</i>	<i>419</i>	<i>878</i>
3	Per cent of all farms.....	88.9	96.1	94.0	97.0	94.0	83.7	79.6
4	Per cent of all farms in 1900.....	<i>85.8</i>	<i>84.3</i>	<i>73.8</i>	<i>91.1</i>	<i>86.9</i>	<i>80.9</i>	<i>80.6</i>
5	Land in farms.....acres.....	874,914	99,778	206,429	19,964	19,579	63,815	105,397
6	Improved land in farms.....acres.....	254,439	16,327	26,201	4,325	5,259	27,963	108,089
7	Value of land and buildings.....dollars.....	33,196,611	1,230,825	1,704,494	430,028	437,620	4,117,775	18,132,125
<b>Degree of ownership:</b>								
8	Farms consisting of owned land only.....	7,759	718	960	626	474	678	1,604
9	Farms consisting of owned and hired land.....	444	54	20	10	10	66	168
<b>Color and nativity of owners:</b>								
10	Native white.....	4,410	238	887	120	183	601	1,162
11	Foreign-born white.....	644	26	87	21	19	82	206
12	Negro and other nonwhite.....	3,149	508	6	495	282	1	404
<b>FARMS OPERATED BY TENANTS</b>								
13	Number of farms.....	861	25	42	19	23	139	409
14	Number of farms in 1900.....	<i>489</i>	<i>28</i>	<i>28</i>	<i>7</i>	<i>6</i>	<i>70</i>	<i>153</i>
15	Per cent of all farms.....	9.3	3.1	4.0	2.9	4.5	15.6	18.3
16	Per cent of all farms in 1900.....	<i>8.4</i>	<i>10.0</i>	<i>9.1</i>	<i>2.5</i>	<i>2.5</i>	<i>18.8</i>	<i>14.0</i>
17	Land in farms.....acres.....	106,901	4,287	9,260	9,080	1,812	8,521	48,408
18	Improved land in farms.....acres.....	59,863	1,367	1,791	1,306	1,216	5,003	42,026
19	Value of land and buildings.....dollars.....	8,288,005	44,030	140,350	253,800	77,560	640,355	6,320,847
<b>Form of tenancy:</b>								
20	Share tenants.....	272	18	8	4	3	87	83
21	Share-cash tenants.....	18				1	3	14
22	Cash tenants.....	466	5	16	6	11	39	287
23	Tenure not specified.....	105	2	18	9	8	10	25
<b>Color and nativity of tenants:</b>								
24	Native white.....	683	22	38	16	11	111	338
25	Foreign-born white.....	135	3	2	3	3	25	67
26	Negro and other nonwhite.....	43		2		9	3	14
<b>FARMS OPERATED BY MANAGERS</b>								
27	Number of farms.....	163	6	20	1	8	6	48
28	Number of farms in 1900.....	<i>356</i>	<i>16</i>	<i>43</i>	<i>18</i>	<i>25</i>	<i>27</i>	<i>53</i>
29	Land in farms.....acres.....	264,798	794	94,296	60	615	924	34,496
30	Improved land in farms.....acres.....	35,871	260	6,795	40	185	749	22,478
31	Value of land and buildings.....dollars.....	5,800,094	12,022	1,258,502	3,000	8,050	85,000	3,611,075
<b>MORTGAGE DEBT REPORTS <sup>2</sup></b>								
<b>For all farms operated by owners:</b>								
32	Number free from mortgage debt.....	7,038	752	955	610	469	529	1,100
33	Number with mortgage debt.....	1,043	16	23	10	7	207	606
34	Number with no mortgage report.....	122	4	2	16	8	8	66
<b>For farms consisting of owned land only:</b>								
35	Number reporting debt and amount.....	813	6	18	7	6	176	476
36	Value of their land and buildings.....dollars.....	8,695,498	22,457	37,100	31,350	15,100	1,339,125	6,061,823
37	Amount of mortgage debt.....dollars.....	2,253,252	7,315	12,840	13,460	3,875	348,608	1,581,244
38	Per cent of value of land and buildings.....	25.9	32.6	34.6	42.9	25.7	26.0	26.3

<sup>1</sup> Agricultural data for Indians on reservations in 1900 shown separately in last column of table.

TABLE 3.—LIVE STOCK PRODUCTS, AND DOMESTIC ANIMALS

<b>LIVE STOCK PRODUCTS</b>									
<b>Dairy Products</b>									
1	Dairy cows on farms reporting dairy products.....	number.....	22,667	1,306	2,187	113	466	1,547	10,947
2	Dairy cows on farms reporting milk produced.....	number.....	17,668	1,240	1,548	112	404	1,424	9,030
3	Milk—Produced.....	gallons.....	6,881,608	143,778	345,769	16,520	177,685	538,875	4,586,902
4	Sold.....	gallons.....	3,347,723	5,313	207,817	471	133,425	180,474	2,357,753
5	Cream sold.....	gallons.....	37,744	5			733	6,859	22,004
6	Butter fat sold.....	pounds.....	665,850					39,267	626,583
7	Butter—Produced.....	pounds.....	325,980	18,763	29,203	2,169	7,153	43,698	110,340
8	Sold.....	pounds.....	120,951	3,602	9,562	230	385	8,552	37,249
9	Cheese—Produced.....	pounds.....	60,890	4,984	1,550	100	60	560	32,700
10	Sold.....	pounds.....	50,181	660	850			460	32,180
11	Value of dairy products, excluding home use of milk and cream.....dollars.....		909,411	7,650	79,183	795	53,602	86,289	475,314
12	Receipts from sale of dairy products.....dollars.....		842,210	2,823	70,975	238	51,254	74,406	453,070
<b>Poultry Products</b>									
13	Poultry—Raised.....	number.....	288,771	4,126	35,636	1,789	8,375	34,794	133,166
14	Sold.....	number.....	134,098	467	16,972	409	3,456	17,043	66,978
15	Eggs—Produced.....	dozens.....	1,811,134	20,202	127,061	3,528	19,427	120,359	738,738
16	Sold.....	dozens.....	820,377	3,714	73,381	791	10,372	57,942	521,952
17	Value of poultry and eggs produced.....dollars.....		565,094	6,588	73,845	2,561	12,624	54,490	286,857
18	Receipts from sale of poultry and eggs.....dollars.....		335,765	1,035	40,967	633	6,683	26,323	193,891
<b>Honey and Wax</b>									
19	Honey produced.....	pounds.....	1,025,282	740	18,065	1,725	80	105,528	684,500
20	Wax produced.....	pounds.....	15,612	45	300	60	6	1,253	9,312
21	Value of honey and wax produced.....dollars.....		57,203	94	2,175	185	17	6,742	35,537
<b>Wool, Mohair, and Goat Hair</b>									
22	Wool, fleeces shorn.....	number.....	713,905	222,323	4,700				16,776
23	Mohair and goat hair, fleeces shorn.....	number.....	103,228	550	9,293		3,000	49,719	500
24	Value of wool and mohair produced.....dollars.....		827,838	152,789	12,996	276,625	1,640	29,253	24,702
<b>DOMESTIC ANIMALS SOLD OR SLAUGHTERED</b>									
25	Calves—Sold or slaughtered.....	number.....	8,669	337	2,249	93	215	538	2,927
26	Other cattle—Sold or slaughtered.....	number.....	157,625	5,620	30,718	6,714	10,044	20,985	26,371
27	Horses, mules, and asses and burros—Sold.....	number.....	4,642	320	385	220	197	349	873
28	Swine—Sold or slaughtered.....	number.....	13,079	267	874	71	543	2,037	7,339
29	Sheep and goats—Sold or slaughtered.....	number.....	238,020	77,032	3,903	38,621	2,198	4,894	23,803
30	Receipts from sale of animals.....dollars.....		4,531,545	358,904	668,452	319,207	163,969	365,265	1,280,907
31	Value of animals slaughtered.....dollars.....		315,652	27,689	31,308	25,407	37,609	26,319	17,928

STATISTICS OF AGRICULTURE.

OF FARMERS; AND MORTGAGE DEBT, BY COUNTIES: APRIL 15, 1910.

[Comparative data for June 1, 1900, in italics.]

	Mohave. <sup>1</sup>	Navajo. <sup>1</sup>	Pima. <sup>1</sup>	Pinal. <sup>1</sup>	Santa Cruz.	Yavapai.	Yuma. <sup>1</sup>	Indian res- ervations.
<b>FARMS OPERATED BY OWNERS</b>								
1	Number of farms	108	943	351	582	140	425	200
2	Number of farms in 1900	<i>91</i>	<i>111</i>	<i>154</i>	<i>175</i>	<i>92</i>	<i>345</i>	<i>110</i>
3	Per cent of all farms	97.3	96.5	86.7	95.8	79.5	81.4	90.3
4	Per cent of all farms in 1900	<i>91.9</i>	<i>80.4</i>	<i>53.2</i>	<i>73.8</i>	<i>81.4</i>	<i>81.8</i>	<i>82.7</i>
5	Land in farms	3,900	94,254	39,846	35,081	23,825	72,733	30,813
6	Improved land in farms	927	9,984	7,954	16,485	5,176	13,796	11,953
7	Value of land and buildings	95,165	704,018	1,069,706	1,148,618	610,255	1,235,077	2,220,305
<b>Degree of ownership:</b>								
8	Farms consisting of owned land only	108	904	341	584	126	396	240
9	Farms consisting of owned and hired land		39	10	4	14	29	20
<b>Color and nativity of owners:</b>								
10	Native white	50	247	85	110	121	373	173
11	Foreign-born white	15	14	57	16	19	49	33
12	Negro and other nonwhite	43	682	209	462		3	54
<b>FARMS OPERATED BY TENANTS</b>								
13	Number of farms	1	31	31	18	31	69	23
14	Number of farms in 1900	<i>1</i>	<i>24</i>	<i>73</i>	<i>50</i>	<i>10</i>	<i>35</i>	<i>17</i>
15	Per cent of all farms	0.9	3.2	7.7	2.9	17.6	13.2	8.0
16	Per cent of all farms in 1900	<i>1.0</i>	<i>17.4</i>	<i>29.0</i>	<i>12.7</i>	<i>8.8</i>	<i>8.3</i>	<i>12.8</i>
17	Land in farms	160	9,115	2,439	2,623	2,581	7,153	1,482
18	Improved land in farms	80	1,102	798	1,336	724	2,072	1,043
19	Value of land and buildings	4,000	76,848	150,040	54,450	70,615	211,410	243,700
<b>Form of tenancy:</b>								
20	Share tenants		12	2	6	14	30	5
21	Share-cash tenants							
22	Cash tenants		10	21	5	17	36	13
23	Tenure not specified	1	9	8	7		3	5
<b>Color and nativity of tenants:</b>								
24	Native white	1	29	13	17	10	58	19
25	Foreign-born white		2	10		18	9	3
26	Negro and other nonwhite			8	1	3	2	1
<b>FARMS OPERATED BY MANAGERS</b>								
27	Number of farms	2	3	23	8	5	28	5
28	Number of farms in 1900	<i>7</i>	<i>3</i>	<i>45</i>	<i>32</i>	<i>11</i>	<i>42</i>	<i>6</i>
29	Land in farms	30	2,220	29,652	5,495	26,498	70,518	290
30	Improved land in farms	20	90	1,752	968	170	2,229	135
31	Value of land and buildings	9,000	25,600	260,505	150,500	101,800	225,220	43,920
<b>MORTGAGE DEBT REPORTS <sup>2</sup></b>								
<b>For all farms operated by owners:</b>								
32	Number free from mortgage debt	107	919	323	573	135	363	203
33	Number with mortgage debt	1	20	20	13	2	60	57
34	Number with no mortgage report		4	8	2		2	
<b>For farms consisting of owned land only:</b>								
35	Number reporting debt and amount	1	11	12	12	3	40	46
36	Value of their land and buildings	5,000	48,838	228,850	107,850	7,300	255,000	595,700
37	Amount of mortgage debt	1,000	10,360	60,200	27,370	2,200	82,430	95,950
38	Per cent of value of land and buildings	20.0	22.2	28.9	25.4	30.1	32.3	16.1

<sup>2</sup> No mortgage reports were secured for farms operated by tenants and managers. (See explanation in text.)

SOLD OR SLAUGHTERED ON FARMS, BY COUNTIES: 1909.

<b>LIVE STOCK PRODUCTS</b>								
<b>Dairy Products</b>								
1	Dairy cows on farms reporting dairy products	188	2,039	1,144	273	165	1,625	467
2	Dairy cows on farms reporting milk produced	183	951	610	271	141	1,247	447
3	Milk—Produced	73,672	181,355	229,700	87,927	17,270	302,125	180,040
4	Sold	39,095	38,000	186,050	40,690	4,735	101,245	105,655
5	Cream sold	5,523		1,400			1,095	125
6	Butter fat sold							
7	Butter—Produced	1,215	24,823	3,995	2,373	2,950	58,165	21,128
8	Sold	40	5,775	2,600	300	50	38,982	13,624
9	Cheese—Produced		1,610	8,055	8,685	1,650	75	661
10	Sold		510	5,335	8,240	1,650	50	246
11	Value of dairy products, excluding home use of milk and cream	11,647	22,848	71,289	10,546	3,245	55,337	31,666
12	Receipts from sale of dairy products	11,298	17,011	70,252	9,804	2,162	49,421	20,436
<b>Poultry Products</b>								
13	Poultry—Raised	1,603	4,580	6,703	14,205	3,307	26,981	13,506
14	Sold	374	1,868	2,226	5,044	870	11,305	6,186
15	Eggs—Produced	2,595	24,901	35,102	34,182	23,218	107,397	54,274
16	Sold	210	8,021	24,879	16,454	9,312	55,826	37,523
17	Value of poultry and eggs produced	1,929	9,299	17,894	15,306	10,658	49,471	23,026
18	Receipts from sale of poultry and eggs	385	3,596	11,210	6,048	4,061	25,152	14,897
<b>Honey and Wax</b>								
19	Honey produced	6,265	4,550	600	14,988	1,000	31,651	155,610
20	Wax produced	220	40		26	25	915	2,810
21	Value of honey and wax produced	680	409	55	858	125	2,487	7,779
<b>Wool, Mohair, and Goat Hair</b>								
22	Wool, fleeces shorn		184,669	420	5,000		77,519	
23	Mohair and goat hair, fleeces shorn	1,815	2,140	650	4,723	416	30,020	
24	Value of wool and mohair produced	1,058	203,933	800	8,437	500	114,895	
<b>DOMESTIC ANIMALS SOLD OR SLAUGHTERED</b>								
25	Cattle—Sold or slaughtered	8	137	301	79	64	1,609	112
26	Other cattle—Sold or slaughtered	3,193	7,059	3,620	6,585	9,732	21,870	5,114
27	Horses, mules, and asses and burros—Sold	55	291	119	107	44	445	1,232
28	Swine—Sold or slaughtered	50	263	193	166	47	941	458
29	Sheep and goats—Sold or slaughtered	100	72,492	1,375	1,225	20	12,357	
30	Receipts from sale of animals	50,305	394,783	72,432	105,072	161,804	447,620	202,825
31	Value of animals slaughtered	5,200	32,722	14,114	43,833	14,434	34,126	4,863



TABLE 4.—VALUE OF ALL CROPS AND PRINCIPAL CLASSES THEREOF.

		THE STATE.	Apache.	Cochise.	Coconino.	Gila.	Graham.	Maricopa.	
<b>VALUE OF ALL CROPS</b>									
1	Total	dollars	5,496,872	152,696	261,559	87,659	122,796	940,819	2,545,534
2	Cereals	dollars	1,570,853	74,307	20,478	3,293	31,575	279,537	786,968
3	Other grains and seeds	dollars	204,046	1,203	9,477	10	1,895	3,872	148,114
4	Hay and forage	dollars	2,533,228	5,022	152,137	52,034	34,924	553,818	1,120,677
5	Vegetables	dollars	535,988	13,367	57,717	26,677	40,937	54,206	108,067
6	Fruits and nuts	dollars	347,585	10,614	17,120	4,785	11,330	43,876	111,248
7	All other crops	dollars	315,172	1,183	4,950	260	2,135	6,260	263,845
<b>SELECTED CROPS (acres and quantity)</b>									
8	<b>Cereals:</b>								
9	Total	acres	75,269	4,503	960	247	1,772	11,023	34,886
10	Corn	bushels	1,878,960	84,285	19,111	3,328	27,408	340,248	973,072
11		acres	15,605	808	633	89	1,041	2,567	905
12	Oats	bushels	298,664	9,278	12,281	784	19,280	65,267	17,151
13		acres	5,867	2,862	7	75		41	1,927
14	Wheat	bushels	189,312	61,655	120	2,125		1,290	93,533
15		acres	20,028	503	138	75	78	2,825	10,637
16	Barley	bushels	362,875	7,477	3,130	200	852	67,026	204,969
17		acres	32,897	330	102		637	5,562	21,109
18	Kafir corn and milo maize	bushels	1,008,442	5,874	2,295		0,972	205,910	650,298
19		acres	801		80	4	4	28	266
20	<b>Other grains:</b>								
21	Dry edible beans	bushels	2,301	30	411		70	94	90
22		acres	18,457	356	2,858	2	682	1,436	305
23	<b>Hay and forage:</b>								
24	Total	acres	102,490	2,797	10,319	2,570	1,151	11,982	51,796
25	All tame or cultivated grasses	tons	289,750	3,982	11,815	2,900	1,940	58,377	135,359
26		acres	68,672	1,231	1,855	1,092	219	11,655	44,080
27	Timothy alone	tons	198,111	2,214	3,672	1,418	443	55,860	108,030
28		acres	120						
29	Timothy and clover mixed	tons	182	94					
30		acres	143					100	12
31	Clover alone	tons	289					180	72
32		acres	119					15	
33	Alfalfa	tons	119					10	
34		acres	66,102	1,120	1,710	312	142	11,998	43,896
35	Millet or Hungarian grass	tons	194,534	2,043	3,465	471	355	55,453	107,043
36		acres	443		125	60	1	7	60
37	Other tame or cultivated grasses	tons	791		183	70	2	10	97
38		acres	1,745	57	17	720	76	135	112
39	Wild, salt, or prairies grasses	tons	2,196	77	16	877	86	207	218
40		acres	9,514	1,052	5,985	20	11	65	327
41	Grains cut green	tons	8,168	882	4,101	18	1	72	477
42		acres	10,068	413	334	1,468	688	303	5,380
43	Coarse forage	tons	29,712	450	492	1,404	955	409	9,507
44		acres	3,980	101	2,143		133	47	741
45		tons	7,702	436	3,525		361	84	1,385
46	<b>Special crops:</b>								
47	Potatoes	acres	1,151	54	46	331	115	78	182
48		bushels	97,141	4,999	3,108	34,741	12,591	7,374	5,581
49	Sweet potatoes and yams	acres	200				12	54	70
50		bushels	21,206		898		1,485	7,559	6,800
51	All other vegetables	acres	4,302	92	646	20	158	376	1,147
52	Sugar beets	acres	4,443						4,430
53		tons	49,630		1				49,558
54	<b>FRUITS AND NUTS</b>								
55	<b>Orchard fruits:</b>								
56	Total	trees	152,340	7,199	10,607	2,796	4,906	30,856	34,187
57		bushels	183,885	5,477	6,531	3,056	6,541	24,488	19,243
58	Apples	trees	62,027	2,557	4,307	1,201	2,248	17,919	1,068
59		bushels	72,814	4,065	2,942	1,942	3,347	12,732	1,533
60	Peaches and nectarines	trees	51,415	3,735	4,245	965	1,734	6,055	12,020
61		bushels	50,102	779	2,533	751	2,430	6,542	4,343
62	Pears	trees	16,351	372	421	283	251	2,602	9,012
63		bushels	13,280	449	322	187	271	2,696	5,474
64	Plums and prunes	trees	12,196	344	1,181	243	263	3,069	3,901
65		bushels	8,420	136	354	116	329	1,864	2,317
66	Cherries	trees	812	41	90	38	68	61	251
67		bushels	476	34	18	13	21	20	252
68	Apricots	trees	6,665	149	288	58	341	537	3,810
69		bushels	6,849	13	310	35	132	429	4,622
70	Quinces	trees	2,453	1	67	8	1	123	1,406
71		bushels	1,815	1	52	12	2	85	802
72	Grapes	vines	131,579	57	5,275	399	181	10,727	72,320
73		pounds	837,842	300	12,862	4,025	1,500	95,870	502,181
74	<b>Tropical fruits:</b>								
75	Total	trees	51,036		81		37	405	47,302
76	Figs	trees	3,848		76		37	190	2,628
77		pounds	127,081		785		10,655	3,236	96,540
78	Oranges	trees	33,373		1			31,000	
79		boxes	32,247					32,242	
80	Lemons	trees	1,652		4			1,610	
81		boxes	1,010					1,008	
82	Olives	trees	9,353					15	0,273
83		pounds	264,895					300	264,146
84	<b>Small fruits:</b>								
85	Total	acres	76		4	2	1	3	41
86	Strawberries	quarts	112,190	120	8,314	2,201	320	4,427	68,723
87		acres	58		2			3	35
88		quarts	95,247		6,669	2,055	120	3,705	62,044
89	<b>Nuts:</b>								
90	Total	trees	6,812		89	37	46	833	5,588
91		pounds	35,834		90	200	350	1,496	31,940
92	Almonds	trees	6,639		61	35	3	813	5,582
93		pounds	33,759		40	200		1,261	31,940

TABLE 5.—SELECTED FARM EXPENSES

1	Labor	Farms reporting	3,300	97	366	49	97	493	1,137
2		Cash expended	2,061,462	99,032	258,243	22,210	61,684	204,271	878,888
3		Rent and board furnished	443,522	25,547	30,843	4,565	27,174	46,299	154,890
4	Fertilizer	Farms reporting	33	1	6				14
5		Amount expended	6,080	500	435			136	4,409
6	Feed	Farms reporting	2,714	92	645	41	90	243	922
7		Amount expended	541,371	16,246	125,540	8,115	49,283	42,158	167,327
8	Receipts from sale of feedable crops	dollars	1,445,838	33,764	27,615	11,680	14,193	336,499	783,187



STATISTICS OF AGRICULTURE.

AND ACREAGE AND PRODUCTION OF PRINCIPAL CROPS, BY COUNTIES: 1909.

		Mohave.	Navajo.	Pima.	Pinal.	Santa Cruz.	Yavapai.	Yuma.	Indian res- ervations.
<b>VALUE OF ALL CROPS</b>									
1	Total.....	dollars.. 24,554	176,956	200,170	223,029	109,900	431,563	219,637	
2	Cereals.....	dollars.. 3,204	75,914	31,001	103,562	20,427	79,397	61,140	
3	Other grains and seeds.....	dollars.. 251	2,076	8,786	2,724	10,475	3,318	11,765	
4	Hay and forage.....	dollars.. 11,040	56,187	112,569	75,627	56,628	151,281	117,954	
5	Vegetables.....	dollars.. 3,365	32,853	37,903	11,774	12,387	85,803	19,842	
6	Fruits and nuts.....	dollars.. 5,569	8,293	1,441	12,668	4,328	109,571	6,747	
7	All other crops.....	dollars.. 1,125	733	8,470	16,674	5,185	2,193	2,159	
<b>SELECTED CROPS (acres and quantity)</b>									
8	<b>Cereals:</b>								
9	Total.....	acres.. 133	4,432	1,289	8,744	1,121	3,080	3,079	
10	Corn.....	bushels.. 3,192	77,821	28,428	132,571	21,855	84,383	83,220	
11	Oats.....	acres.. 13	3,704	829	1,275	901	2,062	778	
12	Wheat.....	bushels.. 440	59,260	17,699	13,990	15,929	40,417	17,870	
13	Barley.....	acres.. 447	13,991	206	1,555	47	346	7	
14	Kafir corn and milo maize.....	bushels.. 87	4,762	5,198	2,458	1,137	13,860	280	
15	Other grains.....	acres.. 2,252	4,150	192	4,762	1,137	5,653	2,898	
16	Wheat.....	bushels.. 33	192	5,456	57,894	1,137	424	1,790	
17	Barley.....	bushels.. 500	143	17	2,552	4,495	15,245	53,034	
18	Kafir corn and milo maize.....	acres.. 2	224	75	58,220	8	7	385	
19	Other grains.....	bushels.. 1	84	730	240	364	67	100	
20	Dry edible beans.....	acres.. 20	851	3,757	1,697	4,660	1,126	707	
21	<b>Hay and forage:</b>								
22	Total.....	acres.. 328	2,142	3,806	4,232	2,989	5,281	3,107	
23	All tame or cultivated grasses.....	tons.. 819	4,511	8,235	6,699	3,983	11,250	11,680	
24	Timothy alone.....	acres.. 298	1,664	692	1,142	198	2,443	2,103	
25	Timothy and clover mixed.....	tons.. 718	3,979	2,462	2,029	466	6,823	9,997	
26	Clover alone.....	acres.. 35	37	31	1	1	31	51	
27	Alfalfa.....	acres.. 31	37	31	1	1	31	51	
28	Millet or Hungarian grass.....	acres.. 100	1,571	597	776	148	2,191	2,044	
29	Other tame or cultivated grasses.....	tons.. 100	3,868	2,285	1,569	409	6,488	9,869	
30	Wild, salt, or prairie grasses.....	acres.. 1	4	100	250	17	31	27	
31	Grains cut green.....	acres.. 2	23	45	278	38	224	20	
32	Coarse forage.....	tons.. 20	171	275	250	327	1,011	792	
33	Special crops:								
34	Potatoes.....	acres.. 20	179	387	240	398	1,393	1,121	
35	Sweet potatoes and yams.....	acres.. 7	168	2,829	2,721	2,364	1,905	1,121	
36	All other vegetables.....	acres.. 21	209	5,353	4,119	2,866	2,020	212	
37	Sugar beets.....	acres.. 3	139	10	119	110	222	762	
38	Sugar beets.....	tons.. 60	144	33	311	263	408	762	
39	<b>FRUITS AND NUTS</b>								
40	<b>Orchard fruits:</b>								
41	Total.....	acres.. 1,624	12,935	941	5,428	3,286	36,551	1,024	
42	Apples.....	bushels.. 2,139	3,312	400	5,885	2,088	73,294	1,621	
43	Peaches and nectarines.....	acres.. 673	3,964	53	1,920	2,215	22,940	62	
44	Pears.....	bushels.. 662	1,078	315	2,730	1,421	39,561	201	
45	Plums and prunes.....	acres.. 662	7,940	51	2,335	622	9,749	129	
46	Cherries.....	bushels.. 1,143	1,511	105	2,063	577	27,305	65	
47	Apricots.....	acres.. 69	228	175	105	58	1,133	523	
48	Quinces.....	bushels.. 129	39	93	12	91	2,594	848	
49	Grapes.....	acres.. 83	652	49	109	91	2,062	39	
50	Tropical fruits:								
51	Total.....	acres.. 75	69	3	75	16	3,034	32	
52	Figs.....	acres.. 24	47	3	3	3	151	3	
53	Oranges.....	acres.. 78	104	304	222	168	377	216	
54	Lemons.....	acres.. 90	15	171	101	43	453	474	
55	Olives.....	acres.. 31	15	171	616	74	132	2	
56	Small fruits:								
57	Total.....	acres.. 23	21	533	533	26	281	2	
58	Strawberries.....	acres.. 7,662	171	179	3,386	158	22,669	8,405	
59	Nuts:								
60	Total.....	pounds.. 32,800	550	1,000	8,500	650	94,384	83,220	
61	Almonds.....	acres.. 70	344	277	2	118	2,400	2,400	
62	Strawberries.....	acres.. 70	344	164	2	60	277	277	
63	Oranges.....	pounds.. 630	650	5,800	200	3,100	5,485	15,908	
64	Lemons.....	acres.. 1	1	1	1	1	1	1	
65	Olives.....	acres.. 35	35	35	35	35	35	35	
66	Small fruits:								
67	Total.....	acres.. 1	14	14	1	7	2	2	
68	Strawberries.....	acres.. 605	302	4,520	1,550	10,338	10,770	10,770	
69	Nuts:								
70	Total.....	acres.. 180	18	18	1,200	4,854	10,000	10,000	
71	Almonds.....	acres.. 15	40	18	60	82	44	44	
72	Almonds.....	pounds.. 40	100	100	1,100	418	100	100	
73	Almonds.....	acres.. 6	18	18	81	53	32	32	
74	Almonds.....	pounds.. 100	100	100	100	118	50	50	

AND RECEIPTS, BY COUNTIES: 1909.

1	Labor.....	Farms reporting.....	26	116	103	338	86	270	122
2	Cash expended.....	dollars.. 11,565	131,344	93,039	70,771	37,752	136,305	56,258	
3	Rent and board furnished.....	dollars.. 2,653	39,808	15,695	17,522	2,565	54,047	15,908	
4	Fertilizer.....	Farms reporting.....	1	3	3	1	3	2	
5	Amount expended.....	dollars.. 5	365	365	365	365	175	55	
6	Feed.....	Farms reporting.....	16	89	62	130	45	208	77
7	Amount expended.....	dollars.. 2,963	19,898	17,390	18,845	4,057	55,396	14,147	
8	Receipts from sale of feedable crops.....	dollars.. 2,500	16,027	31,015	64,990	21,654	73,883	28,831	

TABLE 6.—NUMBER AND VALUE OF DOMESTIC ANIMALS NOT ON FARMS, BY COUNTIES: APRIL 15, 1910.

		THE STATE.	Apache.	Cochise.	Coconino.	Gila.	Graham.	Maricopa.
1	Inclousures reporting domestic animals.....	5,153	109	729	106	556	735	1,154
2	Value of domestic animals.....dollars..	1,562,564	21,677	223,643	87,642	234,350	220,147	337,324
<b>Cattle:</b>								
3	Total number.....	8,529	122	1,259	91	2,369	1,258	746
4	Value.....dollars..	203,617	2,801	33,250	3,140	45,258	34,998	21,536
5	Number of dairy cows.....	2,150	57	408	90	200	365	268
<b>Horses:</b>								
6	Total number.....	15,031	251	1,771	517	3,421	1,667	2,897
7	Value.....dollars..	1,121,618	15,275	156,951	53,730	152,191	155,672	283,578
8	Number of mature horses.....	14,032	242	1,702	515	2,897	1,519	2,795
<b>Mules and asses and burros:</b>								
9	Total number.....	4,199	94	548	241	641	1,002	242
10	Value.....dollars..	190,246	1,320	26,141	30,165	19,489	21,397	30,413
11	Number of mature mules.....	1,285	18	164	169	202	115	171
<b>Swine:</b>								
12	Total number.....	1,304	15	268	59	173	230	19
13	Value.....dollars..	15,083	131	3,776	507	1,588	1,458	197
<b>Sheep and goats:</b>								
14	Total number.....	13,910	929	1,577	.....	6,191	3,494	532
15	Value.....dollars..	32,600	2,050	3,516	.....	16,324	6,622	1,550

		Mohave.	Navajo.	Pima.	Pinal.	Santa Cruz.	Yavapai.	Yuma.
1	Inclousures reporting domestic animals.....	90	113	714	80	91	453	223
2	Value of domestic animals.....dollars..	42,645	34,446	114,468	17,222	32,949	131,471	64,180
<b>Cattle:</b>								
3	Total number.....	53	417	292	281	585	647	418
4	Value.....dollars..	1,095	9,269	8,640	4,047	14,237	14,741	98746
5	Number of dairy cows.....	20	132	119	65	165	171	90
<b>Horses:</b>								
6	Total number.....	471	403	1,455	236	282	1,181	479
7	Value.....dollars..	30,125	23,683	97,272	12,006	15,390	90,145	35,600
8	Number of mature horses.....	450	375	1,418	229	278	1,155	457
<b>Mules and asses and burros:</b>								
9	Total number.....	122	29	317	62	143	504	254
10	Value.....dollars..	7,675	675	7,772	1,069	3,227	23,678	17,225
11	Number of mature mules.....	77	23	72	6	33	111	124
<b>Swine:</b>								
12	Total number.....	150	96	78	6	14	168	19
13	Value.....dollars..	3,750	817	697	100	95	1,013	354
<b>Sheep and goats:</b>								
14	Total number.....	.....	1	17	.....	.....	628	491
15	Value.....dollars..	.....	2	87	.....	.....	1,294	1,155

## CHAPTER 4.

# STATISTICS OF IRRIGATION FOR THE STATE AND ITS COUNTIES.

**Introduction.**—This chapter presents the larger part of the statistics of irrigation for Arizona obtained in connection with the Thirteenth Census. The statistics of the number of farms and acreage irrigated, cost of operation and maintenance, and irrigated crops are for the calendar year 1909; those of irrigation works, cost of enterprises, acreage enterprises were capable of irrigating in 1910, and acreage included in projects are of the date July 1, 1910.

These statistics have been collected under the law of February 25, 1910, which contained the following clause relating to irrigation:

Inquiries shall also be made as to the location and character of irrigation enterprises, quantity of land irrigated in the arid region of the United States and in each state and county in that section under state and Federal laws; the price at which these lands, including water rights, are obtainable; the character and value of crops produced on irrigated lands, the amount of water used per acre for said irrigation and whether it was obtainable from national, state, or private works; the location of the various projects and methods of construction, with facts as to their physical condition; the amount of capital invested in such irrigation works.

The information called for by this law which could be supplied by farm operators was obtained on supplemental schedules by the regular census enumerators as a part of the agricultural census. The remaining data, which were supplied by the owners or officials of irrigation enterprises, were obtained on special schedules by special agents. The data relating to number of farms irrigated and irrigated crops are taken from the supplemental schedules, while all data relating to acreage irrigated and to irrigation works and their construction and operation are taken from the special schedules.

In accordance with the law, the data collected have been classified primarily by the state and Federal laws by virtue of which the land was brought under irrigation. The results are presented in detail at the end of this chapter and summarized in text tables.

Such of the terms used as are not self-explanatory are defined below.

**Farms irrigated.**—The number of "farms irrigated" is the number of farms on which irrigation is practiced and is equivalent to the term "number of irrigators" used in previous census reports.

**Types of enterprise.**—The types of enterprise under which the lands irrigated in 1909 are classified are as follows:

*United States Reclamation Service enterprises*, which operate under

the Federal law of June 17, 1902, providing for the construction of irrigation works with the receipts from the sale of public lands.

*United States Indian Service enterprises*, which operate under various acts of Congress providing for the construction by that service of works for the irrigation of land in Indian reservations.

*Carey Act enterprises*, which operate under the Federal law of August 18, 1894, granting to each of the states in the arid region 1,000,000 acres of land on condition that the state provide for its irrigation, and under amendments to that law granting additional areas to Idaho and Wyoming.

*Irrigation districts*, which are public corporations that operate under state laws providing for their organization and management, and empowering them to issue bonds and levy and collect taxes with the object of obtaining funds for the purchase or construction, and for the operation and maintenance of irrigation works.

*Cooperative enterprises*, which are controlled by the water users under some organized form of cooperation. The most common form of organization is the stock company, the stock of which is owned by the water users.

*Commercial enterprises*, which supply water for compensation to parties who own no interest in the works. Persons obtaining water from such enterprises are usually required to pay for the right to receive water, and to pay, in addition, annual charges based in some instances on the acreage irrigated and in others on the quantity of water received.

*Individual and partnership enterprises*, which belong to individual farmers or to neighboring farmers, who control them without formal organization. It is not always possible to distinguish between partnership and cooperative enterprises, but as the difference is slight this is unimportant.

**Source of water supply.**—Of the terms used in the classification according to source of water supply, none requires explanation except "reservoirs." The only reservoirs which are treated as independent sources of supply are those filled by collecting storm water or from watercourses that are ordinarily dry. When reservoirs are filled from streams or wells, the primary source is considered the source of supply.

**Acre-foot.**—The "acre-foot," used to express the capacity of reservoirs, is the volume of water required to cover 1 acre to a depth of 1 foot, or 43,560 cubic feet.

**Cost.**—The cost of irrigation enterprises is that given by the owners. For the larger works the cost given is taken, in most cases, from the books of account and represents the actual cost. In the case of most of the private and partnership and many of the cooperative enterprises, however, the works were built by their owners without records of money or labor expended, and the cost given represents the owners' estimates. The cost reported for 1910 includes the cost of construction and of acquiring rights. The latter usually consists of filing fees only. In some instances it includes the purchase price of rights, but these cases are so rare that they are unimportant. The cost reported for 1899 is designated "cost of construction," but probably includes the cost of acquiring rights, as in 1910. The average cost per acre is based on the acreage enterprises were capable of irrigating in 1910 and the cost to July 1, 1910.



FARMS AND ACREAGE IRRIGATED.

Arizona is divided into two sections of widely different topographic and climatic characteristics. The northern and northeastern parts form a plateau, broken by mountains of high altitude, while the southern and southwestern parts consist of broad desert plains, broken by nearly parallel mountain ranges, and traversed by the Salt and Gila Rivers, which supply the greater part of the water used for irrigation in the state. In the western half of Arizona the annual precipitation ranges from 1 to 10 inches and in the eastern half from 10 to 25 inches. Irrigation is necessary to the growth of crops in the low valleys, but on the higher plains some crops are grown without it. The location of the irrigated lands of the state is indicated in a general way by the accompanying maps, which show the class in which each county falls with reference to the percentage which the irrigated land forms of the total land area and the percentage

which irrigated farms represent of all farms in the state.

The following table shows for the state as a whole the number of farms and the acreage irrigated in 1909 in comparison with the total number of farms, the total land area, the total land in farms, and the total acreage of improved land in farms in 1910, together with the areas not yet irrigated for which water has been or is being made available. Comparative statistics for the census of 1900 are included as far as possible. The figures in respect to number of farms and acreage irrigated in 1899 do not include the Indian reservations in Arizona, which were not covered by the irrigation report for that year, and therefore these figures are not strictly comparable with the figures for 1909. In computing the increases in these items, however, the totals for Indian Service irrigation in 1909 have, where possible, been eliminated from the figures for that year.

	CENSUS OF—		INCREASE. <sup>1</sup>	
	1910	1900	Amount.	Per cent.
Number of all farms.....	<sup>2</sup> 9, 227	<sup>3</sup> 5, 809	3, 418	58. 8
Approximate land area of the state..... acres..	72, 838, 400	72, 838, 400	.....	.....
Land in farms..... acres..	<sup>2</sup> 1, 246, 613	<sup>3</sup> 1, 935, 327	-688, 714	-35. 6
Improved land in farms..... acres..	<sup>2</sup> 350, 173	<sup>3</sup> 254, 521	95, 652	37. 6
Number of farms irrigated.....	<sup>4</sup> 4, 841	<sup>5</sup> 2, 981	<sup>6</sup> 1, 185	<sup>6</sup> 39. 8
Acreage irrigated.....	<sup>4</sup> 320, 051	<sup>5</sup> 185, 396	<sup>6</sup> 115, 269	<sup>6</sup> 62. 2
Acreage enterprises were capable of irrigating.....	<sup>7</sup> 387, 655	( <sup>8</sup> )	.....	.....
Acreage included in projects.....	<sup>7</sup> 944, 090	( <sup>8</sup> )	.....	.....
Percentage irrigated of—				
Number of all farms.....	52. 5	<sup>6</sup> 73. 8	.....	.....
Approximate land area of the state.....	0. 4	<sup>6</sup> 0. 3	.....	.....
Land in farms.....	25. 7	<sup>6</sup> 9. 8	.....	.....
Improved land in farms.....	91. 4	<sup>6</sup> 81. 4	.....	.....
Excess of acreage enterprises were capable of irrigating in 1910 over acreage irrigated in 1909.....	67, 604	.....	.....	.....
Excess of acreage included in projects over acreage irrigated in 1909..	624, 039	.....	.....	.....

<sup>1</sup> A minus sign (—) denotes decrease.   <sup>2</sup> April 15.   <sup>3</sup> June 1.   <sup>4</sup> In 1909.   <sup>5</sup> In 1899, exclusive of Indian reservations.   <sup>6</sup> Not reported.  
<sup>7</sup> Based on figures which are exclusive of Indian reservations.   <sup>8</sup> July 1.

**Number of farms irrigated.**—The number of farms given as irrigated in 1909 is made up of the number reported on the supplemental schedules by the regular enumerators, together with an estimate of the number of farms covered by enterprises which were reported by special agents but not by the regular enumerators. This estimate was based upon the average acreage irrigated per farm shown by the supplemental schedules. According to the figures presented in the table, irrigation was practiced on slightly more than one-half (52.5 per cent) of the farms in Arizona in 1909. In 1899 the proportion of irrigated farms among those outside of Indian reservations was 73.8 per cent, while in 1889 it was 75.4 per cent. It is evident that between 1889 and 1899 the number of unirrigated farms increased more rapidly than the number of irrigated farms, while the difference in favor of unirrigated farms has been even more marked during the later decade.

In 5 out of the 13 counties in the state more than half the farms are irrigated, in 3 the proportion is between 40 and 50 per cent, while in 2 it is between 25 and 40 per cent. In the remaining counties—Apache, Navajo, and Coconino—less than one-fourth of the farms are irrigated. These latter counties are in the northeastern portion of the state, where a large percentage of the farms reported are cattle ranches, on which the raising of crops is of secondary importance. Pinal County shows the largest proportion of irrigated farms, 92.8 per cent, and Graham County the next largest, 86.1 per cent.

From 1899 to 1909 the increase in the number of irrigated farms in Arizona, outside of those supplied by Indian Service enterprises, was 39.8 per cent. This percentage of increase was exceeded in five counties, all but one of which are in the southern part of the state, the highest rates of gain being 132.5 per cent in Cochise County, 110 per cent in Yuma County,

and 64.1 per cent in Graham County. In five counties decreases in the number of farms irrigated are shown, while in one county the number of irrigated farms remained the same. For three of the five counties which show decreases in the number of irrigated farms increases in the irrigated acreage were reported, from which fact an increase in the acreage irrigated per farm is apparent.

**Acreage irrigated.**—The acreage irrigated is taken from the special schedules filled out by agents from information secured from owners or officials of irrigation enterprises and, in some instances, from public records. The acreage thus obtained is considerably larger than the irrigated acreage reported on the supplemental schedules filled out by the farm enumerators. This difference is due in a measure to the fact that the special agents found enterprises which were not reported on any schedules returned by the enumerators, indicating that the acreage reported on the supplemental schedules is to some extent under the true figure. There is a natural tendency, however, for the officials of irrigation enterprises to report as irrigated the entire area of farms of which only a part was irrigated. Furthermore, some farms are so situated as to receive water from more than one enterprise, and may be reported as irrigated by each, which results in duplication. Owing to the two causes last enumerated, it is probable that the acreage irrigated as shown in this bulletin is somewhat excessive, but the extent of this excess can not be determined. It is believed, however, to be less than 10 per cent for Arizona.

The total acreage reported as irrigated in 1909 was 320,051, as against 185,396 acres in 1899 and 65,821 acres in 1889. The acreage given for 1909 includes land lying in Indian reservations, while the figures for 1889 and 1899 do not. The percentage of increase from 1889 to 1899 was 181.7, while that from 1899 to 1909, eliminating lands irrigated by the Indian Service from the total for the latter year, was 62.2.

The percentage of increase between 1899 and 1909 in the acreage irrigated was considerably higher than the percentage of increase in the number of farms irrigated, the acreage irrigated per farm for the state as a whole outside of Indian reservations increasing from 62.2 in 1899 to 72.2 in 1909. During the same period the average size reported for farms in the state decreased from 333.2 acres to 135.1 acres, which change, considered in connection with the increase in the acreage irrigated per farm, indicates that farmers are irrigating larger parts of their holdings than formerly.

The percentage of the total land area of Arizona which was irrigated was 0.4 in 1909 as against 0.3 in 1899, while in the ratio which the irrigated land bears to the total farm acreage reported as improved there

has been an increase from 81.4 per cent in 1899 for the land outside of Indian reservations to 91.4 per cent in 1909 for the state as a whole.

In both 1909 and 1899 the county for which the largest area of irrigated land was reported was Maricopa, with an irrigated acreage of 199,052 and 109,655 at the respective censuses. For only two other counties was an irrigated area in excess of 25,000 acres reported in 1909, while but one additional county had over 10,000 acres of irrigated land in that year. In addition to having the largest irrigated area of any county, Maricopa was also the county in which irrigated land formed the highest percentage of the total land area, the proportion being 3.5 per cent. In no other county was the proportion as high as 1 per cent.

**Acreage included in projects.**—The foregoing table shows that in 1910 existing enterprises were ready to supply water to 387,655 acres, or 67,604 acres more than were irrigated in 1909. It is probable that, after allowance is made for an increase in the area irrigated in 1910 over that in 1909, there remained at the close of 1910 under ditch but not irrigated at least one-third as much land as was brought under irrigation in the 10 years from 1899 to 1909. The acreage included in projects exceeds the acreage irrigated in 1909 by 624,039 acres, which is more than four times the acreage brought under irrigation in the last decade and almost twice the total area irrigated in 1909. This acreage represents the area which will be available for the extension of irrigation in the next few years upon the completion of existing enterprises and without new undertakings. It indicates in a general way the area available for settlement, although much of this unirrigated land is in farms already settled.

**Acreage irrigated, classified by character of enterprise.**—The following table gives the distribution of the acreage irrigated in 1909 according to the character of the enterprise controlling the irrigation works. There are no Carey Act enterprises or irrigation districts in the state. Of the 138,364 acres irrigated by the United States Reclamation Service, 134,364 acres are reported as having been irrigated by works which were built by other classes of enterprises and taken over by the United States Reclamation Service.

CHARACTER OF ENTERPRISE.	ACREAGE IRRIGATED IN 1909.	
	Amount.	Per cent distribution.
All classes.....	320,051	100.0
U. S. Reclamation Service.....	138,364	43.2
U. S. Indian Service.....	19,356	6.1
Cooperative enterprises.....	101,025	31.6
Commercial enterprises.....	50	( <sup>1</sup> )
Individual and partnership enterprises.....	61,196	19.1

<sup>1</sup> Less than one-tenth of 1 per cent.

Cooperative enterprises and individual and partnership enterprises, which together supplied 50.7 per cent of the acreage irrigated in 1909, are controlled by the water users. United States Reclamation Service enterprises, which are to be turned over to the water users, supplied 43.2 per cent of the acreage irrigated. Thus only a small percentage of the irrigated land is supplied by works which are not either controlled by the water users or to be turned over to them ultimately. The cooperative enterprises, which supplied water for 31.6 per cent of the land irrigated, are principally stock companies, of which the stock is owned by the water users.

Acreage irrigated, classified by source of water supply.—The table following shows the distribution

of the acreage irrigated in 1909 according to the source of water supply. From this table it is apparent that up to the present time the development of sources of water supply other than streams has been unimportant relatively to that of streams.

SOURCE OF WATER SUPPLY.	ACREAGE IRRIGATED IN 1909.	
	Amount.	Per cent distribution.
<b>All sources.....</b>	<b>320,051</b>	<b>100.0</b>
Streams.....	307,778	96.1
Lakes.....	570	0.2
Wells.....	7,585	2.4
Springs.....	3,031	1.1
Reservoirs.....	487	0.2

IRRIGATION WORKS.

The table following summarizes the data collected relating to works for supplying water for irrigation in 1910 and 1900. As only a few of the items reported in 1910 were reported in 1900, there is little opportunity for comparison between the two censuses. The figures shown for the earlier census relate only to systems that obtained water from streams, which supplied 99.5 per cent of the land reported as irrigated in 1899, and do not include statistics for Indian reservations. In computing the percentages of increase, for the sake of securing closer comparability, the figures for Indian Service irrigation have been eliminated from the totals for 1910.

Assuming that the enterprises in operation in 1909 were identical with those reported in 1910, the average acreage irrigated per enterprise in 1909 was 252.2, and the acreage irrigated per mile of main ditch was 185.3. For the enterprises shown for the preceding census, the average acreage irrigated per enterprise in 1899 was 355.3, and the average per mile of main ditch was 123.6.

Considerable attention has been devoted to the utilization of underground water in Arizona for purposes of irrigation. The table shows 214 flowing wells, which in 1909 irrigated 1,489 acres, and 470 wells pumped for irrigation, which supplied 6,096 acres altogether in 1909. Of the flowing wells all but 7 are in Cochise and Graham Counties. Pumped wells

are reported from all counties except Coconino, but more than three-fourths of the number are located in Cochise, Maricopa, and Pima Counties.

Pumping from streams has also been practiced to a considerable extent in some parts of the state, an area of 7,000 acres in the Yuma project of the United States Reclamation Service having been supplied with pumped water in 1909. Upon the completion of the project, however, these lands will be supplied by gravity diversion. The total acreage irrigated with pumped water in 1909 was 13,807.

IRRIGATION WORKS.	CENSUS OF—		INCREASE. <sup>1</sup>	
	1910	1900 <sup>2</sup>	Amount.	Per cent.
Independent enterprises..... number..	1,269	519	699	134.7
Ditches, total length..... miles..	2,597	( <sup>3</sup> )		
Main ditches..... number..	891	519	315	60.7
Length..... miles..	1,727	1,492	116	7.8
Capacity..... cu. ft. per second..	17,200	( <sup>3</sup> )		
Lateral ditches..... number..	313	( <sup>3</sup> )		
Length..... miles..	870	( <sup>3</sup> )		
Capacity..... acre-feet..	402	( <sup>3</sup> )		
Reservoirs..... number..	1,349,938	( <sup>3</sup> )		
Flowing wells..... number..	214	( <sup>3</sup> )		
Capacity..... gallons per minute..	9,953	( <sup>3</sup> )		
Pumped wells..... number..	470	( <sup>3</sup> )		
Capacity..... gallons per minute..	765,921	( <sup>3</sup> )		
Pumping plants..... number..	429	( <sup>3</sup> )		
Engine capacity..... horsepower..	37,258	( <sup>3</sup> )		
Pump capacity..... gallons per minute..	851,878	( <sup>3</sup> )		

<sup>1</sup> Based on figures which are exclusive of Indian reservations.  
<sup>2</sup> Figures relate only to systems obtaining water from streams in 1899, excluding Indian reservations.  
<sup>3</sup> Not reported.



## COST OF CONSTRUCTION, OPERATION, AND MAINTENANCE.

The table following shows the total cost of irrigation enterprises up to July 1, 1910, including construction of works and acquisition of rights, but not operation and maintenance, with the average cost per acre, based on the acreage the enterprises were capable of irrigating in 1910; the estimated final cost of enterprises completed and enterprises now under construction, with the average cost per acre, based on the acreage included in projects; and the total cost and average cost per acre of operation and maintenance in 1909. Data relating to the cost of construction and maintenance of systems operated in 1899 are included for comparison. The figure for average cost per acre of operation and maintenance in 1899 does not cover the cost for systems receiving water from wells, but these are comparatively unimportant, having supplied only 974 acres in that year. Indian reservations, as previously stated, are not covered by the figures for the earlier census.

The cost of operation and maintenance is not reported for individual and partnership enterprises, for the reason that farmers whose land is irrigated by such systems generally clean their own ditches at odd times without keeping any record of the time spent. In the case of the larger enterprises this cost represents a cash outlay by the farmers, while in the case of many of the smaller cooperative enterprises the cost is worked out by the farmers.

	CENSUS OF—		INCREASE.	
	1910	1900	Amount.	Per cent.
Cost of irrigation enterprises.....	<sup>1</sup> \$17,677,986	<sup>2</sup> \$4,438,352	<sup>3</sup> \$12,755,635	<sup>4</sup> 287.4
Average per acre.....	<sup>4</sup> \$45.80	<sup>5</sup> \$23.94	( <sup>6</sup> )	.....
Estimated final cost of existing enterprises.....	\$24,828,808	( <sup>7</sup> )	.....	.....
Average per acre included in projects.....	\$26.30	( <sup>7</sup> )	.....	.....
Operation and maintenance:				
Acreage for which cost is reported.....	<sup>8</sup> 230,429	( <sup>7</sup> )	.....	.....
Total cost reported.....	<sup>8</sup> \$214,358	( <sup>7</sup> )	.....	.....
Average cost per acre.....	<sup>9</sup> \$0.93	<sup>9</sup> \$0.82	\$0.11	13.2

- <sup>1</sup> Reported July 1.
- <sup>2</sup> Cost of systems operated in 1899, exclusive of Indian reservations.
- <sup>3</sup> Based on figures which are exclusive of Indian reservations.
- <sup>4</sup> Based on acreage enterprises were capable of irrigating in 1910.
- <sup>5</sup> Based on acreage irrigated in 1899.
- <sup>6</sup> Figures not comparable. (See explanation in text.)
- <sup>7</sup> Not reported.
- <sup>8</sup> For 1909.
- <sup>9</sup> Figure relates only to systems obtaining water from streams in 1899.

The cost of irrigation systems shows the largest increase of any item included in the census of irrigation, 287.4 per cent. The average cost per acre shown for 1910 is based on the acreage under ditch in that

year, but since the corresponding acreage for 1900 was not reported, the figure for average cost at the earlier census is based on the acreage irrigated in 1899. If computed on the basis of the acreage irrigated in 1909, the average cost in 1910 would be \$55.23, representing an increase of 130.7 per cent over the figure for the average cost at the census of 1900. The year 1899 was near the close of the period of private and cooperative construction, when most of the works were built by the water users themselves with little or no expenditure of money, and near the beginning of the present period of large-scale construction by corporations and the Federal Government. This later construction is not only on a more extensive scale, but also more difficult and of a better type. Largely as a result of these changed conditions the average cost per acre of irrigation has greatly increased. A number of large enterprises are under construction, upon which considerable expenditures have been made, while but little land is irrigated as yet. This condition tends to make the average cost shown higher than the true average. The average based on the estimated final cost and the acreage included in projects, \$26.30 per acre, probably more truly represents the average cost per acre of irrigation in Arizona.

The county showing the lowest average cost per acre is Graham, which ranks second with respect to acreage irrigated. In Maricopa County, which is first with respect to acreage irrigated, the average cost per acre is practically the same as in the state as a whole, this county having reported approximately 60 per cent both of the total acreage under ditch in the state in 1910 and of the total cost of works up to July 1, 1910. Yuma County shows the highest average cost per acre, \$259.55, which unusually high average is due to the large preliminary expenditures made on the Yuma project of the United States Reclamation Service. The average cost per acre for Yuma County upon the completion of this and other enterprises now under way is estimated at \$45.83, or slightly more than the average cost up to July 1, 1910, shown for the state.

The acreage for which cost of operation and maintenance in 1909 was reported constitutes 72 per cent of the total acreage reported as irrigated in 1909 and 89 per cent of the acreage reported as irrigated by other than individual and partnership enterprises. The cost reported can be said, therefore, to represent fairly the average annual expense for all but individual and partnership enterprises.

CROPS.

As previously stated, the data relating to irrigated crops are taken from supplemental schedules filled out by the regular census enumerators. Since the special agents found enterprises which the enumerators had not reported, it is evident that the information relating to irrigated crops is incomplete to some extent. It shows, however, the relative importance of the different irrigated crops and is sufficiently complete to afford reliable averages of yields.

The following table shows the acreage, yield, and value of the principal crops reported as grown under

irrigation in 1909, in comparison with totals for the same crops reported for the entire state. While small quantities of other crops are grown both on irrigated and unirrigated land, the leading crops of the state, as well as the leading crops grown under irrigation, are represented in the table. In the reports of the agricultural census the acreages of seed crops are not generally given, but since the growing of alfalfa seed is coming to be an industry of some importance in the irrigated sections of the country, statistics for this crop are presented here.

CROP.	ACREAGE.			YIELD.			VALUE.	
	Total for state.	Irrigated.		Unit.	Total for state.	On irrigated land.	Total for state.	For irrigated land.
		Amount.	Per cent of total.					
<b>Cereals:</b>								
Corn.....	15,005	7,797	50.0	Bushels.....	298,664	171,907	\$293,847	\$158,993
Oats.....	5,897	5,406	92.1	Bushels.....	189,312	177,057	130,384	127,003
Wheat.....	20,028	17,901	89.4	Bushels.....	362,875	358,175	410,214	398,294
Barley.....	32,897	32,268	98.1	Bushels.....	1,008,442	1,001,611	714,834	711,261
<b>Other grains and seeds:</b>								
Alfalfa seed.....	6,378	6,355	99.6	Bushels.....	22,492	22,204	156,628	150,343
Dry edible beans.....	2,301	759	33.0	Bushels.....	18,457	6,863	44,997	14,712
<b>Hay and forage:</b>								
Timothy alone.....	120	53	44.2	Tons.....	182	54	1,948	911
Timothy and clover mixed.....	143	40	28.0	Tons.....	289	60	4,984	1,200
Clover alone.....	119	113	99.2	Tons.....	119	113	1,255	1,247
Alfalfa.....	66,102	65,369	98.9	Tons.....	194,534	194,171	1,890,459	1,880,244
Other tame or cultivated grasses <sup>1</sup> .....	2,188	437	20.0	Tons.....	2,987	438	42,812	5,213
Wild, salt, or prairie grasses.....	9,514	1,462	15.4	Tons.....	8,168	1,756	81,987	13,459
Grains cut green.....	19,058	15,266	80.1	Tons.....	29,712	24,291	368,316	285,166
Coarse forage.....	3,980	2,595	64.4	Tons.....	7,762	6,221	84,003	53,528
<b>Sundry crops:</b>								
Potatoes.....	1,151	1,011	87.8	Bushels.....	97,141	66,351	98,597	74,885
Sugar beets.....	4,443	4,123	92.8	Tons.....	49,630	47,175	236,997	226,367
Orchard fruits and grapes.....	( <sup>2</sup> )	1,618					266,481	174,122
Small fruits.....	76	75	98.7				12,987	12,478

<sup>1</sup> Includes millet or Hungarian grass.

<sup>2</sup> Agricultural returns show number of trees and not acreage.

**Acreage.**—Of the entire acreage of the crops for which totals are presented in the table, 84.8 per cent is irrigated, but the proportion irrigated varies widely for the different crops.

Few crops are grown to any great extent in Arizona without irrigation. The only crop covering an acreage in excess of 5,000 of which less than half of the acreage is reported as irrigated is "wild, salt, or prairie grasses," for which the proportion is only 15.4 per cent.

Of the acreage of the combined cereals 85.2 per cent is irrigated. The highest proportion of the acreage of any cereal reported as irrigated is 98.1 per cent for barley and the lowest 50 per cent for corn.

The irrigated area of the hay and forage crops shown in the table forms 84.3 per cent of the total reported. Very little alfalfa is grown without irrigation, 98.9 per cent of the total acreage in this crop being irrigated. For grains cut green the percentage is 80.1, while that for clover alone, which covers only a very small acreage, is 99.2, and that for coarse forage is 64.4.

In the case of each of the miscellaneous crops for which the total acreage is shown more than 85 per cent of the acreage is irrigated.

Of the crops shown in the table, alfalfa covers the largest irrigated acreage, representing 40.2 per cent of the total irrigated acreage of these crops. Barley is second with 19.9 per cent of this total, followed by wheat with 11 per cent, and grains cut green with 9.4 per cent. No other single crop covers as much as 5 per cent of the total acreage of the irrigated crops presented in the table.

While most of the crops irrigated are well distributed geographically, there is a tendency toward the concentration of certain crops in particular localities. This is shown by the statement following, which gives the counties reporting the largest acreages of the principal irrigated crops, with the proportions which they contain of the total irrigated acreages of these crops in the state.

**Corn.**—Graham County, 28.7 per cent; Maricopa, 16 per cent; Pinal, 13.6 per cent.

*Oats*.—Apache County, 42.8 per cent; Maricopa, 39.1 per cent; Navajo, 7.6 per cent.

*Wheat*.—Maricopa County, 49.8 per cent; Pinal, 27 per cent; Graham, 15.3 per cent.

*Barley*.—Maricopa County, 64.8 per cent; Graham, 16.4 per cent; Pinal, 8 per cent.

*Alfalfa seed*.—Maricopa County, 95.7 per cent; Yuma, 4.3 per cent.

*Alfalfa*.—Maricopa County, 67.2 per cent; Graham, 17.5 per cent; Yavapai, 3.2 per cent.

"*Wild, salt, or prairie grasses*."—Apache County, 37.8 per cent; Maricopa, 17 per cent; Santa Cruz, 12.7 per cent.

*Grains cut green*.—Maricopa County, 36.4 per cent; Pinal, 16.5 per cent; Pima, 14.2 per cent.

*Coarse forage*.—Maricopa County, 51.6 per cent; Cochise, 17.5 per cent; Yavapai, 16.1 per cent.

*Potatoes*.—Graham County, 31.7 per cent; Maricopa, 24.2 per cent; Yavapai, 10.8 per cent.

*Sugar beets*.—Maricopa County, 99.9 per cent.

*Orchard fruits and grapes*.—Yavapai County, 33.9 per cent; Graham, 23.8 per cent; Maricopa, 18.3 per cent.

*Small fruits*.—Maricopa County, 54.7 per cent; Pima, 18.7 per cent; Yavapai, 9.3 per cent.

Of the acreage of orchards not bearing that was irrigated in 1909, 1,046 acres, 61.3 per cent was in Maricopa County, 16.8 per cent in Yavapai County, and 5.4 per cent in Yuma County.

**Yield.**—In the following table the average yields per acre of crops extensively grown both with and without irrigation are shown. The yields on unirrigated land are obtained by subtracting the totals for irrigated crops from the totals for the state.

CROP.	AVERAGE YIELD PER ACRE.		
	On unirrigated land.	On irrigated land.	
		Amount.	Per cent of excess over yield on unirrigated land.
Corn.....bushels..	16.2	22.1	36.4
Oats.....bushels..	26.6	32.8	23.3
Wheat.....bushels..	2.2	20.0	800.1
Dry edible beans.....bushels..	7.5	9.0	20.0
Alfalfa.....tons..	0.50	2.90	498.0
Wild, salt, or prairie grasses.....tons..	0.80	1.20	50.0
Grains cut green.....tons..	1.43	1.59	11.2
Coarse forage.....tons..	1.09	2.43	122.0

The yields on irrigated lands were, in the case of all crops included in the table, higher than those on unirrigated land. The small average yields of wheat and alfalfa on unirrigated land and the resulting large excess in the average yields on irrigated land can not be explained except upon the assumption of a partial failure of the crops on unirrigated land in 1909. In considering these comparisons it should be borne in mind that they are not comparisons of yields on irrigated and on unirrigated land in the same localities, but of yields under irrigation in localities where crops can not be grown to advantage without it with yields in localities where irrigation is not necessary. They do not present, therefore, the relative advantages of farming with and without irrigation in a given community, but rather give one factor for determining the relative advantages of farming where irrigation is necessary and where it is not necessary for the successful growing of crops.

#### COUNTY TABLE.

The next table gives in detail, by counties, the data summarized above, except those relating to crops. For purposes of comparison the total number of farms in the state, the approximate land area of the state, the total land in farms, and the improved land in farms have been included in the table.

Attention is again directed to the fact that the totals for 1899 do not cover Indian reservations, no report as to irrigation on reservations in Arizona having been made at the Twelfth Census. Consequently, the percentages of increase shown in the table are,

with the exception of those relating to cost of operation and maintenance, based on figures exclusive of Indian reservations.

Certain enterprises extend into more than one county, and in the case of some of these enterprises the reports do not segregate the data by counties. In all cases of this kind a distribution among the counties involved has been made according to the best estimates possible from all the information in the possession of the bureau. It is believed that these estimates are approximately correct.

STATISTICS OF IRRIGATION.

ACREAGE IRRIGATED, EXTENT AND COST OF IRRIGATION ENTERPRISES, AND COST OF OPERATION AND MAINTENANCE, BY COUNTIES: 1909 AND 1910.

[Comparative data for 1899 in italics.]

	THE STATE.	Apache.	Cochise.	Coconino.	Gila.	Graham.	Maricopa.	
1	Number of all farms in 1910.....	0,227	803	1,042	656	515	889	2,229
2	Number of farms irrigated in 1909.....	4,841	184	293	38	251	765	1,726
3	Per cent of all farms.....	52.5	22.9	28.1	5.8	48.7	86.1	77.4
4	Number of farms irrigated in 1899.....	2,981	216	126	50	162	462	1,088
5	Per cent of increase, 1899-1909 <sup>1</sup> .....	39.8	*22.3	132.5	*32.0	5.6	64.1	56.5
<b>LAND AND FARM AREA</b>								
6	Approximate land area..... acres.....	72,838,400	7,282,560	3,948,800	11,672,320	2,997,120	4,165,120	5,690,240
7	Land in farms..... acres.....	1,246,613	104,859	306,985	29,054	22,066	72,760	248,271
8	Improved land in farms..... acres.....	350,173	17,954	34,787	5,671	6,660	33,715	172,592
9	Acres irrigated in 1909.....	320,051	8,853	4,900	901	2,778	38,824	199,052
10	Per cent of total land area.....	0.4	0.1	0.1	(3)	0.1	0.9	3.5
11	Per cent of land in farms.....	25.7	8.4	1.6	3.1	12.6	53.4	80.2
12	Per cent of improved land in farms.....	91.4	49.3	14.1	15.9	41.7	*115.2	*115.3
13	Acres irrigated in 1899.....	185,896	7,572	4,089	1,114	3,294	13,297	109,655
14	Per cent of increase, 1899-1909 <sup>1</sup> .....	62.2	*6.3	*1.8	*51.9	*49.0	111.5	77.3
15	Acres enterprises were capable of irrigating in 1910.....	337,655	9,330	6,488	1,183	3,272	41,223	236,061
16	Acres included in projects.....	944,090	34,807	14,141	3,223	4,233	52,143	456,361
<b>ACREAGE IRRIGATED AND INCLUDED IN PROJECTS</b>								
<b>CLASSIFIED BY CHARACTER OF ENTERPRISE.</b>								
17	U. S. Reclamation Service, irrigated in 1909.....	138,364						131,364
18	Enterprises were capable of irrigating in 1910.....	164,500						150,000
19	Included in projects.....	370,000						240,000
20	U. S. Indian Service, irrigated in 1909.....	19,386	1,944		365	778	123	4,680
21	Enterprises were capable of irrigating in 1910.....	20,974	1,944		395	823	523	4,680
22	Included in projects.....	36,017	4,730		1,500	1,064	593	5,800
23	Carey Act enterprises, irrigated in 1909.....							
24	Enterprises were capable of irrigating in 1910.....							
25	Included in projects.....							
26	Irrigation districts, irrigated in 1909.....							
27	Enterprises were capable of irrigating in 1910.....							
28	Included in projects.....							
29	Cooperative enterprises, irrigated in 1909.....	101,025	3,985	640	300		34,013	51,265
30	Enterprises were capable of irrigating in 1910.....	120,559	4,012	900	300		34,813	60,465
31	Included in projects.....	360,639	24,237	3,000	1,000		42,780	160,980
32	Commercial enterprises, irrigated in 1909.....	80						
33	Enterprises were capable of irrigating in 1910.....	200						
34	Included in projects.....	1,600						
35	Individual and partnership enterprises, irrigated in 1909.....	61,196	2,924	4,260	236	2,000	4,088	11,763
36	Enterprises were capable of irrigating in 1910.....	81,422	3,374	5,588	488	2,449	5,887	20,936
37	Included in projects.....	175,834	5,840	11,141	723	3,169	8,770	48,581
<b>ACREAGE IRRIGATED</b>								
<b>CLASSIFIED BY SOURCE OF WATER SUPPLY.</b>								
38	Supplied from streams.....	307,778	7,965	3,094	791	2,524	37,336	186,263
39	By gravity.....	300,007	7,965	3,094	791	2,524	37,181	196,203
40	By pumping.....	7,771					155	
41	Supplied from lakes.....	570	550					
42	By gravity.....	570	550					
43	By pumping.....							
44	Supplied from wells.....	7,585	10	1,740		69	948	2,235
45	Flowing.....	1,489		567			308	
46	By pumping.....	6,096	10	1,173		69	59	2,235
47	Supplied from springs.....	5,631	128	27	110	185	440	539
48	Supplied from reservoirs.....	437	200	39			100	15
49	Total acreage supplied by pumping.....	13,807	10	1,173		69	205	2,235
<b>IRRIGATION ENTERPRISES</b>								
50	Independent enterprises..... number.....	1,369	64	244	20	117	190	88
51	Number in 1899 <sup>2</sup> .....	519	57	36	7	40	36	81
52	Per cent of increase, 1899-1910 <sup>1</sup> .....	184.7	59.5	577.8	128.6	132.5	422.9	174.2
53	Main ditches..... number.....	881	67	71	20	102	124	64
54	Number in 1899 <sup>2</sup> .....	519	37	59	7	40	56	31
55	Per cent of increase, 1899-1910 <sup>1</sup> .....	60.7	70.3	97.2	128.6	95.0	234.3	87.1
56	Length..... miles.....	1,727	112	94	17	90	216	433
57	Length in 1899 <sup>2</sup> ..... miles.....	2,492	80	51	8	64	133	442
58	Per cent of increase, 1899-1910 <sup>1</sup> .....	7.3	35.0	84.3	62.5	*14.1	46.4	*7.2
59	Capacity..... cubic feet per second.....	17,200	577	349	49	453	1,075	7,468
60	Laterals..... number.....	313	46	3	25	11	10	29
61	Length..... miles.....	870	40	2	20	5	14	525
62	Reservoirs..... number.....	402	32	170	11	3	73	17
63	Capacity..... acre-feet.....	1,349,938	30,456	68	5,428	1	2,950	1,284,013
64	Flowing wells..... number.....	214		90			117	
65	Capacity..... gallons per minute.....	9,953		2,959			6,789	
66	Pumped wells..... number.....	470	4	194		10	9	95
67	Capacity..... gallons per minute.....	765,921	65	27,185		2,555	4,002	617,790
68	Pumping plants..... number.....	429	4	194		11	19	65
69	Engine capacity..... horsepower.....	37,258	7	4,336		43	1,248	26,781
70	Pump capacity..... gallons per minute.....	851,873	65	27,185		2,908	8,517	617,790
<b>COST</b>								
71	Cost of enterprises up to July 1, 1910..... dollars.....	17,677,966	234,338	513,333	42,266	38,667	335,071	10,759,817
72	Cost in 1899 <sup>2</sup> ..... dollars.....	4,438,552	78,756	27,661	6,280	13,767	127,288	3,080,000
73	Per cent of increase, 1899-1910 <sup>1</sup> .....	287.4	123.0	1,762.5	122.7	47.3	159.4	244.7
74	Average cost per acre enterprises were capable of irrigating in 1910..... dollars.....	45.60	25.17	79.12	35.73	11.82	8.15	45.58
75	Average cost per acre irrigated in 1899 <sup>2</sup> ..... dollars.....	23.64	10.06	6.19	8.72	4.85	6.96	28.14
76	Estimated final cost of existing enterprises..... dollars.....	24,828,865	334,338	513,333	42,266	38,667	346,721	13,418,557
77	Average per acre included in projects..... dollars.....	26.30	11.06	36.30	13.11	9.13	6.65	29.47
<b>OPERATION AND MAINTENANCE</b>								
78	Acres for which cost is reported.....	230,429	3,985	640	300		32,813	188,229
79	Total cost reported..... dollars.....	214,358	4,074	6,200	504		42,763	140,935
80	Average per acre for which cost is reported..... dollars.....	0.93	1.02	9.69	1.68		1.30	0.77
81	Average cost per acre in 1899 <sup>2</sup> ..... dollars.....	0.82						
82	Per cent of increase, 1899-1909.....	13.2						

<sup>1</sup> Based on figures which are exclusive of Indian reservations.

<sup>2</sup> Decrease.

<sup>3</sup> Less than one-tenth of 1 per cent.

<sup>4</sup> Acreage irrigated includes wild grass, while improved land in farms does not.

<sup>5</sup> Figures relate only to systems obtaining water from streams.

<sup>6</sup> Total cost shown for state includes \$30,194, representing the cost of well systems which was not reported by counties. County figures relate only to systems obtaining water from streams.

<sup>7</sup> Not reported by counties. Figure relates only to systems obtaining water from streams.

## ACREAGE IRRIGATED, EXTENT AND COST OF IRRIGATION ENTERPRISES, AND COST OF OPERATION AND MAINTENANCE, BY COUNTIES: 1909 AND 1910—Continued.

[Comparative data for 1899 in italics.]

	Mohave.	Navajo.	Pima.	Pinal.	Santa Cruz.	Yavapai.	Yuma.
1 Number of all farms in 1910.....	111	977	405	614	176	522	288
2 Number of farms irrigated in 1909.....	44	181	188	570	75	297	229
3 Per cent of all farms.....	39.6	18.5	46.4	32.8	42.6	56.9	79.5
4 <i>Number of farms irrigated in 1899.....</i>	<i>58</i>	<i>114</i>	<i>186</i>	<i>160</i>	<i>76</i>	<i>244</i>	<i>90</i>
5 Per cent of increase, 1899-1909 <sup>1</sup> .....	<sup>2</sup> 29.3	57.0	.....	<sup>2</sup> 5.0	<sup>2</sup> 1.3	21.7	110.0
<b>LAND AND FARM AREA</b>							
6 Approximate land area..... acres.....	8,569,600	6,592,000	6,083,200	3,443,200	786,500	5,216,000	0,391,680
7 Land in farms..... acres.....	4,090	105,589	71,937	43,199	51,874	150,434	32,555
8 Improved land in farms..... acres.....	1,027	11,176	10,504	18,789	6,070	18,097	13,131
9 Acreage irrigated in 1909.....	1,688	6,458	10,160	25,431	4,773	8,571	7,662
10 Per cent of total land area.....	( <sup>3</sup> )	0.1	0.2	0.7	0.6	0.2	0.1
11 Per cent of land in farms.....	41.3	6.1	14.1	58.9	9.2	5.7	23.5
12 Per cent of improved land in farms.....	<sup>4</sup> 164.4	57.8	96.7	<sup>4</sup> 135.4	78.6	47.4	58.4
13 <i>Acreage irrigated in 1899.....</i>	<i>1,419</i>	<i>3,007</i>	<i>3,617</i>	<i>11,297</i>	<i>2,668</i>	<i>8,730</i>	<i>4,413</i>
14 Per cent of increase, 1899-1909 <sup>1</sup> .....	14.1	61.6	<sup>2</sup> 1.2	54.3	86.3	<sup>2</sup> 1.8	69.1
15 Acreage enterprises were capable of irrigating in 1910.....	8,726	8,276	11,876	31,100	4,895	9,638	15,087
16 Acreage included in projects.....	40,624	24,997	24,484	89,400	6,872	16,588	177,217
<b>ACREAGE IRRIGATED AND INCLUDED IN PROJECTS</b>							
<b>CLASSIFIED BY CHARACTER OF ENTERPRISE.</b>							
17 U. S. Reclamation Service, irrigated in 1909.....							7,000
18 Enterprises were capable of irrigating in 1910.....							14,500
19 Included in projects.....							130,000
20 U. S. Indian Service, irrigated in 1909.....	69	1,600	1,647	8,000			200
21 Enterprises were capable of irrigating in 1910.....	104	1,600	2,720	8,000			205
22 Included in projects.....	150	2,200	4,480	8,000			7,500
23 Carey Act enterprises, irrigated in 1909.....							
24 Enterprises were capable of irrigating in 1910.....							
25 Included in projects.....							
26 Irrigation districts, irrigated in 1909.....							
27 Enterprises were capable of irrigating in 1910.....							
28 Included in projects.....							
29 Cooperative enterprises, irrigated in 1909.....	155	4,100	1,200	3,000		1,667	100
30 Enterprises were capable of irrigating in 1910.....	6,330	4,300	1,200	5,700		1,739	300
31 Included in projects.....	37,200	12,600	1,400	44,100		2,842	31,000
32 Commercial enterprises, irrigated in 1909.....		80					
33 Enterprises were capable of irrigating in 1910.....		200					
34 Included in projects.....		1,600					
35 Individual and partnership enterprises, irrigated in 1909.....	1,464	678	7,813	13,831	4,773	6,904	362
36 Enterprises were capable of irrigating in 1910.....	1,792	2,178	7,956	17,400	4,895	7,799	682
37 Included in projects.....	3,274	8,597	18,604	37,300	6,872	14,240	8,717
<b>ACREAGE IRRIGATED</b>							
<b>CLASSIFIED BY SOURCE OF WATER SUPPLY.</b>							
38 Supplied from streams.....	1,195	5,855	8,150	25,418	3,563	8,014	7,610
39 By gravity.....	1,065	5,840	8,150	25,418	3,563	7,983	230
40 By pumping.....	130	15				31	7,380
41 Supplied from lakes.....						20	
42 By gravity.....						20	
43 By pumping.....							
44 Supplied from wells.....	8	80	1,690	11	645	97	52
45 Flowing.....						24	
46 By pumping.....	8	80	1,690	11	645	73	52
47 Supplied from springs.....	485	473	270	2	535	437	
48 Supplied from reservoirs.....		50	50		10	23	
49 Total acreage supplied by pumping.....	138	95	1,690	11	645	104	7,432
<b>IRRIGATION ENTERPRISES</b>							
50 Independent enterprises..... number.....	57	17	110	77	66	196	23
51 <i>Number in 1899<sup>5</sup>.....</i>	<i>34</i>	<i>12</i>	<i>42</i>	<i>41</i>	<i>29</i>	<i>167</i>	<i>8</i>
52 Per cent of increase, 1899-1910 <sup>1</sup> .....	58.8	33.3	157.1	85.4	127.6	17.4	175.0
53 Main ditches..... number.....	57	28	53	67	45	176	17
54 <i>Number in 1899<sup>5</sup>.....</i>	<i>34</i>	<i>12</i>	<i>42</i>	<i>41</i>	<i>29</i>	<i>167</i>	<i>8</i>
55 Per cent of increase, 1899-1910 <sup>1</sup> .....	58.8	125.0	21.4	51.2	55.2	5.4	100.0
56 Length..... miles.....	61	87	70	179	64	211	93
57 <i>Length in 1899<sup>5</sup>.....</i>	<i>35</i>	<i>39</i>	<i>108</i>	<i>127</i>	<i>40</i>	<i>293</i>	<i>64</i>
58 Per cent of increase, 1899-1910 <sup>1</sup> .....	68.6	115.4	<sup>2</sup> 41.5	23.6	60.0	<sup>2</sup> 29.2	39.1
59 Capacity..... cubic feet per second.....	336	98	698	2,353	170	752	2,822
60 Laterals..... number.....	40	50	9	36	12	24	12
61 Length..... miles.....	7	40	4	57	12	9	135
62 Reservoirs..... number.....	9	11	27	5	10	31	8
63 Capacity..... acre-feet.....	3,124	3,428	135	9,961	135	1,235	4
64 Flowing wells..... number.....		1				6	
65 Capacity..... gallons per minute.....		20				175	
66 Pumped wells..... number.....	3	1	68	25	21	25	15
67 Capacity..... gallons per minute.....	2,170	700	38,829	48,875	17,242	3,047	3,158
68 Pumping plants..... number.....	6	2	62	21	20	21	14
69 Engine capacity..... horsepower.....	112	25	769	779	345	70	2,743
70 Pump capacity..... gallons per minute.....	10,224	2,020	39,243	48,875	17,242	4,071	73,733
<b>COST</b>							
71 Cost of enterprises up to July 1, 1910..... dollars.....	85,948	258,303	427,077	631,934	53,051	219,770	4,071,491
72 <i>Cost in 1899<sup>5</sup>.....</i>	<i>10,670</i>	<i>187,200</i>	<i>40,340</i>	<i>521,200</i>	<i>20,907</i>	<i>151,191</i>	<i>200,000</i>
73 Per cent of increase, 1899-1910 <sup>1</sup> .....	651.3	102.9	944.3	<sup>2</sup> 19.5	177.7	45.4	1,931.7
74 Average cost per acre enterprises were capable of irrigating in 1910..... dollars.....	9.85	31.27	35.96	20.32	11.86	23.04	259.55
75 <i>Average cost per acre irrigated in 1899<sup>5</sup>.....</i>	<i>7.85</i>	<i>42.50</i>	<i>4.68</i>	<i>46.14</i>	<i>8.24</i>	<i>17.52</i>	<i>46.52</i>
76 Estimated final cost of existing enterprises..... dollars.....	320,243	299,915	427,077	631,934	58,051	224,770	8,122,491
77 Average per acre included in projects..... dollars.....	7.88	12.00	17.44	7.07	8.45	13.55	45.83
<b>OPERATION AND MAINTENANCE</b>							
78 Acreage for which cost is reported.....	95	4,100		3,600		1,667	
79 Total cost reported..... dollars.....	700	10,267		4,320		4,595	
80 Average per acre for which cost is reported..... dollars.....	7.37	2.50		1.20		2.76	
81 <i>Average cost per acre in 1899<sup>5</sup>.....</i>							
82 Per cent of increase, 1899-1909.....							

<sup>1</sup> Based on figures which are exclusive of Indian reservations.<sup>2</sup> Decrease.<sup>3</sup> Less than one-tenth of 1 per cent.<sup>4</sup> Acreage irrigated includes wild grass, while improved land in farms does not.<sup>5</sup> Figures relate only to systems obtaining water from streams.<sup>6</sup> Not reported by counties.

## CHAPTER 5.

# STATISTICS OF MANUFACTURES FOR THE STATE, CITIES, AND INDUSTRIES.

**Introduction.**—This chapter gives the statistics of manufacture for Arizona for the calendar year 1909 as shown by the Thirteenth Census.

The text summarizes the general results of the census inquiry, presenting a series of special tables in which the main facts printed in the general tables are given in convenient form for the territory as a whole and for important industries. It also presents tables in which the statistics for the industries of the territory as a whole and for a few important industries are classified by character of ownership, size of establishments, number of wage earners, and prevailing hours of labor, information which could not be presented in general tables for each industry without disclosing the facts for individual establishments.

At the end of the chapter are three general tables.

Table I gives for 1909, 1904, and 1899 the number of establishments and of persons engaged in the industries, primary power, capital, salaries and wages, cost of materials, value of products, and value added by manufacture, for all industries combined and for certain important industries in the territory. It also gives the same items for 1909 for all industries combined for Phoenix and Tucson, the two cities having a population of over 10,000 in 1910.

Table II gives statistics in greater detail for 1909 for the territory and for a larger number of industries.

Table III gives statistics in detail for 1909 for each city having from 10,000 to 50,000 inhabitants for all industries combined.

**Scope of census: Factory industries.**—Census statistics of manufactures are compiled primarily for the purpose of showing the absolute and relative magnitude of the different branches of industry covered and their growth or decline. Incidentally, the effort is made to present data throwing light upon character of organization, location of establishments, size of establishments, labor force, and similar subjects. When use is made of the data for these purposes it is imperative that due attention should be given to the limitations of the figures. Particularly is this true when the attempt is made to derive from them figures purporting to show average wages, cost of production, or profits. These limitations will be fully discussed in the general report on manufactures for the United States as a whole.

The census of 1909, like that of 1904, was confined to manufacturing establishments conducted under the factory system, as distinguished from the neighborhood, hand, and building industries. Where statistics for 1899 are given they have been reduced to a comparable basis by eliminating the latter classes of industries. The census does not include establishments which were idle during the entire year, or had a value of products of less than \$500, or the manufacturing done in educational, eleemosynary, and penal insti-

tutions, or in governmental establishments, except those of the Federal Government.

**Period covered.**—The returns cover the calendar year 1909, or the business year which corresponds most nearly to that calendar year. The statistics cover a year's operations, except for establishments which began or discontinued business during the year.

**The establishment.**—The term "establishment" comprises the factories, mills, or plants which are under a common ownership or control, and for which one set of books of account is kept.

If, however, the plants constituting an establishment as thus defined were not all located within the same city or state, separate reports were secured in order that the separate totals might be included in the statistics for each city or state. In some instances separate reports were secured for different industries carried on in the same establishment.

**Classification by industries.**—The establishments were assigned to the several classes of industries according to their products of chief value. The products reported for a given industry may thus, on the one hand, include minor products very different from those covered by the class designation, and, on the other hand, may not include the total product covered by this designation, because some part of this product may be made in establishments in which it is not the product of chief value.

**Selected industries.**—The general tables at the end of this chapter give the principal facts separately for the industries of the territory. A selection has been made of the leading industries of the territory for more detailed consideration. Sometimes an industry of greater importance than some of those selected is omitted because it comprises so few establishments that these detailed presentations would reveal the operations of individual concerns.

**Comparisons with previous censuses.**—Owing to the changes in industrial conditions it is not always possible to classify establishments by industries in such a way as to permit accurate comparison with preceding censuses. Table I, giving comparable figures for 1909, 1904, and 1899, therefore, does not embrace all the industries shown for 1909 in Table II.

**Influence of increased prices.**—In considering changes in cost of materials, value of products, and value added by manufacture, account should be taken of the general increase in the prices of commodities during recent years. To the extent to which this factor has been influential the figures can not be taken as an exact measure of increase in the volume of business.

**Persons engaged in industry.**—At the censuses of 1909, 1904, and 1899 the following general classes of persons engaged in manufacturing industries have been distinguished: (1) Proprietors and firm members, (2) salaried officers of corporations, (3) superintendents and managers, (4) clerks, and (5) wage earners. In the censuses of 1904 and 1899 these five classes were shown according to the three main groups: (1) Proprietors and firm members, (2) salaried officials, clerks, etc., and (3) wage earners. The second group included the three classes of salaried officers of corporations, superintendents and managers, and clerks. In the present census an entirely different grouping is employed: that into (1) proprietors and officials, (2) clerks, and (3) wage earners. The first group includes proprietors and firm members, salaried officers of corporations, and superintendents and managers.



At this census the number of persons engaged in the industries, segregated by sex, and, in the case of wage earners, also by age (whether under 16 or 16 and over), was reported for December 15, or the nearest representative day. The 15th of December was selected as representing for most industries normal conditions of employment, but where conditions were exceptional, and particularly in the case of certain seasonal industries, the December date could not be accepted as typical and an earlier date had to be chosen.

In the case of employees other than wage earners the number thus reported on December 15 or other representative day has been treated as equivalent to the average for the year, since the number of employees of this class does not vary much from month to month in a given industry. In the case of wage earners the average is obtained in the manner explained in the next paragraph.

**Wage earners.**—In addition to the report by sex and age of the number of wage earners on December 15, or other representative day, a report was obtained of the number employed on the 15th of each month, without distinction of sex or age. From these figures the average number of wage earners for the year has been calculated by dividing the sum of the numbers reported each month by 12. The average thus obtained represents the number of wage earners that would be required to perform the work done if all were constantly employed during the entire year. Accordingly, the importance of any industry as an employer of labor is believed to be more accurately measured by this average than by the number employed at any one time or on a given day.

The number of wage earners reported for the representative day, though given for each separate industry, is not totaled for all industries combined, because in view of the variations of date such a total is believed not to be significant. It would involve more or less duplication of persons working in different industries at different times, would not represent the total number employed in all industries at any one time, and would give an undue weight to seasonal industries as compared with industries in continual operation.

In particular, totals by sex and age for the wage earners reported for the representative day would be misleading, because of the undue weight given to seasonal industries, in some of which, such as canning and preserving, the distribution of the wage earners by sex and age is materially different from that in most industries of more regular operation. In order to determine as nearly as possible the sex and age distribution of the average number of wage earners in the state as a whole, the following procedure has been adopted:

The percentage distribution by sex and age of the employees in each industry for December 15, or the nearest representative day, has been calculated from the actual numbers reported for that date. This percentage has been applied to the average number of employees for the year in that industry to determine the average number of men, women, and children employed. These calculated averages for the several industries have been added up to give the average distribution for the state as a whole.

In 1899 and 1904 the schedule called for the average number of wage earners of each sex 16 years and over, and the total number under 16 years of age, for each month, and these monthly statements were combined in an annual average. Comparatively few manufacturing concerns, however, keep their books in such way as to show readily the number of men, women, and children (under 16) employed each month. These monthly returns by sex and age were, in fact, largely estimates. It was believed that a more accurate and reliable sex and age distribution could be secured by taking as a basis of estimate the actual numbers employed on a single day.

**Prevailing hours of labor.**—The census made no attempt to ascertain the number of employees working a given number of hours per week. The inquiry called merely for the prevailing practice followed in each establishment. Occasional variations in hours in an establishment from one period to another are disregarded, and no attention is given to the fact that a limited number of

employees may have hours differing from those of the majority. In the tables all the wage earners of each establishment are counted in the class within which the establishment itself falls. In most establishments, however, all or practically all the employees work the same number of hours, so that these figures give a substantially correct picture of the hours of labor in manufacturing industries.

**Capital.**—For reasons stated in prior census reports, the statistics of capital secured by the census canvass are so defective as to be without value, except as indicating very general conditions. The instructions on the schedule for securing capital were as follows:

The answer should show the total amount of capital, both owned and borrowed, on the last day of the business year reported. All the items of fixed and live capital may be taken at the amounts carried on the books. If land or buildings are rented, that fact should be stated and no value given. If a part of the land or buildings is owned, the remainder being rented, that fact should be so stated and only the value of the owned property given. Do not include securities and loans representing investments in other enterprises.

**Materials.**—Cost of materials refers to the materials used during the year, which may be more or less than the materials purchased during the year. The term materials includes fuel, rent of power and heat, mill supplies, and containers, as well as materials forming a constituent part of the product. Fuel includes all fuel used, whether for heat, light, or power, or for the process of manufacture.

**Expenses.**—Under "Expenses" are included all items of expense incident to the year's business, except interest, whether on bonds or other forms of indebtedness, dividends on stock, and allowances for depreciation.

**Value of products.**—The value of products for any industry includes the total value of all products manufactured in establishments whose products of chief value fall under the industry designation. The amounts given represent the selling value at the factory of all products manufactured during the year, which may differ from the value of the products sold. Amounts received for work on materials furnished by others are included.

**Value added by manufacture.**—The value of products is not a satisfactory measure of either the absolute or the relative importance of a given industry, because only a part of this value is actually created by the manufacturing process carried on in the industry itself. Another part of it, and often by far the larger part, represents the value of the materials used, which have been produced by agriculture or mining or by other industrial establishments. For many purposes, therefore, the best measure of the importance of different classes of industry is the value created as the result of the manufacturing operations carried on within the industry. This value is obtained by deducting the cost of the materials consumed from the value of the product. The figure thus obtained is termed in the census reports "value added by manufacture."

There is a further statistical advantage which "value added" has over gross value of products. In combining the value of products for all industries the value of products produced by one establishment and used as materials in another is duplicated, and the total, therefore, gives a greatly exaggerated idea of the wealth created. No such duplication takes place in the total "value added by manufacture."

**Cost of manufacture and profits.**—Census data do not show the entire cost of manufacture, and consequently can not be used to show profits. No account has been taken of interest and depreciation. Even if the amount of profit could be determined by deducting the expenses from the value of the products the rate of profit on the investment could not properly be calculated because of the very defective character of the returns regarding capital.

**Primary power.**—The figures given for this item show the total of the primary power used by the establishments. They do not cover the power developed by motors operated by such power, the inclusion of which would evidently result in duplication.

**Location of establishments.**—The Census Bureau has classified establishments by their location in cities or classes of cities. In



interpreting these figures due consideration should be given to the fact that often establishments are located just outside the boundaries of cities, and are necessarily so classified, though locally they are looked upon as constituting a part of the manufacturing interests of the cities.

**Laundries.**—The census of 1909 was the first to include statistics of laundries. The reports are confined to establishments using

mechanical power. The data are presented separately and are not included in the general total for manufacturing industries, in order to avoid interference with comparisons with prior censuses.

**Custom gristmills.**—In order to make the statistics for 1909 comparable with those for 1904 the data for these mills have been excluded from all the tables presenting general statistics, and are given in a separate table at the end of this chapter.

**INDUSTRIES IN GENERAL.**

**General character of the territory.**—Arizona (which was a territory at the time of the Thirteenth Census but has since become a state) had an area of 112,920 square miles, and a population in 1910 of 204,354, as compared with 122,931 in 1900 and 88,243 in 1890. It ranked forty-sixth among the 49 states and territories as regards population in 1910 and forty-seventh in 1900. Arizona is very rich in mineral deposits, particularly in copper, and the gold and silver mines are also productive of much wealth. The smelting and refining of copper is by far the largest single industry in the territory and reported 81.7 per cent of the total value of products in 1909. Thirty-one per cent of the entire population of the territory resided in incorporated cities and towns having a population of 2,500 or over, as compared with 15.9 per cent in 1900.

One of the large industries in Arizona is the Portland cement mines at Roosevelt, operated in connection with

the Salt River irrigation project. The totals for this plant are not included in the statistics for the territory because the work is carried on by the United States Government. In 1909 this plant's capital was about \$220,000; the average number of employees, 44; and the value of products, \$214,132.

There are but two cities in the territory having a population of over 10,000—Tucson, with a population of 13,193, and Phoenix, with 11,134. Eliminating these two cities, only 19.1 per cent of the population resided in incorporated places of 2,500 or over. The density of population for the entire territory was 1.8 per square mile, the corresponding figure for 1900 being 1.1.

**Importance and growth of manufactures.**—The following table gives the more important figures relative to all classes of manufactures combined for the territory as returned at the censuses of 1909, 1904, and 1899, together with percentages of increase from census to census:

	NUMBER OR AMOUNT.			PER CENT OF INCREASE.	
	1909	1904	1899	1904-1909	1899-1904
Number of establishments.....	311	169	154	84.0	9.7
Persons engaged in manufactures.....	7,202	5,217	(1)	88.0	.....
Proprietors and firm members.....	261	133	(1)	96.2	.....
Salaried employees.....	500	291	205	71.8	42.0
Wage earners (average number).....	6,441	4,793	3,126	34.4	53.3
Primary horsepower.....	39,140	21,412	8,537	82.8	150.8
Capital.....	\$32,873,000	\$14,396,000	\$9,518,000	128.3	51.2
Expenses.....	41,131,000	20,244,000	10,843,000	103.2	86.7
Services.....	6,303,000	4,441,000	2,556,000	41.9	73.7
Salaries.....	798,000	472,000	269,000	69.1	75.5
Wages.....	5,505,000	3,969,000	2,287,000	38.7	73.5
Materials.....	33,600,000	14,595,000	7,877,000	130.2	85.3
Miscellaneous.....	1,228,000	1,208,000	410,000	1.6	194.6
Value of products.....	50,257,000	28,083,000	20,439,000	79.0	37.4
Value added by manufacture (value of products less cost of materials).....	16,657,000	13,488,000	12,562,000	23.5	7.4

1 Figures not available.

In 1909 the territory of Arizona had 311 manufacturing establishments, which gave employment to an average of 7,202 persons during the year and paid out \$6,303,000 in salaries and wages. Of the persons employed, 6,441 were wage earners. These establishments turned out products to the value of \$50,257,000, to produce which materials costing \$33,600,000 were utilized. The value added by manufacture was thus \$16,657,000, which figure, as explained in the Introduction; best represents the net wealth created by manufacturing operations during the year.

In general, this table brings out the fact that the manufacturing industries of Arizona as a whole

showed a much greater development during the five-year period 1904-1909 than during the period 1899-1904. While the number of establishments increased 84 per cent and the value of products 79 per cent from 1904 to 1909, the average number of wage earners increased only 34.4 per cent and the value added by manufacture 23.5 per cent. The comparatively low percentage of increase in value added by manufacture is due largely to the figures reported for the copper smelting and refining industry. The manufacturing operations in this industry frequently are so closely related to those of mining that it is not always practicable to separate mining and manufac-

turing expenses. As a result, the cost of materials used by smelters which are operated by mining companies may represent either the bare cost of mining, its market value at the smelters as though purchased from other producers, or an arbitrary cost placed upon it by the bookkeeping methods of the companies.

As pointed out in the Introduction, it would be

improper to assume that manufactures increased in volume during the period 1904-1909 to the extent indicated by the figures regarding values, since the increase shown is certainly due, in part, to the increase that has taken place in the price of commodities.

The relative importance and growth of the leading manufacturing industries of the territory are shown in the following table:

INDUSTRY.	Number of establishments.	WAGE EARNERS.		VALUE OF PRODUCTS.		VALUE ADDED BY MANUFACTURE.		PER CENT OF INCREASE. <sup>1</sup>			
		Average number.	Per cent distribution.	Amount.	Per cent distribution.	Amount.	Per cent distribution.	Value of products.		Value added by manufacture.	
								1904-1909	1899-1904	1904-1909	1899-1904
<b>All industries.....</b>	<b>311</b>	<b>6,441</b>	<b>100.0</b>	<b>\$50,257,000</b>	<b>100.0</b>	<b>\$16,657,000</b>	<b>100.0</b>	<b>79.0</b>	<b>37.4</b>	<b>23.5</b>	<b>7.4</b>
Smelting and refining, copper.....	8	3,129	48.6	41,059,000	81.7	11,817,000	70.9	80.4	31.7	15.0	-5.9
Cars and general shop construction and repairs by steam-railroad companies.....	10	1,089	16.9	2,394,000	4.8	1,093,000	6.6	80.1	40.8	5.4	118.3
Lumber and timber products.....	23	839	13.0	1,419,000	2.8	1,082,000	6.5				
Flour-mill and gristmill products.....	10	54	0.8	1,317,000	2.6	188,000	1.1	77.3	65.8	84.3	43.7
Printing and publishing.....	64	268	4.2	784,000	1.6	616,000	3.7	66.8		69.7	
Butter, cheese, and condensed milk.....	11	58	0.9	538,000	1.1	150,000	0.9	101.5	80.4	94.8	106.2
Ice, manufactured.....	23	117	1.8	501,000	1.0	357,000	2.1	93.4	94.7	77.6	120.9
Bread and other bakery products.....	40	112	1.7	478,000	1.0	204,000	1.2	95.1	124.8	80.5	91.5
All other industries.....	122	775	12.0	1,767,000	3.5	1,150,000	6.9				

<sup>1</sup> Percentages are based on figures in Table I; a minus sign (-) denotes decrease. Where the percentages are omitted, comparable figures can not be given.

It should be borne in mind, in considering this table, that the value of products in some of the industries involves a certain amount of duplication due to the use of the product of one establishment in the industry as material for another establishment.

The most important industries listed in this table, in which they are arranged in the order of the value of products, call for brief consideration.

*Smelting and refining, copper.*—At the United States census of mines and quarries in 1902 Arizona ranked third in the gross value of the copper contents of the ore mined; and in 1909, according to the United States Geological Survey, there was taken from its mines 26.6 per cent of the total copper ore reported for the United States. The importance of the industry in the territory in its connection with manufactures may perhaps be understood better when it is considered that in 1909 the smelting and refining of copper gave employment to an average of 3,129 wage earners, or 48.6 per cent of the average number for all industries combined, and the value of its products amounted to \$41,059,000, or 81.7 per cent of the total for the territory.

*Cars and general shop construction and repairs by steam-railroad companies.*—This industry represents the work done in the car shops operated by steam-railroad companies and is exclusive of minor repairs in roundhouses. The operations consist almost exclusively of repairs to the rolling stock and equipment. Employment was given to an average of 1,089 wage earners in 1909 and products to the value of \$2,394,000 were reported.

*Lumber and timber products.*—While Arizona is not important among the states and territories for its lumber products, this industry gave employment to 839 wage earners, and the value of its products amounted to \$1,419,000. The logging plants which produce the logs and bolts, as well as the mills which manufacture lumber, shingles, cooperage materials, or carry the manufacture further, producing finished lumber, sash, doors, blinds, interior finish, etc., are included under this classification.

Measured by value added by manufacture, the three leading industries held the same relative rank as when measured by value of products. Of the five other industries, printing and publishing becomes fourth in order instead of flour-mill and gristmill products, while the latter industry and butter, cheese, and condensed milk become seventh and eighth in order, and manufactured ice and bakery products go to fifth and sixth places, respectively.

In the flour-mill and gristmill industry, owing to the comparatively simple processes involved and the extent to which these processes are carried on by machinery, the value added by manufacture is not commensurate with the gross value of products or the number of establishments.

The table shows also the percentages of increase for these industries in respect to value of products and value added by manufacture. Butter, cheese, and condensed milk showed the greatest per cent of increase (101.5) from 1904 to 1909 for value of products, and also in value added by manufacture (94.8). There are some marked variations among the several

industries specified as regards the relative increases from 1899 to 1904 and from 1904 to 1909, respectively. For four industries the percentage of increase in the value of products was greater from 1904 to 1909 than from 1899 to 1904; for two industries it was smaller. The percentage of increase in value added by manufacture was greater for two industries and smaller for four.

In addition to the eight industries presented separately there are seven other industries each of which had a value of products in 1909 in excess of \$100,000. They are included in the group of "All other industries," because in some instances if they were shown separately the operations of individual establishments would be disclosed; in others, the comparable statistics for the different census years can not be presented on account of change in classification; and for others, the tables showing comparable statistics are limited to industries having in 1909 products valued at \$400,000 or over. These industries are: Beet sugar; brick and tile; copper, tin, and sheet-iron products; foundry and machine-shop products; gas, illuminating and heating; liquors, malt; and marble and stone work.

Persons engaged in manufacturing industries.—The following table shows the distribution of the number of persons engaged in manufactures, the average number of wage earners being distributed by sex and age. It should be borne in mind, however, that the sex and age classification of the average number of wage earners in this and other tables is an estimate obtained by the method described in the Introduction.

CLASS.	PERSONS ENGAGED IN MANUFACTURES.		
	Total.	Male.	Female.
All classes.....	7,202	7,119	83
Proprietors and officials.....	427	417	10
Proprietors and firm members.....	201	253	8
Salaried officers of corporations.....	51	50	1
Superintendents and managers.....	115	114	1
Clerks.....	334	299	35
Wage earners (average number).....	6,441	6,403	38
16 years of age and over.....	6,404	6,366	38
Under 16 years of age.....	37	37	.....

The average number of persons engaged in manufactures during 1909 was 7,202. Of these, 6,441 were wage earners, the remainder being divided between proprietors and officials (427) and clerks (334). Corresponding figures for separate industries will be found in Table II.

The table following shows the percentage of proprietors and officials, clerks, and wage earners, respectively, and the total number of persons employed in manufactures. It covers all industries combined and eight important industries individually.

INDUSTRY.	PERSONS ENGAGED IN MANUFACTURES.			
	Total number.	Per cent of total.		
		Proprietors and officials.	Clerks.	Wage earners (average number).
All industries.....	7,202	5.9	4.6	89.4
Bread and other bakery products.....	104	28.7	3.0	68.3
Butter, cheese, and condensed milk.....	75	13.3	9.3	77.3
Cars and general shop construction and repairs by steam-railroad companies.....	1,141	1.5	3.1	95.4
Flour-mill and gristmill products.....	75	17.3	10.7	72.0
Ice, manufactured.....	152	10.4	6.6	77.0
Lumber and timber products.....	911	5.0	2.9	92.1
Printing and publishing.....	408	17.9	16.4	65.7
Smelting and refining, copper.....	3,268	0.7	3.5	95.7
All other industries.....	1,008	17.1	6.1	76.9

Of the total number of persons engaged in all manufacturing industries, 5.9 per cent were proprietors and officials, 4.6 per cent clerks, and 89.4 per cent wage earners. In the bakery, the manufacturing of ice, and the printing and publishing industries the majority of the establishments are small, and the work is done to a large extent by the proprietors or their immediate representatives; therefore the proportion of persons engaged in these industries falling into the class of proprietors and officials is very much higher than for most other industries or all industries combined, being 28.7 per cent for bakery products, 16.4 per cent for manufactured ice, and 17.9 per cent for printing and publishing. The smallest proportion for this class (0.7 per cent) is shown for copper smelting and refining, as these establishments are large and of corporate ownership, for which proprietors are not reported.

The following table shows, in percentages, for all industries combined, the distribution of the average number of wage earners by age periods and sex, calculated in the manner described in the Introduction. It also shows, for some of the important industries separately, the percentage distribution, by age periods and sex, of wage earners as reported for December 15, or the nearest representative day. As a means of judging the importance of the several industries, the average number employed for the year is also given in each case.

INDUSTRY.	Average number. <sup>1</sup>	WAGE EARNERS.		
		Per cent of total.		
		16 years of age and over.		Under 16 years of age.
Male.	Female.			
All industries.....	6,441	98.8	0.6	0.6
Bread and other bakery products.....	112	83.4	8.0	3.6
Butter, cheese, and condensed milk.....	53	100.0	.....	.....
Cars and general shop construction and repairs by steam-railroad companies.....	1,089	99.4	.....	0.6
Flour-mill and gristmill products.....	54	100.0	.....	.....
Ice, manufactured.....	117	100.0	.....	.....
Lumber and timber products.....	839	99.6	0.1	0.2
Printing and publishing.....	268	99.9	5.2	4.8
Smelting and refining, copper.....	3,129	99.8	.....	0.2
All other industries.....	775	97.5	1.8	0.6

<sup>1</sup> For method of estimating the distribution, by sex and age periods, of the average number in all industries combined, see Introduction.

For all industries combined, 98.8 per cent of the average number of wage earners were males over 16 years of age. The proportion of females over 16 years and of persons of both sexes under that age was the same, six-tenths of 1 per cent. The largest proportion of women and children were employed in the bakery and printing and publishing industries.

In order to compare the distribution of persons engaged in manufactures in 1909 with that shown at the census of 1904, it is necessary to use the classification employed at the earlier census. (See Introduction.) The table following makes this comparison according to occupational status.

CLASS.	PERSONS ENGAGED IN MANUFACTURES.				
	1909		1904		Per cent of increase, 1904-1909.
	Number.	Per cent distribution.	Number.	Per cent distribution.	
Total.....	7,202	100.0	5,217	100.0	33.0
Proprietors and firm members.....	261	3.6	133	2.5	96.2
Salaried employees.....	500	6.9	291	5.6	71.8
Wage earners (average number)....	6,441	89.4	4,793	91.0	34.4

Comparable figures are not obtainable for 1899. It will be noticed that there was a much greater per cent of increase in the proprietors and firm members and the salaried employees than in the number of wage earners.

The following table shows the average number of wage earners, distributed according to age periods, and in the case of those 16 years of age and over according to sex, for 1909, 1904, and 1899. The averages for 1909 are estimated on the basis of the actual

number reported for a single representative day. (See Introduction.)

This table indicates that for all industries combined the proportion of children employed under 16 years of age, though smaller than it was in 1899, has increased slightly since 1904. There has not been much change in the proportion of male and female wage earners. In 1909 males 16 years of age and over formed 98.8 per cent of all wage earners, as compared with 98.9 per cent in 1904 and 98 per cent in 1899.

CLASS.	AVERAGE NUMBER OF WAGE EARNERS.					
	1909		1904		1899	
	Number.	Per cent distribution.	Number.	Per cent distribution.	Number.	Per cent distribution.
Total.....	6,441	100.0	4,793	100.0	3,126	100.0
16 years of age and over.....	6,404	99.4	4,775	99.6	3,091	98.9
Male.....	6,366	98.8	4,742	98.9	3,064	98.0
Female.....	35	0.6	33	0.7	27	0.9
Under 16 years of age.....	37	0.6	18	0.4	35	1.1

**Wage earners employed, by months.**—The following table gives the number of wage earners employed on the 15th of each month during the year 1909 for all industries combined, for the lumber industry, and for all other industries combined; it gives also the percentage which the number reported for each month is of the greatest number reported for any month. In Table II, page 636, is shown, for practically all of the important industries in the territory, the largest number and the smallest number of wage earners reported for any month. The figures are for the 15th day, or the nearest representative day, of the month.

MONTH.	WAGE EARNERS.									
	All industries.		Lumber and timber products.						All other industries.	
			Total.		In mills.		In logging operations.			
	Number.	Per cent of maximum.	Number.	Per cent of maximum.	Number.	Per cent of maximum.	Number.	Per cent of maximum.	Number.	Per cent of maximum.
January.....	6,093	88.5	556	53.3	392	55.6	164	46.1	5,537	94.5
February.....	6,024	87.5	546	52.3	402	57.0	143	40.2	5,479	93.5
March.....	6,008	87.2	547	52.4	431	61.1	116	32.6	5,456	93.1
April.....	6,048	87.8	592	56.3	460	63.8	142	39.9	5,456	93.1
May.....	6,430	93.5	846	81.1	552	78.3	294	82.6	5,593	95.5
June.....	6,860	99.7	1,018	97.6	670	95.0	348	97.3	5,851	99.9
July.....	6,888	100.0	1,043	100.0	687	97.4	356	100.0	5,845	99.3
August.....	6,845	99.4	986	94.5	705	100.0	281	78.9	5,859	100.0
September.....	6,640	96.4	997	95.6	693	98.3	304	85.4	5,643	96.3
October.....	6,634	96.3	1,016	97.4	705	100.0	311	87.4	5,618	95.9
November.....	6,482	93.7	993	95.2	696	97.3	307	86.2	5,459	93.2
December.....	6,360	92.3	935	89.6	664	94.2	271	76.1	5,425	92.6

For all industries combined, the month of lowest reported employment, March, showed 87.2 per cent as many wage earners as the month of the maximum

employment, July. Excluding the lumber industry, in which employment is more or less seasonal, the minimum is 92.6 per cent of the maximum.

**Prevailing hours of labor.**—In the table following, wage earners have been classified according to the hours of labor prevailing in the establishments in which they are employed. In making this classification, the average number of wage earners employed during the year is used, and the number employed in each establishment is classified, as a total, according to the hours prevailing in that establishment, even though some few employees work a greater or less number of hours.

It is evident from these figures that for the great majority of wage earners employed in the manufac-

turing industries of Arizona the prevailing hours of labor range from 54 to 60 a week, or from 9 to 10 a day. Only 10.5 per cent of the total were employed in establishments working less than 9 hours a day and 6.6 per cent were employed in establishments working more than 10 hours a day. This condition is due chiefly to the fact that 4,709, or 73.1 per cent of the total average number of wage earners and 88.1 per cent of those employed from 54 to 60 hours, were reported by steam-railroad repair shops, the copper smelters and refineries, and the lumber industry.

INDUSTRY.	AVERAGE NUMBER OF WAGE EARNERS IN ESTABLISHMENTS GROUPED ACCORDING TO PREVAILING HOURS OF WORK PER WEEK.								
	Total.	48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.	Between 60 and 72.	72.	Over 72.
All industries.....	6,441	579	95	749	3,441	1,155	260	12	150
Bread and other bakery products.....	112	14	.....	22	.....	28	29	3	16
Butter, cheese, and condensed milk.....	58	2	3	.....	6	1	46	.....	.....
Cars and general shop construction and repairs by steam-railroad companies....	1,089	133	92	528	13	211	112	.....	.....
Flour-mill and gristmill products.....	54	9	.....	16	.....	21	5	3	.....
Ice, manufactured.....	117	2	.....	6	16	1	47	6	39
Lumber and timber products.....	839	11	.....	7	.....	821	.....	.....	.....
Printing and publishing.....	268	212	.....	55	1	.....	.....	.....	.....
Smelting and refining, copper.....	3,129	.....	.....	.....	3,129	.....	.....	.....	.....
All other industries.....	776	196	.....	116	276	72	21	.....	95

**Location of establishments.**—The next table shows to what extent manufacturing in Arizona is centralized in the two cities of Phoenix and Tucson, the only cities having a population of 10,000 or over. (See Introduction.)

ITEM.	Total.	LOCATION OF ESTABLISHMENTS.		PER CENT OF TOTAL.	
		In cities with population of 10,000 and over.	Outside districts.	In cities with population of 10,000 and over.	Outside districts.
Population.....	204,354	24,327	180,027	11.9	88.1
Number of establishments.....	311	92	219	29.6	70.4
Average number of wage earners.....	6,441	859	5,582	13.3	86.7
Value of products.....	\$50,256,694	\$3,593,702	\$46,752,932	7.0	93.0
Value added by manufacture.....	16,656,454	1,370,224	15,286,230	8.2	91.8

In 1909 only 7 per cent of the total value of products was reported from these two cities, and of the total number of wage earners but 13.3 per cent were employed in them.

**Character of ownership.**—The first table on page 630 shows conditions in respect to the ownership, or legal organization, of manufacturing enterprises. For all industries combined comparative figures are given covering the censuses of 1909 and 1904. Comparative data for 1899 are not available. Figures for 1909 only are presented for several important industries. In order to avoid disclosing the operations of individual concerns it is necessary to omit several important industries from this table and the one following.

The most important distinction shown is that between corporate and all other forms of ownership. For all industries combined, 39.2 per cent of the total number of establishments were in 1909 under corporate ownership, as against 60.7 per cent under all other forms. The corresponding figures for 1904 were 42 per cent and 58 per cent, respectively. Five years is too short a period to reveal any pronounced change in character of ownership. For all industries combined, as measured by value of products and value added by manufacture, corporations lost ground, relatively, as compared with individuals and firms.

last two censuses, while for certain important industries figures are given for 1909 only.

INDUSTRY AND CHARACTER OF OWNERSHIP.	Number of establishments.	Average number of wage earners.	Value of products.	Value added by manufacture.
<b>ALL INDUSTRIES:</b>				
1909.....	311	6,441	\$50,256,694	\$16,656,454
1904.....	169	4,793	28,088,192	13,488,135
<b>Individual:</b>				
1909.....	141	306	1,055,203	548,537
1904.....	70	182	581,552	326,508
<b>Firm:</b>				
1909.....	48	388	895,816	645,625
1904.....	28	114	365,856	287,934
<b>Corporation:</b>				
1909 <sup>1</sup> .....	122	5,747	45,305,675	15,462,292
1904.....	71	4,497	27,135,784	12,923,693
<b>Per cent of total:</b>				
1909.....	100.0	100.0	100.0	100.0
1904.....	100.0	100.0	100.0	100.0
<b>Individual:</b>				
1909.....	45.3	4.8	2.1	3.3
1904.....	41.4	3.8	2.1	2.4
<b>Firm:</b>				
1909.....	15.4	6.0	1.8	3.9
1904.....	16.6	2.4	1.3	1.8
<b>Corporation:</b>				
1909 <sup>1</sup> .....	39.2	89.2	96.1	92.8
1904.....	42.0	93.8	96.6	95.8
<b>Bread and other bakery products, 1909</b>	40	112	\$478,289	\$203,800
Individual.....	33	94	414,184	171,850
Firm <sup>2</sup> .....	7	18	64,105	31,950
<b>Per cent of total:</b>				
Individual.....	82.5	83.9	86.6	84.3
Firm <sup>2</sup> .....	17.5	16.1	13.4	15.7
<b>Flour-mill and gristmill products, 1909</b>	10	54	\$1,316,757	\$188,158
Individual <sup>3</sup> .....	3	6	131,058	26,008
Corporation <sup>1</sup> .....	7	48	1,185,699	162,150
<b>Per cent of total:</b>				
Individual <sup>3</sup> .....	30.0	11.1	10.0	13.8
Corporation <sup>1</sup> .....	70.0	88.9	90.0	86.2
<b>Ice, manufactured, 1909</b>	23	117	\$501,228	\$357,642
Individual.....	3	6	24,636	26,443
Firm.....	3	13	50,115	30,291
Corporation.....	17	98	416,477	297,908
<b>Per cent of total:</b>				
Individual.....	13.0	5.1	6.9	8.2
Firm.....	13.0	11.1	10.0	8.5
Corporation.....	73.9	83.8	83.1	83.3
<b>Lumber and timber products, 1909</b>	23	839	\$1,419,114	\$1,082,074
Individual.....	10	15	57,144	28,939
Firm.....	3	5	23,144	10,158
Corporation <sup>1</sup> .....	10	819	1,338,826	1,042,977
<b>Per cent of total:</b>				
Individual.....	43.5	1.8	4.0	2.7
Firm.....	13.0	0.6	1.6	0.9
Corporation <sup>1</sup> .....	43.5	97.6	94.3	96.4
<b>Printing and publishing, 1909</b>	64	268	\$784,487	\$616,420
Individual.....	35	74	149,209	120,733
Firm.....	8	40	192,944	166,860
Corporation.....	21	154	442,334	328,827
<b>Per cent of total:</b>				
Individual.....	64.7	27.6	19.0	19.6
Firm.....	12.5	14.9	24.6	27.1
Corporation.....	32.8	57.5	56.4	53.3

<sup>1</sup> Includes the group "Other," to avoid disclosure of individual operations.  
<sup>2</sup> Includes the group "Corporation."  
<sup>3</sup> Includes the group "Firm."

**Size of establishment.**—The tendency for manufacturing to become concentrated in large establishments, or the reverse, is a matter of interest from the standpoint of industrial organization. In order to throw some light upon it the following table groups the establishments according to the value of their products. The table also shows the average size of establishments for all industries combined and for important industries separately, as measured by number of wage earners, value of products, and value added by manufacture. The totals for all industries are shown for the

INDUSTRY AND VALUE OF PRODUCTS.	Number of establishments.	Average number of wage earners.	Value of products.	Value added by manufacture.
<b>ALL INDUSTRIES:</b>				
1909.....	311	6,441	\$50,256,694	\$16,656,454
1904.....	169	4,793	28,088,192	13,488,135
<b>Less than \$5,000:</b>				
1909.....	117	129	273,045	186,124
1904.....	53	55	131,563	101,003
<b>\$5,000 and less than \$20,000:</b>				
1909.....	113	369	1,139,895	689,982
1904.....	65	252	702,212	461,662
<b>\$20,000 and less than \$100,000:</b>				
1909.....	55	675	2,519,424	1,424,581
1904.....	34	499	1,658,579	843,931
<b>\$100,000 and less than \$1,000,000:</b>				
1909.....	17	1,712	4,047,429	2,099,212
1904.....	10	1,638	2,828,807	1,806,350
<b>\$1,000,000 and over:</b>				
1909.....	9	3,550	42,276,901	12,256,655
1904.....	7	2,349	22,761,981	10,275,199
<b>Per cent of total:</b>				
1909.....	100.0	100.0	100.0	100.0
1904.....	100.0	100.0	100.0	100.0
<b>Less than \$5,000:</b>				
1909.....	37.6	2.0	0.5	1.1
1904.....	31.4	1.1	0.5	0.7
<b>\$5,000 and less than \$20,000:</b>				
1909.....	36.3	5.7	2.3	4.1
1904.....	38.5	5.3	2.5	3.4
<b>\$20,000 and less than \$100,000:</b>				
1909.....	17.7	10.5	5.0	8.6
1904.....	20.1	10.4	5.9	6.3
<b>\$100,000 and less than \$1,000,000:</b>				
1909.....	5.5	26.6	8.1	12.6
1904.....	5.9	34.2	10.1	13.4
<b>\$1,000,000 and over:</b>				
1909.....	2.9	55.2	84.1	73.6
1904.....	4.1	49.0	81.1	76.2
<b>Average per establishment:</b>				
1909.....	21	\$161,597	\$53,558	
1904.....	28	100,173	79,811	
<b>Bread and other bakery products, 1909</b>	40	112	\$478,289	\$203,800
Less than \$5,000.....	11	3	21,972	7,997
\$5,000 and less than \$20,000.....	23	63	240,410	101,026
\$20,000 and less than \$100,000.....	6	56	215,907	94,777
<b>Per cent of total:</b>				
Less than \$5,000.....	27.5	2.7	4.6	3.9
\$5,000 and less than \$20,000.....	57.5	47.3	50.3	49.6
\$20,000 and less than \$100,000.....	15.0	50.0	45.1	46.5
<b>Average per establishment:</b>			\$11,957	\$5,095
<b>Flour-mill and gristmill products, 1909</b>	10	54	\$1,316,757	\$188,158
\$20,000 and less than \$100,000.....	5	12	210,911	39,487
\$100,000 and less than \$1,000,000.....	5	42	1,105,846	148,671
<b>Per cent of total:</b>				
\$20,000 and less than \$100,000.....	50.0	22.2	16.0	21.0
\$100,000 and less than \$1,000,000.....	50.0	77.8	84.0	79.0
<b>Average per establishment:</b>			\$131,676	\$18,816
<b>Ice, manufactured, 1909</b>	23	117	\$501,228	\$357,642
Less than \$5,000.....	3	4	10,984	6,286
\$5,000 and less than \$20,000.....	10	28	105,204	74,106
\$20,000 and less than \$100,000.....	10	35	385,040	277,250
<b>Per cent of total:</b>				
Less than \$5,000.....	13.0	3.4	2.2	1.8
\$5,000 and less than \$20,000.....	43.5	23.9	21.0	20.7
\$20,000 and less than \$100,000.....	43.5	72.6	76.8	77.5
<b>Average per establishment:</b>			\$21,793	\$15,550
<b>Lumber and timber products, 1909</b>	23	839	\$1,419,114	\$1,082,074
Less than \$5,000.....	10	14	19,054	13,747
\$5,000 and less than \$20,000.....	7	19	86,455	43,753
\$100,000 and less than \$1,000,000 <sup>2</sup> .....	6	808	1,313,605	1,024,569
<b>Per cent of total:</b>				
Less than \$5,000.....	43.5	1.7	1.3	1.3
\$5,000 and less than \$20,000.....	30.4	2.3	6.1	4.0
\$100,000 and less than \$1,000,000 <sup>2</sup> .....	26.1	96.1	92.6	94.7
<b>Average per establishment:</b>			\$61,701	\$47,047
<b>Printing and publishing, 1909</b>	64	268	\$784,487	\$616,420
Less than \$5,000.....	30	42	74,431	53,045
\$5,000 and less than \$20,000.....	26	108	263,424	210,516
\$20,000 and less than \$100,000.....	8	118	440,632	342,866
<b>Per cent of total:</b>				
Less than \$5,000.....	46.9	15.7	9.5	10.2
\$5,000 and less than \$20,000.....	40.6	40.3	33.6	34.2
\$20,000 and less than \$100,000.....	12.5	44.0	56.9	55.6
<b>Average per establishment:</b>			\$12,253	\$9,632

<sup>1</sup> Includes the group "Less than \$5,000."  
<sup>2</sup> Includes the group "\$20,000 and less than \$100,000."

This table shows that in 1909, of the 311 establishments, only 9, or 2.9 per cent, had a value of product exceeding \$1,000,000. Of this number, 8 were establishments engaged in copper smelting and refining. These establishments, however, in that year had an average of 3,556 wage earners, or 55.2 per cent of the total number in all establishments reported, 84.1 per cent of the total value of products, and 73.6 per cent of the total value added by manufacture.

On the other hand, small establishments—that is, those having a value of product of less than \$5,000—constituted a very considerable proportion (37.6 per cent) of the total number of establishments, but the value of their products amounted to only five-tenths of 1 per cent of the total.

The five years from 1904 to 1909 was rather too short a period to show extensive changes, and no clear

tendencies can be seen as to the relative importance of the classes.

The table shows, however, that when the size of establishment is measured by value of products the flour-mill and gristmill industry is conducted chiefly in large establishments, while the bakery, printing and publishing, manufactured ice, and lumber industries are conducted in smaller establishments.

In some respects, and especially from the standpoint of conditions under which persons engaged in manufactures work, the best classification of establishments to bring out the feature of size is a classification according to the average number of wage earners employed. The next table shows such a classification for all industries combined and for eight important industries, and gives not only the number of establishments falling into each group but also the average number of wage earners employed.

INDUSTRY.	Total.	ESTABLISHMENTS EMPLOYING—							
		No wage earners.	1 to 5 wage earners.	6 to 20 wage earners.	21 to 50 wage earners.	51 to 100 wage earners.	101 to 250 wage earners.	251 to 500 wage earners.	501 to 1,000 wage earners.
NUMBER OF ESTABLISHMENTS.									
All industries.....	311	36	201	44	10	6	6	6	2
Bread and other bakery products.....	40	7	20	4					
Butter, cheese, and condensed milk.....	11		7	3	1				
Cars and general shop construction and repairs by steam-railroad companies.....	10			2	2	3	2	1	
Flour-mill and gristmill products.....	10			6	4				
Ice, manufactured.....	23		18	4	1				
Lumber and timber products.....	23	3	14	1	1	2		2	
Printing and publishing.....	64	9	41	13	1				
Smelting and refining, copper.....	8						3	3	2
All other industries.....	122	17	86	13	4	1	1		
AVERAGE NUMBER OF WAGE EARNERS.									
All industries.....	6,441		484	476	302	484	1,049	2,123	1,543
Bread and other bakery products.....	112		64	48					
Butter, cheese, and condensed milk.....	58		9	22	27				
Cars and general shop construction and repairs by steam-railroad companies.....	1,089			31	81	280	270	427	
Flour-mill and gristmill products.....	54		16	38					
Ice, manufactured.....	117		54	40	23				
Lumber and timber products.....	839		33	13	30	117		646	
Printing and publishing.....	268		106	137	25				
Smelting and refining, copper.....	3,129						536	1,050	1,543
All other industries.....	775		182	147	116	87	243		
PER CENT OF AVERAGE NUMBER OF WAGE EARNERS.									
All industries.....	100.0		7.2	7.4	4.7	7.5	16.3	33.0	24.0
Bread and other bakery products.....	100.0		57.1	42.9					
Butter, cheese, and condensed milk.....	100.0		15.5	37.9	46.6				
Cars and general shop construction and repairs by steam-railroad companies.....	100.0			2.8	7.4	25.7	24.8	39.2	
Flour-mill and gristmill products.....	100.0		29.6	70.4					
Ice, manufactured.....	100.0		46.2	34.2	19.7				
Lumber and timber products.....	100.0		3.9	1.5	3.6	13.9		77.0	
Printing and publishing.....	100.0		39.6	51.1	9.3				
Smelting and refining, copper.....	100.0						17.1	33.6	49.3
All other industries.....	100.0		23.5	19.0	15.0	11.2	31.4		

The per cent distribution of the number of establishments is not shown in this table; of the 311 establishments reported for all industries, 11.6 per cent employed no wage earners; 64.6 per cent, 1 to 5; and 14.1 per cent, 6 to 20. The most numerous single group consists of the 201 establishments employing from 1 to 5 wage earners, and the next of the 44 establish-

ments employing from 6 to 20 wage earners. There were 8 establishments that employed over 250 wage earners, and 2 that employed over 500.

Of the total number of wage earners, 57 per cent were in establishments employing over 250 wage earners. The single group having the largest number of employees was the group employing from 251 to



500 wage earners. This group employed 2,123, or 33 per cent of the total. Two of the individual industries listed in this table but not in the preceding one, namely, cars and general shop construction and repairs by steam-railroad companies and copper smelting and refining, are industries in which large establishments do most of the business, as appears from the classification according to the number of wage earners.

**Expenses.**—As stated in the Introduction, the census does not purport to furnish figures that can be used for determining the cost of manufacture and profits. Facts of interest can, however, be brought out concerning the relative importance of the different classes of expenses going to make up the total.

The following table shows, in percentages, the distribution of expenses among the classes indicated for all industries combined and for certain important industries separately. The figures on which the percentages are based appear in Table II.

INDUSTRY.	PER CENT OF TOTAL EXPENSES REPORTED.			
	Salaries.	Wages.	Materials.	Miscellaneous expenses.
All industries.....	1.9	13.4	81.7	3.0
Bread and other bakery products.....	1.4	23.7	68.1	6.7
Butter, cheese, and condensed milk.....	4.3	10.1	76.7	8.9
Cars and general shop construction and repairs by steam-railroad companies.....	3.2	40.8	54.3	1.7
Flour-mill and gristmill products.....	2.1	3.4	91.1	3.4
Ice, manufactured.....	7.0	31.8	40.9	19.3
Lumber and timber products.....	7.9	47.5	25.0	19.6
Printing and publishing.....	16.0	35.7	25.8	22.5
Smelting and refining, copper.....	0.9	8.5	89.3	1.3
All other industries.....	8.0	39.1	41.5	11.4

This table shows that, for all industries combined, 81.7 per cent of the total expenses were incurred for materials, 15.3 per cent for services—that is, salaries and wages—and but 3 per cent for other purposes. As would be expected, these proportions vary greatly in the different industries, the expense for materials, for example, falling from 91.1 per cent in the flour-mill and gristmill industry to 25 per cent and 25.8 per cent in the lumber and timber products and printing and publishing industries, respectively.

**Engines and power.**—The next table shows for all industries combined the number of engines or other motors, according to their character, employed in generating power (including electric motors operated by purchased current), and their total horsepower at the censuses of 1909, 1904, and 1899. It also shows separately the number and horsepower of electric motors, including those operated by current generated in the manufacturing establishments.

The table indicates that the increase in owned primary power from 1904 to 1909 was in power generated by steam engines, since both water power and

power generated by gas engines showed a decrease. However, a slight increase in the number of gas engines is shown, there being 31 such engines in 1909, as compared with 28 in 1904; although the total horsepower developed by them decreased from 1,392 in 1904 to 1,285 in 1909. The figures also show that the practice of renting electric power is on the increase, 8.5 per cent of the total power being rented electric in 1909, as compared with eight-tenths of 1 per cent in 1904, and four-tenths of 1 per cent in 1899. The use of electric motors for the purpose of applying the power generated within the establishments is also shown to be increasing rapidly, the horsepower of such motors increasing from 496 in 1899 to 4,656 in 1904 and to 11,786 in 1909.

POWER.	NUMBER OF ENGINES OR MOTORS.			HORSEPOWER.			PER CENT DISTRIBUTION OF HORSEPOWER.		
	1909	1904	1899 <sup>1</sup>	1909	1904	1899 <sup>1</sup>	1909	1904	1899
<b>Primary power, total.....</b>	<b>445</b>	<b>184</b>	<b>158</b>	<b>39,140</b>	<b>21,412</b>	<b>8,537</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Owned.....	209	184	158	35,626	20,907	8,499	91.0	98.1	99.6
Steam.....	174	148	131	34,193	18,828	7,653	87.4	87.9	89.6
Gas.....	31	28	19	1,285	1,392	371	3.3	6.5	4.3
Water wheels.....	4	8	8	129	267	400	0.3	1.2	4.7
Other.....				19	510	75	( <sup>2</sup> )	2.4	0.9
Rented.....	236	( <sup>2</sup> )	( <sup>2</sup> )	3,514	415	38	9.0	1.9	0.4
Electric.....	236	( <sup>2</sup> )	( <sup>2</sup> )	3,314	165	38	8.5	0.8	0.4
Other.....				200	250		0.5	1.2	
<b>Electric motors.....</b>	<b>496</b>	<b>120</b>	<b>30</b>	<b>15,100</b>	<b>4,821</b>	<b>534</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Run by current generated by establishment.....	260	120	30	11,786	4,656	496	78.1	96.6	92.9
Run by rented power.....	236	( <sup>2</sup> )	( <sup>2</sup> )	3,314	165	38	21.9	3.4	7.1

<sup>1</sup>Includes the neighborhood industries and hand trades, omitted in 1904 and 1909.  
<sup>2</sup>Less than one-tenth of 1 per cent.      <sup>3</sup>Not reported.

**Fuel.**—Closely related to the question of kind of power employed is that of fuel used in generating this power, or otherwise as material in the manufacturing processes. The following table shows the quantity of each kind of fuel used in 1909:

INDUSTRY.	Anthracite coal (tons).	Bituminous coal (tons).	Coke (tons).	Wood (cords).	Oil, including gasoline (barrels).	Gas (1,000 feet).
All industries.....	7,561	60,256	463,233	14,558	610,594	1,865
Bread and other bakery products.....		197	10	1,426	29	120
Butter, cheese, and condensed milk.....		107		112	7,113	
Cars and general shop construction and repairs by steam-railroad companies.....		11,114	48		50,114	
Flour-mill and gristmill products.....		790		170	2,349	
Ice, manufactured.....		5,843		99	41,800	
Lumber and timber products.....		127			4,089	
Printing and publishing.....		55		54	41	1,000
Smelting and refining, copper.....		7,459	463,016	1,494	420,148	
All other industries.....	102	1,475	159	11,203	84,911	745

NOTE.—In addition, there were 20 tons of other varieties of fuel reported.

SUPPLEMENTARY DATA REGARDING IMPORTANT INDUSTRIES.

(With statistics for laundries and custom gristmills.)

For certain industries the Census Bureau collects, by means of special schedules, details regarding the quantity and value of materials and products which do not appear on the general schedules. Data for three important industries in Arizona are here presented.

**Flour-mill and gristmill products.**—This industry has increased 77.3 per cent in value of products since 1904, the total value for 1909 being \$1,316,757.

The tabular statement following gives the quantity and value of products for the last two census years:

PRODUCT.	QUANTITY.		VALUE.	
	1909	1904	1909	1904
<b>All products</b> .....			<b>\$1,316,757</b>	<b>\$743,124</b>
Wheat flour:				
White.....barrels	79,275	72,459	528,648	419,299
Graham.....barrels	251	439	1,596	2,312
Corn meal.....barrels	1,902	913	9,121	4,225
Barley meal.....pounds	8,892,033	8,773,000	150,570	136,846
Feed.....tons	14,550	3,380	507,506	102,012
Offal.....tons	3,586	3,435	105,159	77,930
All other products.....			14,187	

Measured by value of products white flour and feed together constituted 78.7 per cent of the total value of products in 1909, the proportion for white flour alone being 40.1 per cent. Barley meal constituted 11.4 per cent of the total value of products and offal 8 per cent. While white flour increased only 9.4 per cent in quantity from 1904 to 1909, it increased 26.1 per cent in value.

Feed shows the largest rate of increase both in quantity and in value, 330.5 per cent and 397.5 per cent, respectively. Graham flour was the only item showing a decrease from 1904 to 1909.

**Lumber and timber products.**—This industry was the second largest in the territory as regards capital invested, and third in average number of wage earners and value of products.

The following is a statement of the quantity of products of the sawmills, by classes, reported at the censuses of 1909 and 1899:

		QUANTITY.	
		1909	1899
Rough lumber.....	M feet b. m.	62,731	36,182
Lath.....	thousands..	7,816	2,040
Shingles.....	thousands..	583	350

The rough lumber sawed in 1909 amounted to 62,731 M feet, as compared with 36,182 M feet in 1899, a gain of 26,549 M feet, or 73.4 per cent. The lath output increased, in 1909, 5,776,000 over 1899, a gain of 283.1 per cent; and as reported for the same years shingles gained 233,000, or 66.6 per cent.

**Printing and publishing.**—The progress of the newspaper and periodical branch of the industry is indi-

cated in the following table, which shows the number and aggregate circulation per issue of the different classes of publications for the years 1909, 1904, and 1899:

PERIOD OF ISSUE.	NUMBER OF PUBLICATIONS.			AGGREGATE CIRCULATION PER ISSUE.		
	1909	1904	1899	1909	1904	1899
Total.....	73	60	47	79,308	66,589	34,054
Daily.....	19	16	10	33,328	22,354	11,456
Sunday.....	9	4	4	17,400	10,273	(1)
Weekly.....	41	38	32	24,675	30,286	22,392
All other classes.....	4	2	1	4,405	3,676	206

<sup>1</sup> Included in circulation of dailies.

The total number of publications and total circulation increased during the decade and during each of the five-year periods. The gain in number during the earlier five-year period, 1899–1904, was 13, or 27.7 per cent, and that in circulation 32,535, or 95.5 per cent. During the later five-year period, 1904–1909, the number increased 13, or 21.7 per cent, but the circulation only increased 13,219, or 19.9 per cent. The class of publications having the largest circulation in 1909 was the dailies, while in 1904 and in 1899 the weeklies had the largest circulation. The dailies also show the most pronounced absolute increase in circulation from 1904 to 1909, while the circulation of the weeklies decreased during the same period. Of the 19 daily newspapers published in 1909, 8, with an aggregate circulation of 17,840, were morning papers. In 1909 all of the publications were in the English language, except 6 weeklies, with an aggregate circulation of 3,000, which were printed in Spanish.

**Laundries.**—Statistics for steam laundries are not included in the general tables. In 1909 there were 13 such establishments in the territory of Arizona, 3 of which were in Phoenix and 2 in Tucson.

The most common form of organization was the individual, with seven establishments, the general partnerships having two and the incorporated companies four establishments. Five establishments had receipts for the year's business of \$5,000 but less than \$20,000; eight, of \$20,000 but less than \$100,000.

The following statement summarizes the statistics:

Number of establishments.....	13
Persons engaged in the industry.....	309
Proprietors and firm members.....	11
Salaried employees.....	15
Wage earners (average number).....	283
Primary horsepower.....	298
Capital.....	\$193,351
Expenses.....	303,206
Services.....	169,747
Materials.....	74,153
Miscellaneous.....	59,306
Amount received for work done.....	369,232

The number of wage earners employed each month and the per cent which this number represented of the greatest number employed in any month were as follows:

MONTH.	WAGE EARNERS.		MONTH.	WAGE EARNERS.	
	Number.	Per cent of maximum.		Number.	Per cent of maximum.
January.....	280	96.2	July.....	280	96.2
February.....	290	99.7	August.....	260	91.4
March.....	286	98.3	September.....	268	92.1
April.....	291	100.0	October.....	283	97.3
May.....	290	99.7	November.....	285	97.9
June.....	282	96.9	December.....	291	100.0

The different kinds of engines, their number, and the horsepower used in 1909 are shown in the following tabular statement:

KIND.	Number of engines or motors.	Horsepower.
Primary power, total.....		298
Owned—Steam.....	12	283
Rented—Electric.....	2	15

The kind and amount of fuel used are shown in the following statement:

KIND.	Unit.	Quantity.
Anthracite coal.....	Tons.....	620
Bituminous coal.....	Tons.....	1,357
Wood.....	Cords.....	1,282
Oil.....	Barrels.....	3,782
Gas.....	1,000 feet.....	1,000

Custom gristmills.—Statistics for custom gristmills are not included in the general tables, but are presented in the following summary:

Number of establishments.....	4
Persons engaged in the industry.....	8
Proprietors and firm members.....	5
Wage earners (average number).....	3
Primary horsepower.....	108
Capital.....	\$22,400
Expenses.....	41,018
Services.....	1,660
Materials.....	138,879
Miscellaneous.....	479
Value of products.....	146,159

<sup>1</sup> Includes estimate of all grain ground.

# STATISTICS FOR MANUFACTURES.

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**TABLE I.—COMPARATIVE SUMMARY FOR 1909, 1904, AND 1899.  
THE STATE—ALL INDUSTRIES COMBINED AND SELECTED INDUSTRIES.**

INDUSTRY AND CITY.	Census.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY.					Primary horse-power.	Capital.	Salaries.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
			Total.	Proprietors and firm members.	Salaried employees.	Wage earners (average number).								
<b>TERRITORY—All industries</b> .....	1909	811	7,202	261	500	6,441	39,140	\$32,873	\$798	\$5,505	\$33,600	\$50,257	\$16,657	
	1904	169	5,217	133	291	4,793	21,413	14,398	472	3,989	14,595	28,083	18,488	
	1899	154	.....	.....	205	3,126	8,537	9,513	269	2,287	7,877	20,439	12,662	
<b>Bread and other bakery products</b> .....	1909	40	164	45	7	112	19	133	6	96	274	478	204	
	1904	16	91	24	1	66	.....	85	(1)	53	132	245	113	
	1899	8	47	10	2	35	.....	34	2	23	50	109	59	
<b>Butter, cheese, and condensed milk</b> .....	1909	11	75	1	16	58	350	240	22	51	388	538	150	
	1904	5	39	2	7	30	263	180	7	22	190	267	77	
	1899	7	33	4	14	15	101	73	6	9	122	148	26	
<b>Cars and general shop construction and repairs by steam-railroad companies.</b>	1909	10	1,141	.....	62	1,089	892	677	77	976	1,301	2,394	1,093	
	1904	7	1,198	.....	39	1,159	481	523	54	961	292	1,329	1,037	
	1899	7	590	.....	14	576	215	430	21	437	412	887	475	
<b>Four-mill and gristmill products</b> .....	1909	10	75	4	17	54	784	674	26	42	1,129	1,317	188	
	1904	9	50	.....	14	36	465	404	18	24	641	743	102	
	1899	9	.....	.....	11	36	627	210	9	20	377	448	71	
<b>Ice, manufactured</b> .....	1909	23	152	9	26	117	2,569	1,080	28	112	144	501	357	
	1904	13	97	12	13	72	1,190	420	12	55	58	259	201	
	1899	9	67	11	12	44	609	229	10	31	42	133	91	
<b>Lumber and timber products</b> .....	1909	23	911	30	42	839	2,953	2,342	106	639	337	1,419	1,082	
	1904	19	576	8	26	542	2,338	1,469	56	413	208	1,037	829	
	1899	17	.....	.....	23	381	890	632	34	267	192	619	427	
<b>Printing and publishing</b> .....	1909	64	408	51	89	268	221	680	104	232	168	784	616	
	1904	50	269	37	43	180	94	397	51	161	107	470	363	
	1899	32	182	28	15	139	70	187	18	74	46	237	191	
<b>Smelting and refining, copper</b> .....	1909	8	3,268	.....	139	3,129	29,042	21,487	310	2,776	29,242	41,059	11,817	
	1904	7	2,456	.....	107	2,349	16,649	9,341	213	2,060	12,487	22,762	10,275	
	1899	9	1,728	.....	80	1,648	5,731	7,266	141	1,277	6,371	17,387	10,916	
<b>All other industries</b> .....	1909	122	1,008	121	112	776	2,310	5,560	119	581	617	1,767	1,150	
	1904	53	441	50	41	350	932	1,577	56	230	439	971	491	
	1899	56	.....	.....	34	252	.....	457	28	149	265	571	306	

**CITIES OF 10,000 TO 50,000 INHABITANTS—ALL INDUSTRIES COMBINED.**

<b>Phoenix</b> .....	1909	57	432	58	70	304	669	\$1,255	\$69	\$242	\$864	\$1,467	\$603
<b>Tucson</b> .....	1909	35	625	28	42	555	1,403	902	57	512	1,270	2,037	767

<sup>1</sup> Less than \$500.

<sup>2</sup> Excluding statistics for two establishments, to avoid disclosure of individual operations.

TABLE II.—DETAIL STATEMENT FOR

INDUSTRY.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY.										WAGE EARNERS—NUMBER DEC. 15, OR NEAREST REPRESENTATIVE DAY.					Primary horse-power.
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks.		Wage earners.			Total.	16 and over.		Under 16.				
					Male.	Female.	Average number.	Number.			Male.	Female.	Male.	Female.			
								Maximum month.	Minimum month.								
1 All industries.....	311	7,209	261	166	299	35	6,441	Jy 6,888	Mh 6,003	(1)	(1)	(1)	(1)	(1)	39,140		
2 Artificial stone.....	14	48	10	4	.....	.....	25	No 36	Ja <sup>2</sup> 17	42	42	.....	.....	.....	2		
3 Bread and other bakery products.....	40	164	45	2	.....	4	112	De 115	Ja <sup>2</sup> 112	116	103	9	4	.....	19		
4 Brick and tile.....	21	126	28	.....	.....	.....	98	Oc 141	Au 59	178	178	.....	.....	.....	100		
5 Butter, cheese, and condensed milk.....	11	75	1	9	4	3	58	Je 67	Ja 52	56	56	.....	.....	.....	350		
6 Cars and general shop construction and repairs by steam-railroad companies.	10	1,141	.....	17	34	1	1,089	Au 1,140	Fe 988	1,100	1,094	.....	0	.....	892		
7 Cars and general shop construction and repairs by street-railroad companies.	4	10	.....	.....	.....	.....	10	Ja <sup>2</sup> 11	Ap <sup>2</sup> 9	10	10	.....	.....	.....	5		
8 Confectionery.....	3	21	3	1	4	4	9	Se <sup>2</sup> 10	Ja <sup>2</sup> 8	14	11	3	.....	.....	7		
9 Copper, tin, and sheet-iron products.....	7	43	8	.....	.....	1	34	No <sup>2</sup> 37	Jy <sup>2</sup> 30	37	37	.....	.....	.....	4		
10 Flour-mill and gristmill products.....	10	75	4	9	.....	1	54	Au 62	My <sup>2</sup> 50	53	53	.....	.....	.....	784		
11 Foundry and machine-shop products.....	10	80	7	6	3	.....	64	Ja 78	Au <sup>2</sup> 59	65	65	.....	.....	.....	136		
12 Gas, illuminating and heating.....	8	33	.....	6	5	2	20	Ja <sup>2</sup> 20	Fe <sup>2</sup> 19	20	20	.....	.....	.....	163		
13 Ice, manufactured.....	23	152	9	16	9	1	117	Jy 165	Ja 76	100	100	.....	.....	.....	2,569		
14 Leather goods.....	4	21	5	1	.....	.....	15	Jy <sup>2</sup> 13	Fe <sup>2</sup> 12	18	18	.....	.....	.....	2		
15 Lumber and timber products.....	23	911	30	16	20	6	839	Jy 1,043	Fe 545	997	994	1	2	.....	2,053		
16 Marble and stone work.....	4	275	8	2	18	.....	247	Mh 200	De 213	229	229	.....	.....	.....	1,300		
17 Printing and publishing.....	64	408	51	22	58	9	268	De 287	Mh 259	285	256	15	14	.....	221		
18 Smelting and refining, copper.....	8	3,268	.....	24	112	3	3,129	Fe 3,252	No 3,018	3,057	3,050	.....	7	.....	29,042		
19 Tobacco manufactures.....	11	58	10	2	7	.....	39	Ja 47	Jy 4	45	35	10	.....	.....	.....		
20 All other industries <sup>3</sup> .....	36	293	33	29	17	.....	214	.....	.....	.....	.....	.....	.....	.....	601		

<sup>1</sup> No figures given for reasons explained in the Introduction.  
<sup>2</sup> Same number reported for one or more other months.  
<sup>3</sup> All other industries embrace—

Beet sugar.....	1	Electrical machinery, apparatus, and supplies.....	1	Furniture and refrigerators.....	1
Carriages and wagons and materials.....	1	Fancy articles, not elsewhere specified.....	1	Gas and electric fixtures and lamps and reflectors..	1
Canning and preserving.....	2	Food preparations.....	1	Hand stamps and stencils and brands.....	1

TABLE III.—DETAIL STATEMENT FOR CITIES OF 50,000 INHABITANTS OR MORE, BY INDUSTRIES, CITIES OF 10,000 TO 50,000 INHABITANTS—ALL INDUSTRIES COMBINED.

CITY.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY.										WAGE EARNERS—NUMBER DEC. 15, OR NEAREST REPRESENTATIVE DAY.					Primary horse-power.
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks.		Wage earners (average number).			Total.	16 and over.		Under 16.				
					Male.	Female.	Total.	16 and over.			Under 16.	Male.	Female.	Male.	Female.		
								Male.	Female.								
1 PHOENIX.....	57	432	58	25	34	11	304	290	7	7	321	307	7	7	669		
2 TUCSON.....	35	625	28	16	23	3	555	546	8	1	578	569	8	1	1,403		

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THE TERRITORY, BY INDUSTRIES: 1909.

	Capital.	EXPENSES.										Value of products.	Value added by manufacture.
		Total.	Services.			Materials.		Miscellaneous.					
			Officials.	Clerks.	Wage earners.	Fuel and rent of power.	Other.	Rent of factory.	Taxes, including internal revenue.	Contract work.	Other.		
1	\$32,872,995	\$41,131,324	\$398,848	\$399,793	\$5,505,183	\$5,788,487	\$27,811,753	\$58,757	\$214,427	\$18,796	\$935,780	\$50,256,694	\$16,656,454
2	19,086	33,247	450	.....	10,658	30	19,553	420	51	1,400	685	42,816	23,233
3	133,057	402,879	2,450	3,220	95,674	12,106	202,333	12,174	2,053	.....	12,814	478,239	203,800
4	129,620	92,779	.....	.....	55,933	23,332	3,504	600	583	.....	.....	5,722	90,562
5	240,469	505,740	15,440	6,470	50,929	16,743	371,342	260	1,683	387	400	42,496	538,427
6	677,130	2,393,930	35,662	41,365	976,239	50,859	1,249,859	.....	4,409	.....	.....	35,487	2,393,930
7	32,643	18,630	.....	.....	9,430	308	7,966	.....	176	700	50	18,630	10,356
8	23,698	25,650	1,000	1,200	5,430	1,118	14,190	1,040	160	.....	1,512	28,050	12,742
9	61,050	120,764	.....	520	31,980	888	81,300	2,628	511	.....	2,937	143,516	61,328
10	673,985	1,238,428	13,000	8,149	41,984	20,163	1,108,436	4,800	4,535	.....	32,321	1,316,757	183,158
11	252,051	110,459	8,570	3,080	46,554	7,161	39,723	2,310	2,391	.....	6,870	119,632	73,748
12	577,932	101,117	7,562	4,765	19,658	40,526	6,579	.....	4,558	.....	17,469	137,400	90,295
13	1,079,907	350,758	21,060	6,692	111,711	118,965	24,621	.....	10,243	.....	57,466	501,228	357,642
14	29,803	63,552	1,200	.....	13,273	35	45,693	1,630	280	.....	1,441	73,854	28,126
15	2,342,117	1,345,679	63,100	43,158	638,857	15,732	321,258	820	16,623	8,061	233,015	1,419,114	1,082,074
16	210,358	265,833	6,000	15,600	214,818	8,227	19,835	120	509	.....	774	335,050	306,983
17	679,943	650,948	32,921	71,463	232,246	18,094	149,973	25,457	5,006	7,431	107,757	784,487	616,420
18	21,436,563	32,755,170	130,020	180,171	2,775,523	5,387,323	23,854,232	.....	128,416	.....	299,480	41,059,240	11,817,680
19	47,489	57,263	3,120	5,300	15,047	100	23,260	1,023	4,764	817	3,826	72,211	48,351
20	4,176,434	592,448	51,793	8,640	159,159	66,667	208,046	5,469	26,316	.....	65,358	676,615	401,902

<sup>3</sup> All other industries embrace—Continued.

Lime.....	2	Models and patterns, not including paper patterns.	1	Pottery, terra-cotta, and fire-clay products.....	1
Liquors, malt.....	2	Patent medicines and compounds and druggists' preparations.....	1	Soap.....	1
Mineral and soda waters.....	18				

AND TOTALS FOR ALL INDUSTRIES IN CITIES OF 10,000 BUT LESS THAN 50,000 INHABITANTS: 1909.

CITIES OF 10,000 TO 50,000 INHABITANTS—ALL INDUSTRIES COMBINED.

	Capital.	EXPENSES.										Value of products.	Value added by manufacture.
		Total.	Services.			Materials.		Miscellaneous.					
			Officials.	Clerks.	Wage earners.	Fuel and rent of power.	Other.	Rent of factory.	Taxes, including internal revenue.	Contract work.	Other.		
1	\$1,258,006	\$1,290,338	\$32,386	\$37,052	\$242,350	\$54,504	\$809,196	\$12,043	\$9,955	\$7,624	\$85,228	\$1,467,142	\$603,442
2	901,954	1,037,249	28,258	23,412	511,959	55,968	1,213,870	11,104	6,517	2,024	79,137	2,036,620	766,782

## CHAPTER 6.

### MINES AND QUARRIES.

**Introduction.**—The present chapter contains a complete statement of the statistics of all mining industries, which include all mines, quarries, and wells in Arizona for the year 1909, as shown by the Thirteenth Census.

A brief explanation of the scope of the census of mining industries and of the terms used, in so far as the usage differs from that followed in the census of manufactures, is presented below in order to prevent any misinterpretation of the statistics.

The explanations here given show the usage of the mining census generally, though some of the special rules have obviously no relation to particular states in which the industries referred to do not exist.

**Scope of census.**—The Thirteenth Census covered all classes of mines, quarries, and petroleum and gas wells that were in operation during any portion of the year 1909, both those which were producing and those whose operations were confined to development work. Mines, quarries, or wells that were idle during the entire year 1909 were omitted from the canvass. The following operations were likewise omitted from the canvass: Prospecting; the digging or dredging of sand and gravel for the construction of roads and for building operations; the production of mineral waters; and the operation of small bituminous coal banks producing less than 1,000 tons annually. Where the mineral products are not marketed in their crude condition, but are dressed or washed at the mine or quarry, the statistics of mining cover the entire work of obtaining the crude material and its preparation for the market.

**Period covered.**—The returns cover the calendar year 1909, or the business year which corresponds most nearly to that calendar year. The statistics cover a year's operations, except for enterprises which began or discontinued business during the year.

**Number of operators.**—As a rule, the unit of enumeration was the "operator." Every individual firm or corporation was required to furnish one report for all mines, quarries, or wells which were operated under the same management or for which one set of books of account was kept. Separate reports were obtained for all properties operated in different states, even where they were owned by the same operator. Likewise, where the operations of one individual, firm, or corporation covered more than one class of mines and quarries, such as coal, iron, limestone, etc., a separate report was received for each industry.

**Number of mines, quarries, and wells.**—This figure represents the total number of mines and quarries in operation or in the course of development at any time during the calendar year 1909, or the business year that corresponds most nearly to that calendar year, and the number of completed petroleum and natural-gas wells in operation on December 31, 1909.

In most mining and quarrying industries the number of mines or quarries varies but little from the number of operators.

**Expenses of operation and development.**—A certain amount of development work is incidental to the operation of every mine. The expenses reported for producing mines include the cost both of operation and of development work which was done in connection with operation.

**Wages.**—The amount shown as wages includes only the compensation of regular wage earners hired by the day, week, or month, or under the piecework system.

**Supplies and materials.**—This item includes the cost of lumber and timber used for repairs, mine supports, track ties, etc.; iron and steel for blacksmithing; rails, frogs, sleepers, etc., for tracks and repairs; renewals of tools and machinery and materials for repairs; and supplies, explosives, oil, etc., as well as the cost of fuel and the rent of power. The schedule called only for the cost of such supplies and materials as had been used during the year covered by the report. Accurate figures, however, could be furnished only in those cases where the operators kept an account of supplies and materials used, or had an inventory made of all in stock at the beginning and at the end of the year. Such a system of accounting is far from general among mine operators, and there is reason to believe that in many cases the reported cost of supplies and materials covered all purchased during the year rather than those used during the year. The crude products of some operators was purchased by others for further dressing or refining; the cost of such materials is shown separately in the general table.

**Capital.**—The census schedule required every operator to state the total amount of capital invested in the enterprise on the last day of the business year reported, as shown by his books. There is, however, a great diversity in the methods of bookkeeping in use by different operators. As a result, the statistics for capital lack uniformity. Some of the figures reported apparently represent capital stock at face value; others include large investments in mineral lands which are not at present being actively mined, but are held in reserve; still others may include expenditures for unproductive mining ventures in no way related to the operations carried on during the census year.

**Persons engaged in mining industries.**—The statistics of the number of operators and officials, clerks, and wage earners, are based on the returns for December 15, or the nearest representative day. The reported number of wage earners includes overseers and foremen performing work similar to that of the men over whom they have charge; those whose duties are wholly supervisory are classed as superintendents and managers. Because of the common practice of shutting down mines at frequent intervals, it is impossible to ascertain with any satisfactory degree of accuracy the average number of employees—that is, the number who, if continuously employed, would be required to produce the actual output of the year.

**Value of products.**—Statistics of the value of mineral products were obtained by the Bureau of the Census in cooperation with the United States Geological Survey, but the two bureaus follow different methods in presenting these statistics. The Geological Survey shows separately the value of each mineral product, whereas the Bureau of the Census presents the value of products of each mining industry. The value of products given for a mining industry often includes the value of some products not covered by the industry designation. The crude product of metalliferous mines may include varying combinations of metals, such as gold, silver, copper, lead, zinc, and iron. Similarly, the total value of all products of the granite quarries is not identical with the value of the total output of granite, but may include the value of some marble or other stone quarried in connection with the principal product.

The value of products for 1909 in most cases represents the value of the products marketed during that year, not the value of those mined during that year.



## MINING IN ARIZONA.

**Summary.**—Statistics for both the producing and nonproducing enterprises in Arizona are presented at the close of this chapter in Table 7, which gives statistics for all industries combined and for producing and nonproducing industries separately in all cases where the statistics could be given without disclosing the operations of individual enterprises. In this table, and also in the other tables presented, the statistics given include the operation of smelters, concentrating mills, and cyaniding plants operated in connection with metalliferous mines.

The gross value of the products of all mines and quarries in Arizona in 1909 was \$34,217,651, which includes a duplication of \$1,370,391, representing the value of copper ore produced by some operators and used as material by others. Thus the net value of products was \$32,847,260. Of this amount, the value of the products of the copper industry, including the ore produced and sold as such and the copper product of the mills and smelters operated in connection with the mines, represented \$30,243,725, or 92.1 per cent. Gold and silver mining (deep mines), for which products valued at \$2,170,627 were reported, ranked next to copper mining, and the only other industry of importance was the quarrying of sandstone, with products valued at \$297,184. In the sandstone industry the expenses of operation and development were greater than the reported value of products. This may have been due to unprofitable ventures or to expenditures for development work.

In addition to the operations of the producing mines and quarries, considerable work was done in Arizona in 1909 on properties which did not report production during the year. These enterprises, with a combined capital of over \$57,000,000, employed 3,990 persons on December 15, 1909, or the nearest representative day, and expended \$5,111,100 during the year. Over 21 per cent of all persons engaged in mining were employed by enterprises of this class, which expended over 15 per cent of the aggregate expenditures of mining operations and development.

The nonproducing enterprises included operators, as follows: Metalliferous mines, 301; asbestos, 1; placer gold, 1; and petroleum and natural gas, 1.

**Character of organization.**—Table 1 classifies the mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for producing enterprises distinguishing incorporated enterprises from those which are unincorporated.

As shown by Table 1, out of a total of 439 operators in Arizona, 298 were corporations. These corporations reported 98.6 per cent of the total value of products and employed 94.6 per cent of all wage earners.

Table 1 INDUSTRY AND CHARACTER OF ORGANIZATION.	Number of operators.	Number of wage earners.	VALUE OF PRODUCTS.		PER CENT DISTRIBUTION.		
			Total.	Per producing operator.	Operators.	Wage earners.	Value of products.
<b>All industries</b> .....	439	16,917	\$34,217,651	\$253,464	100.0	100.0	100.0
Individual.....	68	415	65,084	2,503	15.5	2.5	0.2
Firm.....	73	506	417,517	15,464	16.6	3.0	1.2
Corporation <sup>1</sup> .....	298	15,996	33,735,050	411,403	67.9	94.6	98.6
<b>Producing enterprises</b> .....	135	13,451	34,217,651	253,464	100.0	100.0	100.0
Individual.....	26	209	65,084	2,503	19.3	1.6	0.2
Firm.....	27	332	417,517	15,464	20.0	2.8	1.2
Corporation <sup>1</sup> .....	82	12,800	33,735,050	411,403	60.7	95.6	98.6
<b>Nonproducing enterprises</b> .....	304	3,466	.....	.....	100.0	100.0	.....
Individual.....	42	206	.....	.....	13.8	5.9	.....
Firm.....	46	124	.....	.....	15.1	3.0	.....
Corporation.....	216	3,136	.....	.....	71.1	90.5	.....
<b>Copper (producing enterprises)</b> .....	49	11,394	31,614,116	645,188	100.0	100.0	100.0
Individual.....	4	38	9,299	2,325	8.2	0.3	0.1
Firm.....	5	18	2,379	476	10.2	0.2	0.1
Corporation.....	40	11,338	31,602,438	790,061	81.6	99.5	99.8
<b>Gold and silver, Deep mines (producing enterprises)</b> .....	70	1,618	2,170,627	31,009	100.0	100.0	100.0
Individual.....	15	99	13,821	921	21.4	6.1	0.6
Firm.....	17	115	140,774	8,281	24.3	7.1	0.6
Corporation <sup>1</sup> .....	38	1,404	2,016,032	53,053	54.3	86.8	92.9

<sup>1</sup> Includes 1 limited liability company.  
<sup>2</sup> Less than one-tenth of 1 per cent.

Table 2	Incorporated. <sup>1</sup>	Unincorporated.
Number of operators.....	82	53
Number of mines and quarries.....	189	62
Proprietors and firm members, total.....	.....	100
Number performing manual labor.....	.....	61
<b>Salaried employees:</b>		
Officers of corporations.....	67	.....
Superintendents and managers.....	128	6
Clerks and other salaried employees.....	333	19
Wage earners, Dec. 15, 1909, or nearest representative day.....	12,860	591
Capital.....	\$119,166,124	\$306,657
Expenses of operation and development.....	28,085,300	522,910
<b>Salaries—</b>		
Officers of corporations.....	175,534	.....
Superintendents and managers.....	392,130	10,241
Clerks and other salaried employees.....	424,295	10,000
Wages.....	13,099,136	403,624
Royalties and rent of mines.....	3,399	4,017
Taxes.....	431,127	702
Supplies and miscellaneous expenses.....	12,189,348	87,452
Cost of ore purchased.....	1,370,391	.....
Value of products.....	33,735,050	482,001

<sup>1</sup> Includes 1 limited liability company.

**Size of enterprises.**—In Table 3 the mining enterprises have been classified according to the number of wage earners employed. In this table the operating unit, not the operator, has been made the basis of classification. Nonproducing enterprises are considerably more numerous than producing enterprises, but employ far fewer wage earners. In the former class, 18.9 per cent of all wage earners are employed in 3 enterprises which have from 101 to 500 wage earners each, but in the latter, 27 enterprises of this magnitude employ more than four-fifths of all the wage earners. In copper mining 9 enterprises employing over 500 wage earners give employment to nearly two-thirds of all

who are employed in the industry. In gold and silver deep mining there are no enterprises having more than 500 wage earners.

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	ENTERPRISES.		WAGE EARNERS.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
<b>All industries</b> .....	<b>453</b>	<b>100.0</b>	<b>16,917</b>	<b>100.0</b>
No wage earners .....	19	4.2	.....	.....
Contract work .....	24	5.3	.....	.....
1 to 5 .....	179	39.5	530	3.2
6 to 20 .....	137	30.2	1,447	8.6
21 to 50 .....	37	8.2	1,169	6.9
51 to 100 .....	27	6.0	2,006	11.9
101 to 500 .....	21	4.6	4,494	26.6
Over 500 .....	9	2.0	7,262	42.9
<b>Producing enterprises</b> .....	<b>149</b>	<b>100.0</b>	<b>13,451</b>	<b>100.0</b>
No wage earners .....	8	5.4	.....	.....
Contract work .....	1	0.7	.....	.....
1 to 5 .....	43	28.9	120	0.9
6 to 20 .....	40	26.8	451	3.4
21 to 50 .....	12	8.1	393	2.9
51 to 100 .....	18	12.1	1,387	10.3
101 to 500 .....	18	12.1	3,838	28.5
Over 500 .....	9	6.0	7,262	54.0
<b>Nonproducing enterprises</b> .....	<b>304</b>	<b>100.0</b>	<b>3,466</b>	<b>100.0</b>
No wage earners .....	11	3.6	.....	.....
Contract work .....	23	7.6	.....	.....
1 to 5 .....	136	44.7	419	12.1
6 to 20 .....	97	31.9	906	28.7
21 to 50 .....	25	8.2	776	22.4
51 to 100 .....	9	3.0	619	17.9
Over 100 .....	3	1.0	656	18.9
<b>Copper (producing enterprises)</b> .....	<b>57</b>	<b>100.0</b>	<b>11,394</b>	<b>100.0</b>
1 to 5 .....	9	15.8	20	0.2
6 to 20 .....	10	17.5	104	0.9
21 to 50 .....	5	8.8	178	1.6
51 to 100 .....	19	22.8	984	8.6
101 to 500 .....	11	19.3	2,840	24.9
Over 500 .....	9	15.8	7,262	63.7
<b>Gold and silver, Deep mines (producing enterprises)</b> .....	<b>70</b>	<b>100.0</b>	<b>1,618</b>	<b>100.0</b>
No wage earners .....	3	11.4	.....	.....
Contract work .....	1	1.4	.....	.....
1 to 5 .....	24	34.3	62	3.8
6 to 20 .....	22	31.4	257	15.9
21 to 50 .....	4	5.7	122	7.5
51 to 100 .....	5	7.1	403	24.0
Over 100 .....	6	8.6	774	47.8

exact proportion of the total number of wage earners working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise. Where an enterprise had two operating units and reported a different number of hours per day for each, the two units have been counted as two enterprises in this table. In the copper industry all enterprises and in the gold and silver industry all but one were operated on an eight-hour basis.

Table 4

CLASS OF ENTERPRISES AND NUMBER OF HOURS PER DAY.	ENTERPRISES.		Per cent distribution of enterprises, weighted according to number of wage earners.
	Number.	Per cent distribution.	
<b>All enterprises</b> <sup>1</sup> .....	<b>409</b>	<b>100.0</b>	<b>100.0</b>
8 hours .....	394	96.3	98.9
9 hours .....	8	2.0	0.6
10 hours .....	7	1.7	0.5
<b>Producing enterprises</b> .....	<b>140</b>	<b>100.0</b>	<b>100.0</b>
8 hours .....	133	95.0	99.4
9 hours .....	6	4.3	0.5
10 hours .....	1	0.7	0.1
<b>Nonproducing enterprises</b> <sup>1</sup> .....	<b>269</b>	<b>100.0</b>	<b>100.0</b>
8 hours .....	261	97.0	97.0
9 hours .....	2	0.7	1.0
10 hours .....	6	2.2	2.0

<sup>1</sup> Exclusive of petroleum and natural gas wells.

**Engines and power.**—The aggregate horsepower employed in all enterprises, as shown by Table 5, was 55,773, of which 47,272 was used in producing enterprises and 8,501 in enterprises engaged in development work only.

Table 5

CHARACTER OF POWER.	All enterprises.	PRODUCING ENTERPRISES: 1909				Non-producing enterprises: 1909
		Total.	Copper.	Gold and silver, Deep mines.	All other.	
<b>Primary power:</b>						
Aggregate horsepower .....	55,773	47,272	35,159	10,498	1,615	8,501
Owned .....	51,676	43,568	33,825	9,413	330	8,108
Steam engines:						
Number .....	376	245	168	70	7	131
Horsepower .....	46,020	40,130	31,803	8,052	275	5,890
Gas or gasoline engines:						
Number .....	231	113	54	54	5	118
Horsepower .....	5,656	3,438	2,022	1,361	55	2,218
Electric motors operated by purchased current:						
Number .....	119	111	68	21	22	8
Horsepower .....	4,097	3,704	1,334	1,085	1,285	393
Electric motors run by current generated by enterprise using:						
Number .....	240	228	214	14	.....	12
Horsepower .....	7,123	6,857	6,614	243	.....	265

**Comparison of mining industries: 1902-1909.**—In order to make a comparison between the census of 1909 and the preceding census of mines and quarries, that of 1902, it is necessary to omit from the 1909 figures, as they appear in other tables in this chapter, statistics for the operation of copper smelters. In any case, only the few items specified in Table 6 can be compared for the two years.

**Persons employed in mining.**—There were employed on the 15th day of December, 1909, or the nearest representative day, in the mining industry of Arizona, 18,094 persons, of whom 16,917 were wage earners and 1,177 were salaried employees and proprietors and firm members. Persons engaged in mining industries represent very nearly 25 per cent of the adult males of the state.

**Prevailing hours of labor.**—In Table 4 all enterprises combined, and producing and nonproducing enterprises separately, except those which employed no wage earners and those operated exclusively by contract work, have been classified according to the prevailing hours of labor per day in each enterprise or operating unit. Petroleum and natural gas wells were not included in this table, because the lack of regularity in the number of hours worked per day in a large number of enterprises rendered such a classification impracticable. The table shows the percentage of the total number of enterprises falling into each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the

**Table 6**

	PRODUCING ENTERPRISES.		
	1909	1902	Per cent of increase. <sup>1</sup>
Wages and salaries.....	\$12,444,253	\$5,769,248	115.7
Supplies and materials.....	\$8,828,800	\$3,000,521	123.1
Royalties and rent of mines.....	\$8,256	\$18,567	-55.5
Contract work.....	\$121,156	\$159,942	-24.3
Value of products.....	\$28,067,772	\$11,197,375	132.8
Primary horsepower.....	35,179	11,073	217.7

<sup>1</sup> A minus sign (-) denotes decrease.  
<sup>2</sup> Exclusive of amount paid to miners compensated by a share of the product which is included under "Contract work," in Table 7.

Duplication between manufactures and mining.—In the copper and sandstone industries some of the operators subjected the products obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining. As a result the combined gross value of products for the manufacturing and mining industries in Arizona involves a duplication of \$24,419,315, of which \$24,177,315 represented the value of copper and \$242,000 the value of the sandstone.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

**Table 7**

	Aggregate.	PRODUCING MINES AND QUARRIES.						NONPRODUCING MINES, QUARRIES, AND WELLS.		
		Total.	Copper.	Gold and silver, Deep mines.	Sandstone.	Precious stones.	All other. <sup>1</sup>	Total.	Metalliferous mines.	All other. <sup>1</sup>
Number of operators.....	439	135	43	70	5	6	11	304	301	3
Number of mines, quarries, and wells.....	1,147	251	99	117	10	9	16	896	891	5
Capital.....	\$176,817,826	\$110,772,781	\$95,317,026	\$22,816,187	\$389,228	\$51,400	\$1,198,040	\$57,045,045	\$57,036,644	\$8,401
<b>Expenses of operation and development.</b>	<b>\$33,719,316</b>	<b>\$28,608,216</b>	<b>\$25,383,528</b>	<b>\$2,781,893</b>	<b>\$308,771</b>	<b>\$24,071</b>	<b>\$110,453</b>	<b>\$5,111,100</b>	<b>\$5,106,028</b>	<b>\$5,072</b>
Services:										
Salaried officers of corporations, superintendents, and managers.....	\$926,943	\$577,885	\$433,573	\$119,767	\$13,770	\$2,975	\$7,800	\$340,058	\$349,058	.....
Clerks and other salaried employees.....	\$545,030	\$440,295	\$377,242	\$39,753	\$20,800	.....	\$2,500	\$104,735	\$104,735	.....
Wage earners.....	\$15,969,706	\$13,502,700	\$11,780,348	\$1,406,691	\$240,003	\$16,824	\$59,334	\$2,466,946	\$2,464,164	\$2,782
Miscellaneous:										
Supplies.....	\$6,961,195	\$5,559,367	\$4,840,937	\$683,928	\$17,703	\$1,714	\$15,025	\$1,401,828	\$1,399,738	\$2,000
Cost of ore purchased.....	\$1,370,391	\$1,370,391	\$1,370,391	.....	.....	.....	.....	.....	.....	.....
Fuel and rent of power.....	\$5,945,928	\$5,603,989	\$5,188,802	\$400,522	\$9,714	.....	\$4,951	\$341,937	\$341,937	.....
Royalties and rent of mines.....	\$9,256	\$8,256	\$2,468	\$5,613	.....	.....	\$175	\$1,000	\$1,000	.....
Taxes.....	\$454,119	\$431,829	\$404,046	\$26,176	\$811	\$73	\$723	\$22,200	\$22,200	.....
Contract work.....	\$409,696	\$238,528	\$212,296	\$10,358	.....	.....	\$16,328	\$170,714	\$170,714	.....
Rent of offices and other sundry expenses.....	\$1,127,054	\$874,462	\$773,425	\$89,685	\$5,250	\$2,485	\$3,617	\$252,592	\$252,392	\$200
Value of products.....	\$34,217,651	\$34,217,651	\$31,614,116	\$2,170,627	\$297,184	\$56,486	\$79,238	.....	.....	.....
Persons engaged in industry.....	18,094	14,104	11,845	1,764	314	29	152	3,990	3,975	15
Proprietors and officials.....	706	301	159	111	13	4	14	405	405	.....
Proprietors and firm members.....	309	100	20	61	7	1	11	209	200	.....
Number performing manual labor.....	128	61	12	45	2	.....	2	67	67	.....
Salaried officers of corporations, superintendents and managers.....	120	67	50	14	1	1	1	53	53	.....
Clerks and other salaried employees.....	277	184	89	36	5	2	2	143	143	.....
Wage earners, Dec. 15, 1909, or nearest representative day.....	471	352	292	35	23	.....	2	119	119	.....
Above ground.....	16,917	13,451	11,394	1,618	278	25	136	3,466	3,451	15
Above ground.....	6,934	5,667	4,598	641	278	22	128	1,267	1,252	15
Below ground.....	9,983	7,784	6,796	977	.....	3	8	2,199	2,199	.....
Men 16 years of age and over.....	16,911	13,446	11,389	1,618	278	25	136	3,465	3,450	15
Engineers, firemen, mechanics, etc.....	2,150	1,556	1,216	288	43	.....	9	594	586	8
Above ground.....	1,789	1,243	930	261	43	.....	9	546	538	8
Below ground.....	361	313	286	27	.....	.....	.....	48	48	.....
Miners, miners' helpers, quarrymen, and stonecutters.....	9,946	7,624	6,488	921	88	25	102	2,322	2,317	5
Above ground.....	797	572	347	21	88	22	94	225	220	5
Below ground.....	9,149	7,052	6,141	900	.....	3	8	2,097	2,097	.....
All other employees.....	4,815	4,266	3,685	409	147	.....	25	549	547	2
Above ground.....	4,347	3,852	3,321	359	147	.....	25	495	493	2
Below ground.....	468	414	364	50	.....	.....	.....	54	54	.....
Boys under 16 years of age.....	8	8	8	.....	.....	.....	.....	1	1	.....
Number of wage earners employed on the 15th day of each month:										
January.....	14,233	12,391	10,792	1,219	246	25	109	1,842	1,842	.....
February.....	14,576	12,597	10,896	1,262	299	31	109	1,979	1,979	.....
March.....	14,803	12,700	10,936	1,312	317	27	108	2,103	2,103	.....
April.....	14,777	12,497	10,723	1,306	322	27	119	2,280	2,280	.....
May.....	15,673	13,332	11,417	1,448	326	16	125	2,341	2,341	.....
June.....	15,278	12,847	10,970	1,432	306	17	116	2,431	2,431	.....
July.....	14,898	12,598	10,794	1,391	290	8	115	2,300	2,300	.....
August.....	15,080	12,879	11,184	1,315	262	8	110	2,201	2,197	4
September.....	15,219	12,970	11,172	1,393	292	8	105	2,249	2,246	3
October.....	15,749	13,267	11,618	1,254	276	8	111	2,482	2,479	3
November.....	15,792	13,087	11,411	1,282	251	8	115	2,725	2,710	15
December.....	15,670	12,909	11,264	1,258	258	13	116	2,761	2,754	7
Land controlled, acres.....	138,963	44,217	28,872	13,418	383	181	1,363	94,746	94,291	455
Owned.....	126,979	38,096	26,239	10,390	383	101	983	87,883	87,428	455
Held under lease.....	12,984	6,121	2,633	3,028	.....	80	380	6,863	6,863	.....
Mineral and oil land.....	132,248	38,907	23,792	13,188	383	181	1,363	93,341	92,886	456
Owned.....	119,269	32,791	21,159	10,165	383	101	983	86,478	86,023	455
Held under lease.....	12,979	6,116	2,633	3,023	.....	80	380	6,863	6,863	.....
Timber land.....	2,620	2,620	2,660	60	.....	.....	.....	.....	.....	.....
Other land.....	4,095	2,690	2,520	170	.....	.....	.....	1,405	1,405	.....
Primary horsepower.....	55,773	47,272	35,159	10,498	1,430	.....	185	8,501	8,493	8

<sup>1</sup> Includes operators as follows: Clay, 1; fluorspar, 2; granite, 1; gypsum, 1; limestone, 2; marble, 1; placer gold, 1; quartz, 1; tungsten, 1.  
<sup>2</sup> Includes operators as follows: Asbestos, 1; petroleum and natural gas, 1; and placer gold, 1.  
<sup>3</sup> In the copper industry 5 boys were employed below ground.