

There is what is termed a "contract school" located at Tucson, which many of the Papago children attend. The school is established and supported in part by a missionary department of the Presbyterian church. The buildings are large, airy, well planned, and adapted to the purpose required. The pupils seem well disciplined and clean. The government pays a stated sum annually to the school for each pupil in attendance as reimbursement for board and clothing furnished. The school owns 5 or 6 good buildings, all in good condition and well furnished, also a farm of 43 acres. On account of lack of water but few garden vegetables are grown, but barley and wheat yield abundantly.

Some of the scholars are taught carpentering, painting, and plastering, and their work is quite satisfactory.

PAPAGOS LIVING OFF THE RESERVATION.

These Papago Indians live in the southern part of Pima county, along the southern border of the territory of Arizona. Their language is similar to that spoken by the Pimas. They roam over a country about 100 miles in width north and south and about 125 miles east and west, and there are a few small villages over the Mexican border but near the boundary line.

The country in which they live consists of broad, open plains, divided by mountain ranges. The valleys or plains are arid, having no natural springs or running streams of water; yet after the summer rains these plains are covered with grass of a fine quality, and owing to the dryness of the air this grass is cured or dried on the ground and furnishes good, rich food for cattle during the remainder of the year.

The Indians select their dwelling places at the foot of the mountains near the mouth of the various canyons that open out into the plains. Small springs often flow through these canyons and sink into the sand. The Indians utilize these springs or sink wells into the sand, and thus secure the underflow from the springs. Their cattle feed out into the plains and return to these wells or springs to drink. Near these watering places, usually on an elevation, the Indians build their houses in their permanent villages of adobe, about 12 by 16 feet in area and about 8 feet in height. Small poles are laid on top and crosswise of the building, and on these are laid brush, with weeds or grass on the brush, the whole covered with about 6 inches of clay, which is impervious to water. The floor is of clay, and there is one doorway, but no windows. The doorway is sometimes closed with a dried beef hide. As a rule, they live on the outside of the house. The house contains no furniture except a little bedding and some cooking utensils.

Their food consists of beef, dried wild fruit, dried mesquite beans made into a kind of bread, and wild game. During the summer rains they raise some vegetables, which they dry for winter use. They also sell or trade cattle to settlers in the Gila and Santa Cruz valleys for wheat and corn, which the women grind in their crude way into meal and flour. They have adopted the civilized mode of dress, and are gradually learning the use of soap.

The women of the tribe are virtuous and industrious, being in these traits far in advance of any other tribe in the territory.

There are 4,800 of this tribe living off the Papago reservation. With rare exceptions they are self-sustaining, have always been good citizens, and on many occasions have joined with the whites to assist in suppressing murderous Apaches. The principal occupation of the men is raising cattle and horses, and a little farming when they can find a piece of damp ground that will raise corn and vegetables, hunting, chopping wood around mining camps, and ordinary labor wherever they can find it. If there is any mixed blood in the tribe it is not perceptible.

There are several mining camps scattered throughout the country which these Indians inhabit, and in some of the large valleys wealthy men or companies have sunk wells 500 or 1,000 feet deep and established cattle ranches or ranges, and many Indians are employed about these camps and mines.

The country is somewhat difficult of access, as there are several mountain ranges running through it. The roads follow the valleys, and sometimes it is "a long way around where it is only a short way across". These mountain ranges abound in game, which the Indians hunt.

A month's travel in these Papago villages failed to reveal a single case of drunkenness, although there are frequent instances of drunkenness among Indians in the streets of Tucson. They have great numbers of horses and cattle, but it is impossible to form a correct estimate as to numbers. The horses are small and inferior, but the cattle are fully up to the average in size and quality.

These Indians as a tribe have always been exceptionally friendly to the white people. They have never received aid from the government. The little religion they have is a conglomerate of Roman catholicism, superstition, and Indian hoodooism. The Roman Catholic church established missions among them more than 150 years ago.

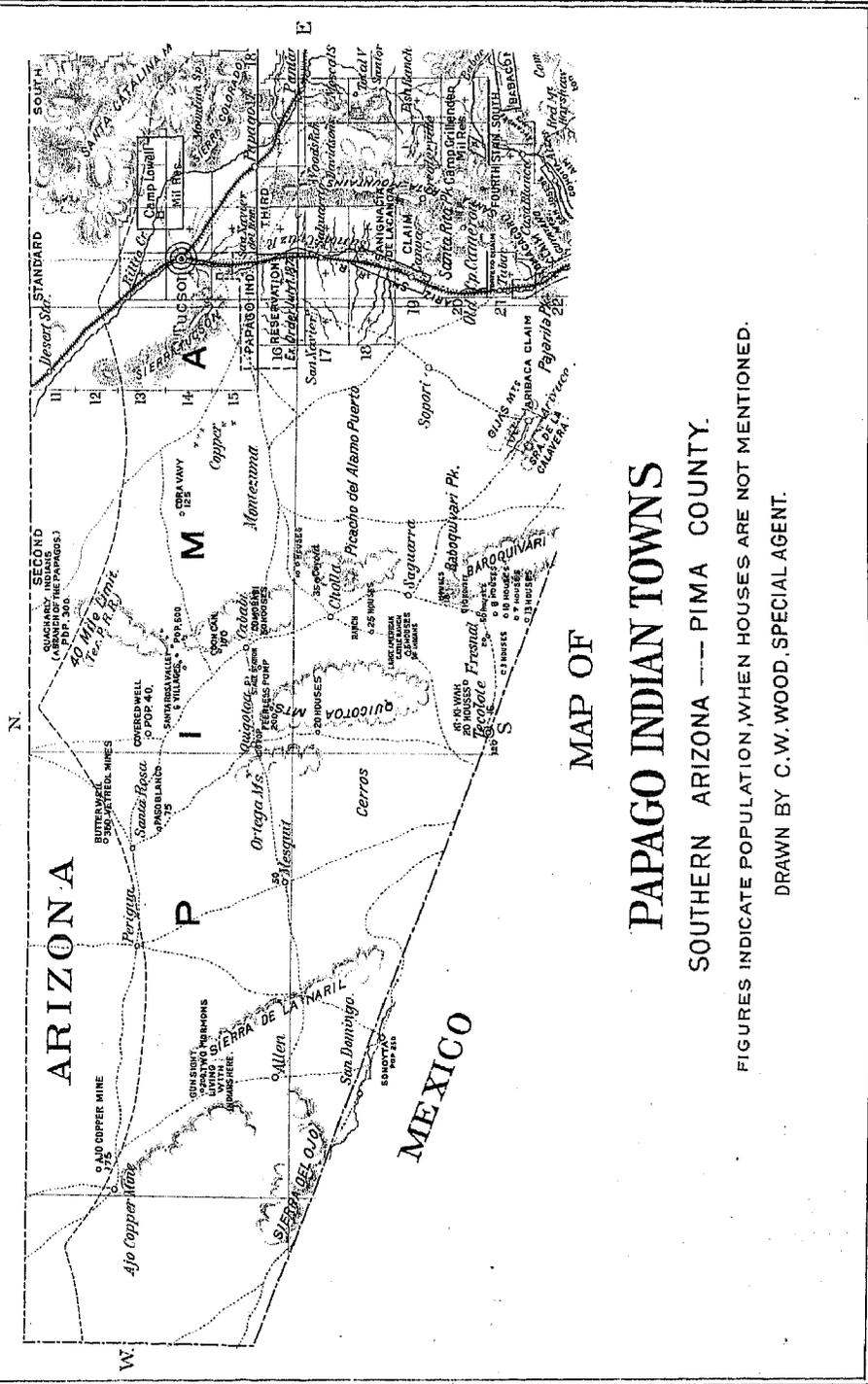
THE RESERVATION AND NONRESERVATION PAPAGO INDIANS, PIMA AGENCY.

Report of Special Agent C. W. Wood on the reservation and nonreservation Papagos of Pima and Cochise counties.

TRIBAL NAME.—The Papagos and Pimas were formerly one tribe. Authorities differ as to the derivation and meaning of the name. One view is that Papago means "hair cut", another that it means "baptized". Neither of these meanings has any etymological basis or value. The most reasonable derivation of the term seems to be the following, derived from conversation with the oldest Indians: the division of the Pimas occurred from the labors

ELEVENTH CENSUS OF THE UNITED STATES
 ROBERT P. PORTER, Superintendent.

INDIANS.



MAP OF

PAPAGO INDIAN TOWNS

SOUTHERN ARIZONA --- PIMA COUNTY.

FIGURES INDICATE POPULATION, WHEN HOUSES ARE NOT MENTIONED.

DRAWN BY C. W. WOOD, SPECIAL AGENT.

of the jesuit missionaries. When a considerable number of them had accepted the teachings of the missionaries they were called, by way of distinction, Papagos, from the Spanish word for pope, "papa". Baptism was involved in their becoming christians, and hair cutting was an incidental result of the influence of the missionaries. Neither of these facts, however, can account for the name. On the other hand, the derivation from "papa" is etymological and consistent with the facts. They had become adherent to the pope. So far as I can learn, this explanation of and origin of the name has never been published.

The resident missionary at Sacaton gave still another derivation of the word Pagago. He speaks and preaches in the Indian tongue, and thinks the name is derived from the word "pa-pa-cot", meaning discontented. This could easily be corrupted into Papago. The Indians at an early date became much dissatisfied with the exactions and tyranny of the jesuits, and this term was naturally applied to them.

The Papagos are a seminomadic tribe, their migrations being due to the peculiar character of the country which they inhabit. The exigencies of food, water, and labor are the principal causes of their temporary changes of habitation; but the extent of their migrations, and the localities which they occupy for varying periods, are within certain limitations. When, through the presence of wells or running water, the supply of that indispensable element is unfailling, they migrate in search of food or labor.

When the water supply, which is procured from natural water holes or the earth reservoirs constructed by them, called tanks, where it accumulates during the rainy season, has been consumed, they remove to the vicinity of wells or running water found in the canyons of the mountains or in the deep valleys among the foothills. This migratory feature of their life greatly enhances the difficulty of an exact enumeration of the tribe.

The territory over which they range lies south of the Southern Pacific railroad, in Arizona, and is about 100 by 150 miles in extent. Many thousands are also located in the state of Sonora, Mexico. They move back and forth at will between the two countries, and when a village is found in motion inquiry alone can determine, and then not always with certainty, on which side of the line they really belong.

From various publications relating to Arizona, and from the statements of ranchmen, miners, traders, surveyors, and a census enumerator, quite conflicting and divergent estimates were obtained of the number of the Papagos. These estimates range from 3,000 to 7,000, while most of them agree on 5,000 or 6,000 as the real number. One difficulty to be experienced in their enumeration is that at any season of the year a village of permanent houses, evidently the abode of hundreds of Indians, may be found without a single inhabitant, not because it has been deserted, but because the inhabitants are gone temporarily, leaving no information as to where they have gone, for what purpose, or for how long a time, and it would be impracticable to wait until their return or to follow them.

The only available method for obtaining even an approximate estimate of the number of these Indians seemed to be to ascertain, as far as practicable, the number of their villages and the aggregate number of houses contained in them. Multiplying the total number of houses by the average number of inmates per house would give a reasonable result. By actually counting the inmates of many houses in several villages, and with the indorsement of the judgment of the enumerator, 5 was adopted as the average number of inmates per house. As not less than 4 nor more than 11 were found in any given case, it was decided that 5 would be a conservative average and insure a total within the actual number rather than in excess of it.

In the accompanying map, showing the route during a 10 days' trip through the Papago country, Pima county is given on a scale of 7.5 inches to the mile. The villages are located from actual visitation or on information, with no effort at mathematical accuracy, but with the design of suggesting relations and distances. The trip was planned so as to reach as many villages as possible during the time allowed and to make a fair and correct census. The villages given in red are those actually visited, 5 of which were located by the Indians. The 2 villages marked with black, situated near the large ranch, were located, but omitted by mistake. The accompanying figures indicate the number of houses in each village. The villages given in black were located through the courtesy of a trader among the Papagos, who is generally conceded to be the best informed person in Arizona in everything which relates to the tribe. The figures in black indicate his estimate of the population of each village. His estimate of the numbers living in the villages actually visited in enumerating varied only about 25, more or less, from the numbers in the given villages obtained by the multiplication of the number of houses by 5. In the cases mentioned the population was from 350 to 500, and such close agreement gave additional credibility to both his and our estimate.

The number of resident Indians at San Xavier was ascertained exactly when the reservation was divided among them in severalty, and is perfectly reliable.

Papagos at San Xavier	363
Papagos on line of expedition:	
447 houses, multiplied by 5	2,235
Additional, estimated by I. D. Smith	2,465
	<hr/>
	5,063
Additional, reported by C. W. Crouse, agent at Sacaton (Papagos on the old reservation at Gila Bend) ..	40
Resident at Sacaton reservation	60
	<hr/>
Total	5,163

PHYSICAL CHARACTERISTICS OF THE REGION.—The territory covered by the Papagos in their migrations, and in which their villages are located, consists of mountain ranges and the intervening valleys. The soil of the valleys contains a considerable proportion of clay, so that it is all called adobe soil. In the mesas or plains occasional strips of sand occur. Along the arroyos, or dry water channels, deposits of gravel are numerous. The arroyos become raging torrents during the rainy season, rendering travel impossible or dangerous during the temporary flood. The soil of the foothills is very rocky. Alkali is present in the soil in varying proportions, giving the characteristic name to the vast stretch of country known as the alkali desert. It is not the presence of alkali, however, that makes the desert, but the absence of water. An abundant water supply renders this alkali soil equal in fertility to any soil in the country. As it is, the valleys contain a great deal of arable land, which is evident from the great areas covered with grass, which form the stock ranges, and from occasional sections where weeds grow so luxuriantly after the rainy season as to overtop a man on horseback. Some portions of the valleys are covered with mesquite trees and bushes, and also sagebrush, but these sections produce abundant crops when irrigated.

CLIMATE.—The climate is very mild, being neither extremely cold in winter nor hot in summer. The mean average temperature during the summer of 1889 was 81.5°, and during the winter of 1889-1890 it was 52.6°.

WATER SUPPLY.—There are occasional wells found among the Indian villages. Natural water holes are quite numerous, and by raising embankments of earth in favorable localities the Papagos make huge ponds or reservoirs, which they call tanks. These natural and artificial reservoirs are only serviceable for the temporary storage of water, and toward the last they become filthy mudholes. The Indians, however, continue to use the water as long as it can possibly be considered a fluid. In one place the Papagos have dug a well 80 feet deep, and with incredible labor have made a footpath from the top of the ground to the level of the water.

Water is found by boring at a depth of from 200 to 800 feet, but no flowing wells have yet been obtained in the territory. The water in the wells rises from 50 to 150 feet, and then is raised to the surface by steam pumps. The Indians, however, have not the financial resources with which to sink or operate artesian wells. When their tanks are exhausted they remove with droves and herds to the valleys and canyons in the mountains, frequently crossing over into Mexico.

TIMBER.—The varieties of timber within the Papago range are the willow, cottonwood, mesquite, polleverde, and on the southern and western mountain slopes the oak. The mesquite is the most common timber, as it grows freely on the mesas. It rivals the hickory as firewood, throwing out great heat, and the coals retain fire even longer than coals of hickory. The mesquite, however, is very easy to cut, and is handled with far less labor than hickory.

FRUITS AND NUTS.—The sahuaro (giant cactus), which grows on the rocky soil of the foothills and covers the moderate mountain ranges, rises in height from 10 to 60 feet, and is a mass of vegetable matter, supported by an internal skeleton of ribs or poles of woody fiber. The fruit of this remarkable plant grows out of the top of the trunk and arms, and constitutes an important article of food, the Papagos almost living upon it during June, July, and a part of August. They gather it with long poles, and eat it either fresh or after it has been dried. They make from the juice a sirup and a drink which is slightly charged with alcohol. Although the ribs of the sahuaro are very valuable; the Indians never destroy the plant, and are greatly incensed if a white man cuts one down; but when the cactus dies and the vegetable matter dries, powders, and falls away, leaving the ribs exposed and bare, they are used as supports for the dirt roofs of adobe houses, for the sides of houses when plastered with mud, for poultry and pigeon houses, and other small structures.

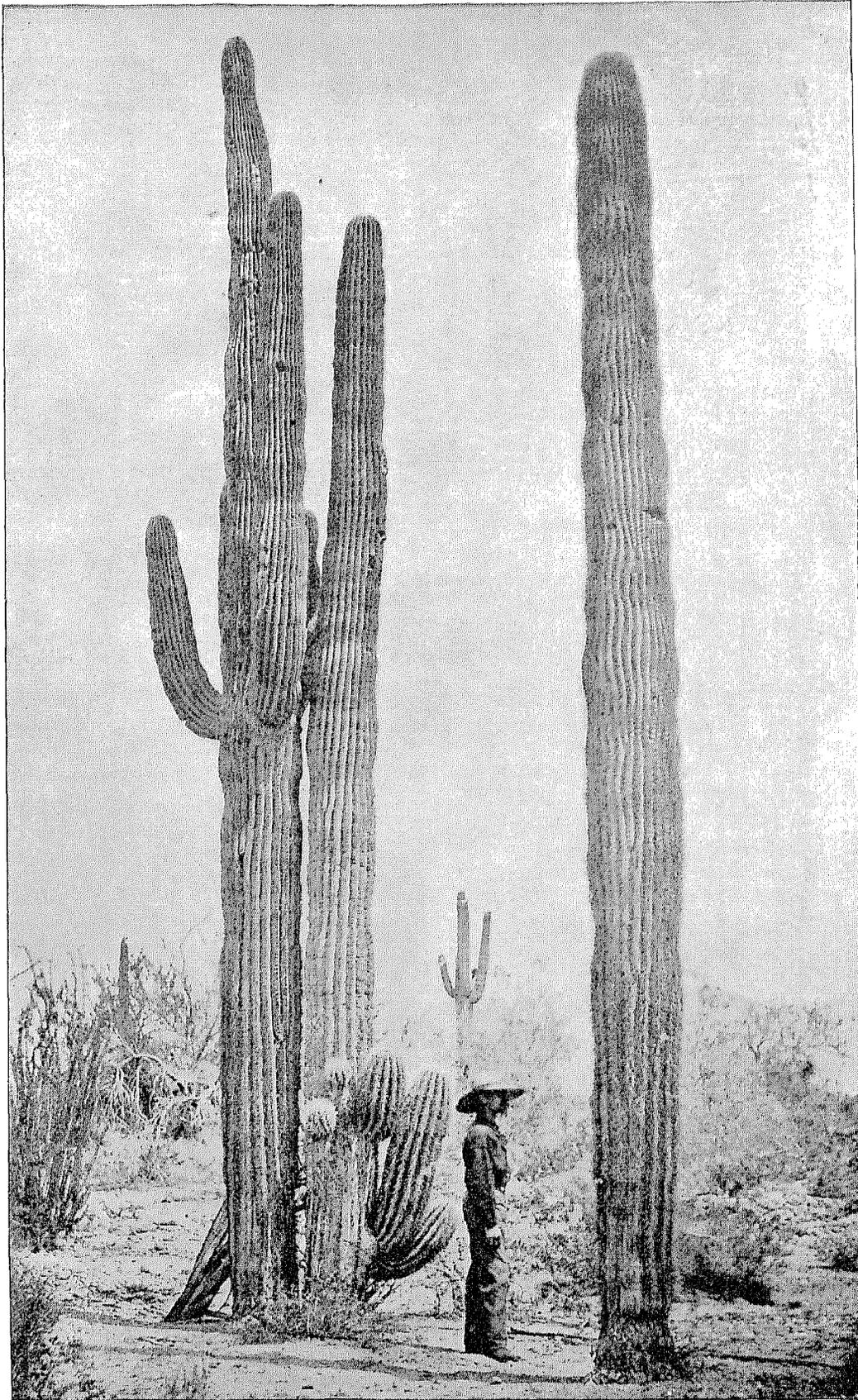
The Papagos eat the fruit of the prickly pear cactus and make a sirup from its juice; from the mescal (sweet aloe) a highly intoxicating drink is made. The root, which is bulbous, grows partly under and partly above the ground, and when roasted it is very delicious, and great quantities are consumed by the Papagos. They dig out of the ground a vegetable which appears to be a species of wild onion, but they call it a groundnut, and relish it highly when boiled. A very useful plant found in large quantities, called the soap plant (amole), forms a substitute for soap.

The tannin root, resembling the sweet potato in appearance, grows in great profusion. It contains a large portion of tannic acid, and is a substitute for the astringent barks, hemlock and oak, which are used in tanneries.

FOOD.—In addition to the fruits, nuts, and flesh already mentioned, their food consists of wheat flour (usually formed by the women on a metáte) prepared in simple ways, parched wheat and corn, boiled wheat and corn, flour made from the mesquite bean, beans, boiled squash, green and dried squash seeds, beef, and poultry.

INDUSTRY.—The Papagos seem to be esteemed by the whites in general as the best Indians in the territory. They are industrious, and are good help in mines, on ranches, in the harvest field, and on stock ranges. They easily learn the mechanical arts, and set and handle mining drills as well as white men. The engineer at the Quijotoa mines said that his assistant was a Papago, and that he was fully competent to run the engine.

In practical irrigation the Indians are conceded to be the superiors of the whites, and in their domain this is the foundation of agricultural skill. When properly educated there can be no doubt of their ability to acquire the scientific principles of the art.



(E. A. Bonine, photographer, Lamanda Park, California.)

1889.

ARIZONA.

GIANT CACTUS, (CEREUS GIGANTEUS,) ALSO CALLED SAHUARO.

GRAIN.—The roving Papagos, those living off the reservation, raise only grain enough, principally wheat and corn, for their own use. Squashes, melons, and sugar cane make up the list of their common crops. Cultivation with them consists in scratching the ground with their stick plows and planting the seed. They pay no attention whatever to weeds. They inclose small fields of fertile ground in the mesas with brush fences and then plant after a rain at the right season. If it rains in November, they plant wheat. Rain in December will insure a good growth of straw, but rain in February will be necessary to mature the berry. The failure of rain in any of the 3 months will prevent planting or about ruin the crop which has been started. Owing to the uncertainty of propitious rains they obtain crops, apart from irrigation, only about once in 6 years.

Their wheat is white, a short, plump berry, of remarkably good quality. In the off years they resort to the reservation, raise a little grain, and "pack" it to their villages. Corn, squashes, sugar cane, and melons are raised after the summer rains.

They grind grain on an inclined stone, called a *metáte*, using a smaller stone, about the size of a brick, called a *mamo*, as the crushing power. A handful of whole grain is placed at the top of the *metáte*, a part of it is scattered over the surface of the stone with a dexterous flit of the hand, and it is then powdered by two or three energetic rubs with the small stone. The whole process resembles that of washing clothes with a washboard. The flour is caught in a bowl as it falls from the *metáte*, is clean and free from grit, and contains all the nutriment of the grain.

Parched wheat, when ground in this manner, is mixed with water, forming a palatable drink, called *penole*. Corn is never ground raw, but after it has been boiled, and the meal is pressed and rolled up in soft corn husks and forms their bread for journeys. It is superior in taste, in my judgment, to any kind of corn bread made by the whites. They manufacture a kind of cheese from milk, but have no process for butter making.

STOCK.—The Papagos have small herds of stock and droves of horses. These constitute their substance, but such possessions can not be large in view of the uncertainty of water. Nearly every family has a few fowls. Their wants are few, and those are easily satisfied. They are self-supporting, and no charge on the government for either food or clothing.

An occasional farm wagon was found in a village, but in *Ki-ki-wah* there were 4. This village is about 90 miles from Tucson and 10 from the Mexican line.

GAME.—Various species of deer abound, and in season the markets of the whites are supplied with venison by the Indians. Mountain sheep and goats are also brought in by them, but in less numbers than deer. Black and cinnamon bears are occasionally killed. The cotton-tail rabbit abounds, and is in demand for the table. The flesh is white, and fully equal to chicken in delicacy of flavor. Dangerous wild animals are also killed by the Indians in considerable numbers. The most formidable of these is the mountain lion. This animal destroys young stock, and is therefore hunted with zeal by the Papagos. The pelts possess a trifling value. The wildcat and civet cat are very numerous. The coyote, fox, jack rabbit, and skunk make up a group of animals which are pests, though not dangerous ones. The jack rabbit is sometimes used for food.

BIRDS.—Among the birds useful to Indians are the quail, dove, mocking bird, and cardinal bird. These are trapped with great success by them, the quail and dove for food, the others for household pets, their sale forming quite an income. Hawks, owls, and crows abound. Wild ducks, geese, bittern, heron, and snipe are killed in their migration back and forth between Mexico and California. It will be seen that the Indians have many food resources on wing and foot, valuable for consumption or sale.

DWELLINGS.—No tents are used among the Papagos, and about two-thirds of the houses are made of adobe, the rest being constructed of mud and brush. They consist of but one room, and have dirt roofs laid on rafters of small trees. There is no uniformity as to the size of the houses. The adobe bricks are made in an open frame of four compartments from a gray mud or clay mixed with short cut straw or hay. This mold is placed upon the ground, filled with the soft adobe, packed firmly, and then the frame or mold is removed and the brick left to dry. The usual size of a brick is 4 by 9 by 18 inches.

The Papagos are cleanly in their habits. They sweep the dirt floors of their houses, and in some cases the ground around them. No vermin of any kind was found in any of their houses.

CLOTHING.—The men wear boots or shoes, pants and shirts, and straw or felt hats. A canvas jacket is worn on cool days or on a journey. The women wear shoes, stockings, and skirt, and waist blankets are quite common with both sexes, with the women serving as shawl and head covering. The women sew nicely by hand, using thimbles. They also use sewing machines, of which there were three in *Ki-ki-wah*.

MORALS.—The men were generally represented to me to be truthful and honest and the women to be virtuous. Prostitution is said to be unknown among them. This may be due to the fact, as some claim, that wives are taken and abandoned at will. Occasionally a man was found with 2 wives.

Their honesty was tested in various ways on our trip. The outfit of 2 wagons was left unguarded for a whole day when we made the trip from *Tecolote* to *Fresnal* and neighboring villages, and not a thing was disturbed. Twice after we left villages forgotten articles were brought to us by men on horseback. These articles would not have been missed, and might have been kept by them with perfect impunity. The Papagos are not addicted to

intoxicating drink, but smoking and gambling are so common among them that they will even stake their clothing on races, either by men or horses, and on the simple games with which they are familiar.

RELIGION.—The Papagos are nominally Catholics. Adults and children wear crosses and charms. They believe in witches and evil spirits, and buy charms to insure good luck.

At the little village of Ki-ki-wah, where there are a number of returned scholars, it was said that a simple service was held by these "graduates", in which they explained on Sundays the things they had learned about the white man's religion. At the village called Gausight 2 Mormons have been living among the Indians for nearly 2 years.

EDUCATION.—The Papago youth of both sexes show considerable capacity for mental culture. Many of the Papagos speak Spanish fluently, even after having been at school for 2 or 3 years. When at home on their vacations they only hear Papago and Spanish, which tends to the disuse of what English they have acquired. They are docile, mild in disposition, and well inclined toward their teachers. They learn slowly but surely. The chief difficulty of receiving any permanent benefit from educating them is that they are so disastrously affected by the conditions which meet them when they return to their homes. They virtually return to barbarism and all old influences of a nonprogressive character.

The boys readily learn improved methods of agriculture, also the trades of tinsmith, blacksmith, and carpenter, while the girls learn sewing, cooking, and the general duties of housekeeping.

SCHOOL ATTENDANCE.—During the 3 years of the Tucson Presbyterian mission school 73 Papago children have been enrolled. There are 50 now on the rolls. The number enrolled at the San Xavier reservation schools is about 20. At Sacaton there are 15 Papagos on the roll. The government school there is well conducted.

It will be seen that in the district visited, with the addition of the Papago scholars at San Xavier, not more than 100 in all of these children are in school. The total number of Papago children of school age is probably about 2,000. Their parents will exercise no authority to secure their attendance at school even when they wish them to go, nor, on the other hand, do they hinder them if they desire an education.

PATHOLOGICAL.—The Papagos are very liable to consumption and pneumonia. This arises from the exposure to which they are subject in inclement weather, as all mud roofs leak in protracted rains and a pitch sufficient to carry off the rain would cause the adobe itself to wash off entirely. Many of the tribe are pitted badly with smallpox. Children are subject to measles and whooping cough in addition to lung difficulties. The Papagos have no medical treatment whatever among themselves, and in case of sickness resort to the "medicine man" with his nummeries.

The Indians seem to be able to deal with flesh injuries, but are powerless in cases of disease or fractures of bones. In acute local pain they sometimes put a pinch of cotton on the flesh and burn it there, repeating the process on a new spot at a little distance. Ordinarily their only resource is stoical submission.

SAN CARLOS AGENCY.

Report of Special Agent STEPHEN WHITED on the Indians of the White Mountain Apache reservation, Fort Apache subagency, and the Apache, Mohave, and Papago Indians of the San Carlos agency, Arizona, from August to November, 1890.

Names of Indian tribes or parts of tribes occupying reservations: (a) Aravapai, Chilion, Chirikahwa, Koiotero, Mienbre, Mogollon, Mohavi, Pinal, San Carlos, Santo, Tonto, and Yuma-Apache.

The unallotted area of the White Mountain reservation is 2,528,000 acres, or 3,950 square miles. The outboundaries have been surveyed. It was established, altered, or changed by executive orders November 9, 1871, December 14, 1872, August 5, 1873, July 21, 1874, April 27, 1876, and January 26 and March 31, 1877.

Indian population June 1, 1890: White Mountain Apaches, 2,121; White Mountain reservation, Fort Apache subagency, 1,920; total Apaches, 4,041; Mohave reservation, 551; Yuma reservation, Mohaves, 240; total at agency, 4,832.

The San Carlos agency is situated on a mesa immediately below the junction of the San Carlos with the Gila river. The altitude is about 2,900 feet above sea level. The records of the United States signal service show that the highest temperature for the summer of 1890 reached, July 6, 109°, the lowest for the winter of 1889-1890 was January 20, being 20°. The earliest frost in the fall of 1889 was November 2, and the latest frost in the spring of 1890 was March 16.

The agent reports to the Indian Office that many government buildings at San Carlos are in bad order. They consist of: No. 1, an adobe building 1 story high, 30 by 60 feet, one-half used as agent's dwelling, one-half for storehouse for grain, \$1,000; No. 2, a 1-story adobe, built around a court, whole length about 300 feet, used for agent's offices, telegraph office, several rooms for dwelling, storerooms, shops, etc., whole in bad order, needs new roof, \$3,000; No. 3, several small adobe buildings in rear of No. 2, used for shops, storerooms, etc., \$200; No. 4, an adobe building, 1 story high, 32 by 52 feet, used as a meal shop, \$800; No. 5, an adobe building, used for doctor's office and hospital, in bad order, \$500; No. 6, a new stone building, 1 story high, 30 by 120 feet, with 4 cross partitions, built for storage, \$5,000; No. 7, a stone building, same size as No. 6, now building, for shops; No. 8, a frame steam gristmill, \$6,000; No. 9, a frame water gristmill (at Fort Apache), \$6,000.

a The statements giving tribes, areas, and laws for agencies are from the Report of the Commissioner of Indian Affairs, 1890, pages 434-445. The population is the result of the census.

The monthly rainfall for the year, 1889 and for the first 8 months of 1890 was as follows, in inches:

MONTHS.	1889	1890 (a)
Total.....	13.40	11.74
January.....	1.62	2.10
February.....	1.33	1.66
March.....	2.15	1.03
April.....	0.25	1.31
May.....	None.	None.
June.....	None.	None.
July.....	1.83	2.29
August.....	0.87	3.35
September.....	2.65
October.....	0.60
November.....	0.40
December.....	2.30

a Eight months.

The year 1889 was an unusually dry one, the Gila river having sunk into the sand on several occasions during the summer. During the months of August and September, 1890, the Gila was so high on a number of days that teams could not ford it, an unusual occurrence at that season of the year.

WHITE MOUNTAIN RESERVATION.

This reservation is situated in the eastern part of the territory of Arizona, all but a small portion lying north of the thirty-third parallel of north latitude. Its extreme length from north to south is about 95 miles, and its extreme width from east to west about 70 miles. The area is 3,950 square miles, or 2,528,000 acres. The northern portion is drained by the Salt river and its affluents, Canyon creek, Cibicu creek, Cedar creek, Mountain creek, and the east and north branches of the White river, while from the south the Black river is the only branch. The Gila river, with its only affluent, the San Carlos, drains the southern portion. This reservation is inhabited by all the Apache tribe, some Yumas, and a number of Mohaves. The Apaches comprise a number of distinct subtribes, but they will all be considered as 1 tribe in this report.

Of the 2,528,000 acres in the White Mountain reservation it is not probable that more than 12,000 acres can be cultivated. A scattered pine forest extends over portions of the eastern and northeastern part, and it is believed that a part of that plateau can be cultivated without irrigation. The arable portions lie in the valleys of the Gila and San Carlos in the southern portion, and in the valleys of the tributaries of the Salt river in the northeastern part, but none can be successfully cultivated without irrigation. The greater part of the land not included in the more mountainous portions will afford some pasturage when the rainfall is sufficient, but during the dry season the water supply can not be depended upon for stock. Between San Carlos and Fort Apache, also north of the latter place, lie extensive tracts called malapai (volcanic) plains, well covered with small rocks, intermixed with a sticky clay, which, when wet by the rains, is yielding and cohesive, making the roads almost impassible. Many miles of these plains grow little else than cactus, and some are grassy.

TIMBER SUPPLY.—There is a fair growth of pine timber in the eastern and northeastern portions of the reservation. The table-lands are also covered with a scattered growth of scrubby timber, mostly mountain oak, jack oak, and juniper. There is a sawmill in the eastern portion, run by steam, sawing lumber and shingles, which are drawn over a rough road to San Carlos. There is also a steam sawmill on the military reservation at Fort Apache. A little cottonwood timber grows in the valleys of the San Carlos and Gila rivers, but in the southern section mesquite is the only timber growing, and that is being rapidly exhausted. On Ash creek, near the center of the reservation, ash, walnut, sycamore, and cottonwood grow in limited quantities.

Large quantities of the acorns produced by the mountain oak are gathered yearly by the Indians, and they furnish a palatable, healthy, and nutritious food, which forms an important factor in their supplies for winter.

MINERAL RESOURCES.—It is said that extensive coal beds exist in the southern part near the Pinal mountains, but no thorough examination has been made. Extensive ledges of the finest limestone are worked near the Triplet mountains about 15 miles northeast of San Carlos agency. A limekiln in the canyon is burning a good quality of lime, to be used in erecting the new agency buildings. A fair quality of building stone is found within 5 miles of the agency, of which 2 new buildings have already been constructed.

The White Mountain and Cayotero Apache Indians are practically the same, the former name having first been applied to them by the whites. They have always lived on the lands embraced in their reservation limits, but the larger portion of them were north of Black river on mountain slopes and in the canyons of the White mountains. The majority of them now reside along White Mountain creek or river or in valleys or affluents of Salt river. They are arbitrarily and for convenience of control divided into 17 bands, each band being designated

by a letter of the alphabet, from A to Q. Formerly warlike and the terror of the plains, they were in part reduced to subjection by the military in 1870-1871, and since that time they have gradually become peaceable and quiet. They claim that as far back as their traditions go, 4 or 5 generations, they have lived in the region where they now are. At present they are making fair progress toward civilization.

The San Carlos Apaches formerly lived in and about Arivaypa canyon and in the Pinal mountains. They are indigenous to the territory of Arizona. They have been very warlike, and particularly hostile to the whites. They were formerly called Pinal and Arivaypa Indians, and have been on reservations since 1872, having been moved here from old Camp Grant reservation on the San Pedro river, Arizona. They are arbitrarily divided into 12 bands, each band being known by a letter of the alphabet, from A to L. They have been restless on their reservation until quite recently. At present they are quiet and fairly orderly and industrious, principally engaged in herding and agriculture upon a small scale.

A part of the Tonto Apaches have been on the reservation since 1872. They were brought here from old Camp Grant reservation with the Indians now bearing the name of San Carlos Apaches; a part, however, were brought here from Fort Verde, Arizona. The Tontos are in 7 bands, designated alphabetically from A to G. They formerly, prior to the incoming of the whites, lived in and about the country now called the Tonto basin, in the central part of Arizona. The Tontos were subjugated by military force in 1872, and have since that time and until recently been engaged in repeated outbreaks and have committed numerous deprivations. They are now quiet and fairly industrious, mostly engaged in cultivating small farms.

The Mohave Indians while in a wild state lived in the western and northwestern portion of the present territory of Arizona, along the banks of the Colorado river, ranging in an easterly direction. They were brought under partial subjugation in 1872, and entirely subjugated in 1873; they were placed on the Rio Verde Indian reservation (near Camp Verde), Arizona, and from thence moved to this locality in 1875. They are divided into 6 bands, each with a letter of the alphabet, from A to F. While they are natives of the westerly portion of Arizona, their raids and hunting trips, from their own traditions, extended over the entire territory. They are now quiet and orderly, but only moderately industrious.

The Yuma Indians formerly lived in what is now the southwestern corner of Arizona, along the banks of the Colorado. The Yuma Indians on the Yuma reservation number only a few, not exceeding 250. They shared the adventures of the Mohaves in the hostilities toward the government, and, like them, were reduced to subjection in 1872-1873 and placed on the reservation near Fort Verde, Arizona, and thence brought to this point in 1875. They are divided into 2 bands, A and B. They are now quiet and fairly orderly and industrious.—LEWIS THOMPSON, captain Twenty-fourth United States infantry.

FORT APACHE SUBAGENCY.

Fort Apache is a subagency situated nearly 100 miles north of San Carlos, near the northern boundary of the reservation. The altitude of Fort Apache is 5,050 feet. The highest temperature for 1889 was 101°, on July 2, the lowest was 6°, January 19; the highest for 1890 was 97°, July 8, the lowest was 50°, January 16. Latest frost, spring of 1890, May 12 (34.50°).

The monthly rainfall at Fort Apache for the year 1889 and for the first 8 months of 1890 was as follows, in inches:

MONTHS.	1889	1890 (a)
Total	16.99	16.41
January	2.24	2.26
February	0.88	2.40
March	1.85	0.82
April	0.47	1.39
May	None.	None.
June	None.	None.
July	2.67	5.10
August	2.87	4.44
September	1.02	
October	0.46	
November	0.55	
December	3.08	

a Eight months.

The Indians of the Fort Apache subagency are very much scattered through the valleys of the streams emptying into the White river, some of them being fully 75 miles from the subagency. The subagent estimates the number in each valley approximately as follows:

Total	1,920	Cibicu Creek valley	300
		Canyon Creek valley	100
Cedar Creek valley	210	Forest Creek valley	300
Carrizo Creek valley	610	White River (north and south)	400



TONTO APACHE.—WHITE MOUNTAIN RESERVATION, ARIZONA, 1891.

Though there exists no rigid system of allotting in severalty, most of the Indians claim their lands and have clearly defined limits, and are jealous of any encroachments.

The Indians in the vicinity of Fort Apache are self-supporting. They have received a number of wagons and sets of harness from the government, as well as some plows. They earn a portion of their subsistence by teaming from the railroad, hauling goods for the military and Indian departments. They are considered reliable and trustworthy.

EDUCATION.—There is no school at the Fort Apache subagency. The annual report of the government Apache Indian boarding school located at San Carlos Indian agency for the year ended June 30, 1890, is as follows:

APACHE BOARDING SCHOOL AT SAN CARLOS AGENCY.

Number of teachers, male	2
Number of teachers, female	3
Number of other school employés, male.....	5
Number of other school employés, female.....	3

Only 50 pupils can be healthfully accommodated, but 95, 64 boys and 31 girls, have attended the school 1 month or more during the year. Two boys and 5 girls have attended who were less than 6 years of age; all others were between 6 and 18 years. The average age of pupils was 8.75 years. School was maintained 10 months in the year. The average attendance during that time was 73.3. The largest average attendance was in June, 1890, being 85.4.

TOTAL COST OF MAINTAINING THE SCHOOL.

Total.....	\$9,286.87
Salaries of teachers.....	5,700.00
All other expenses.....	3,586.87

Housework, sewing, care of stock, and farming are taught in the school. Nine cows and 30 fowls are owned by the school.

SCHOOL BUILDINGS.

Buildings.	DESCRIPTION.	Use.	Dimensions (feet).	Value.
Total--5	All adobe.....			\$3,000
1	1-story.....	For school rooms.....	32 by 63....	1,000
2	2-story (in bad condition).....	For teachers.....	34 by 45....	500
3	1-story (long and narrow).....	Dormitory (4 rooms).....	21 by 106....	1,500
4	1-story (long and narrow).....	Dormitory (2 rooms).....	21 by 85....	
5	1-story (long and narrow).....	Dining room and kitchen..	21 by 90....	

Of the salaries paid, the principal received \$900; 2 teachers, \$600 each; 1 teacher, \$720; the industrial teacher, \$840; matrons, \$600; cooks and other help, \$1,440; making a total of \$5,700. The Mohave and Yuma children attend this school.

The tribes on this reservation seem obstinately averse to sending their girls to school. While the enumeration was being made they would often conceal their girls and refuse to tell where they were until they were informed that they could draw no rations and receive no annuities unless the girls were produced. The cause of such refusal was probably the fact that the practice of selling girls for wives, even when quite young, prevails here. A person who wishes a wife for himself or his son will often buy a young girl and take her into his own family and rear her until she attains the marriageable age. Should the parent send the girl to school, the probabilities are that she would not consent to a sale; hence the parent would lose her merchantable value.

IRRIGATION AND CROPS.—At the beginning of the spring of 1890 there were in the Gila and San Carlos valleys, for agricultural purposes, 19 dams across the streams within the limits of the reservation and about 60 miles of irrigating ditches. Good crops of wheat and barley were grown, but unusually heavy rains fell in the latter half of July and first part of August, causing a freshet in the Gila and San Carlos rivers, which destroyed all the dams but one and injured the ditches to a great extent. From the mountains come down many arroyos or sand washes, with a channel sunken from 3 to 8 feet below the general level on the river bottom. The water for irrigation must be conveyed across these in flumes made of lumber. Nearly every one of these flumes was destroyed by the floods. Many fields of corn were making a fair growth, however, owing to the unusual rainfall in August. Wheat and barley crops are sown in the late fall and harvested in June, and corn crops are planted on the same ground after the harvest. The winter corn in the San Carlos valley was nearly ripe on the 1st day of September, 1890. Corn usually yields 18 to 20 bushels per acre. An accurate account of the wheat ground at the subagency mill for the year 1889 shows 18,000 bushels, all of which was grown on the reservation. The corn crop for 1890 was estimated at 700,000 pounds, or more than 12,000 bushels.

The agent is making great efforts to encourage fruit growing among the Indians. As a result grapes were plucked from the vines and peaches were on the trees on the 2d day of September, 1890. Indians can not await the slow process of growth, but want immediate returns. Fruit trees grow too slowly for them.

About 1 man in 7 is a polygamist; 87 of the men have 2 wives each, and 9 have 3 each. In the neighborhood of San Carlos this practice is supposed to be a source of endless strife and bickering, but it is not so looked upon at Apache. Prostitution is fearfully on the increase among them, and, as a consequence, loathsome diseases are making great inroads. According to the testimony of the agency physician, about 1 death in 10 is caused by this dreadful scourge.

A road leads across this reservation from the towns of Wilcox and Bowie to the mining town of Globe, to the northwest. This road is frequented by a great number of unscrupulous persons, who do not hesitate to furnish the Indians with whisky and arms and ammunition. The United States government, in order to be prepared for any emergency, has 5 companies of troops stationed at San Carlos, and has also caused about 60 Indian scouts to be enlisted in the service. Four companies of cavalry and infantry are stationed at Fort Apache and 2 companies at Fort Thomas, on the east side of the reservation.

Many of the whites are distrustful of the Apaches.

POPULATION AND STATISTICS OF APACHES.

At White Mountain (males, 1,017; females, 1,104)	2,121
At Fort Apache (males, 821; females, 1,099)	1,920
Total	4,041
Occupations:	
Farmers	664
Scouts	34
Interpreter and issue clerk, 1 each	2
Children under 1 year of age (males, 97; females, 98)	195
Married	1,383
Polygamists (87 having 2 wives and 9 having 3 wives)	96
Number of Indians who wear citizens' dress wholly	11
Number of Indians who wear citizens' dress in part	1,775
Number of Indians over 20 who can read	5
Number of Indians under 20 who can read	26
Number of Indians under 20 who can write English	21
Number of Indians who can use English enough for ordinary conversation	51
Number of Indian children of school age	903
Number of dwelling houses used by Indians	6

SUPERSTITIONS AND MORALS.—Some of the Apaches have received religious impressions from the whites. They believe in evil spirits that can be persuaded by gifts or frightened away or overcome by tricks, but the good with them is a mere negative, being only the absence of evil. They are intensely superstitious. At the death of one of their number they burn the cabin, if he should die in one, and all the goods and chattels of the deceased, and kill his animals if he has any. In case of sickness the medicine man shouts, sings, and beats the tom-tom to persuade or frighten the evil spirit away. If a husband dies, the widow cuts her hair short and keeps aloof from all others for a stated time.

As a punishment for adultery on the part of the wife the nose was formerly cut off, but this practice seems to have been abandoned in later years, for on a visit among them, and after observing about 3,000 Indians, I saw only 7 women so disfigured, and they had reached or passed the middle age.

FOOD SUPPLY.—The government issues rations of salt, beef, coffee, sugar, and a little flour to the Apaches at San Carlos. The agency owns a steam flouring mill there, which is well patronized by the Indians, who bring their wheat and exchange it for flour. They commence eating their corn as soon as it is in the roasting-ear state. They raise sorghum in small quantities. They do not manufacture it, but cut the green stalks and chew them. The mesquite bush furnishes an abundance of beans, which are gathered, dried, and pounded into pulp, making a palatable and rich food. In the fall the women and children spend weeks in the mountains gathering acorns from the mountain oak. A single family will sometimes collect several hundred pounds of them. The Apaches will not eat fish.

Game is now very scarce. Occasionally a bear is found in the mountains, but it is not disturbed. The cattle that are slaughtered for their beef supply are driven to the slaughter house, and the dressing is superintended by a white employé. On such occasions the Indian women assemble in numbers and do not allow a scrap to go to waste, the viscera, vitals, and brains being taken and eaten as choice morsels. In their mode of cookery they have made little advance beyond the lowest savages.

MODE OF DRESS.—A few wear some part of civilized apparel; an exceptional few don the whole attire. A man may sometimes wear a hat, a coat, or a pair of shoes or boots, but no other article of civilized attire. The dress of the men consists usually of a pair of drawers and a piece of cloth fastened to the "gee-string" and hanging down in the

rear as low as the knees. This cloth is about half a yard in width. A similar piece hangs in front as low as the middle of the thighs. A shirt of some kind worn on the outside completes the costume. In warm weather the drawers are often omitted. Sometimes moccasins are worn and a red handkerchief is tied about the head. No toilet, male or female, is ever complete without beads. They are worn about the neck, wrists, and arms, are sewed on to the dress and moccasins, and dangle from the ears. The hair is the object of solicitude. It is usually worn long and loose, the men dividing it in the middle and combing it back, and the women and girls cutting it square in front just above the eyes, the other portion being combed back. The women smear their hair with soft clay, and then wash, comb, and dry it. The pith of the yucca cactus is pounded and macerated in water until a foam is produced similar to soapsuds. This is then used to cleanse the hair.

The raiment of the old women, who usually stay about the camps and work, is generally very poor and scanty, a skirt about the loins reaching below the knees, with a piece of cloth fastened loosely about the shoulders, being the only dress usually worn. The younger women wear a full calico skirt, reaching to the feet, and a blouse waist, with sleeves having the inevitable beads, from which is suspended a small circular mirror, protected by a disk of tin. Sometimes they indulge in the extravagance of a woolen shawl, always red, drawn tightly around the head and body.

There were 75,000 feet of lumber sawed from timber on the agency during the year ended June 30, 1890.

CRIMINAL STATISTICS OF INDIANS AT THE SAN CARLOS AGENCY FOR THE YEAR ENDING JUNE 30, 1890.

Number of Indians killed by Indians	4
Number of Indians committing suicide	1
Number of Indians killed by whites	4
Number of white persons killed by Indians	5
Number of Indians punished by civil authority for crime	15
Number by hanging	7
Number sentenced to penitentiary	8
Number sentenced for whisky selling	3
Number of negroes who have been punished	3

THE GILA RIVER AND VALLEY.—The valley of the Gila river near the southeast corner of the White Mountain reservation is from 1 to 2 miles in width. The valley grows gradually narrower to a point about 4 or 5 miles above the mouth of the San Carlos river, where it is closed by the near approach of the foothills. Only a limited portion of this valley is susceptible of cultivation, for the reason that much of the surface lies too high above the river bed for practical irrigation. The river bottom expands again at the mouth of the San Carlos and continues down the river to within a mile of the head of the Gila canyon. That portion of the bottom land extending from the San Carlos agency buildings to near the head of the Gila embraces hundreds of acres of good land and could be irrigated and cultivated (portions of it are now cultivated by the Yumas and Apaches), but it is exposed to the sudden and destructive freshets that sometimes rush down the gorges between the foothills, hence dams on the Gila must be made strong and the irrigating ditches should be carefully located and constructed. About 2,500 Indians live in the portion of the valley described. As previously stated, the Gila river is subject to sudden rises, and often sinks into the sand during the dry season. These characteristics make the raising of grain in this valley very precarious.

THE MOHAVES.—Those of the Mohave tribe of Indians who live on the White Mountain reservation are principally scattered along the Gila river on the south side from about 10 miles above the San Carlos agency down to the mouth of the San Carlos river. They live on the narrow bottom lands of the Gila river, sometimes, however, as the weather becomes warmer, removing to the hills and mesa land. Good crops can be grown on the Gila bottoms provided the water supply is sufficient. Owing to the conformation of the land, they are exposed to another danger: sometimes tremendous rains fall among the foothills, and the water, collecting in the gulches and ravines, rushes down the arroyos, washing away the soil and crops and destroying flumes and ditches. The land in a state of nature is well covered with a growth of mesquite, with scattering cottonwood trees.

REPORT ON INDIANS TAXED AND NOT TAXED.

STATISTICS OF THE MOHAVE TRIBE.

Males	291
Females	260
Total	551
Married	239
Single	312
Number who wear citizens' clothes wholly	30
Number who wear citizens' clothes in part	521
Number under 20 years of age who can read	28
Number under 20 years of age who can write English	22
Number who can use English for ordinary conversation	32
Number who can not speak English	519
Number of children under 1 year of age	17
Number of children of school age	99
Number of births during the year	17
Number of deaths during the year	17
Causes of death:	
Fever	7
Consumption	2
Heart disease	1
Grippe	1
Old age	1
Cholera morbus	1
Unknown	4

AGRICULTURAL STATISTICS.

PRODUCTS, STOCK, AND LAND.	Number.	Value.
Total value for the year		\$5,561
Bushels of wheat raised	1,300	1,755
Bushels of barley raised	1,732	1,585
Bushels of corn raised	1,731	1,661
Tons of hay cut	40	560
Total value of live stock		29,895
Horses owned by tribe	453	18,120
Mules owned by tribe	13	845
Cattle owned by tribe	618	10,506
Bronchos owned by tribe	14	140
Sheep owned by tribe	128	256
Domestic fowls owned by tribe	72	28
Aeres cultivated	400	
Aeres under fence	450	
Rods of fencing built during the year	80	
Cords of wood cut	750	4,500
Product of Indian labor sold to government		6,565

CONDITION OF THE MOHAVES.—The habitations are rude in the extreme. A few posts in the ground, with brush set up about them and some crosspieces thrown on the top, suffice to partially intercept the sun's rays. This is the summer habitation. A low hut close by, with a piece of duck or sheeting to protect them against rain, generally suffices for winter. A few plaster up the sides of the hovel and cover the top with mud. Some of the members of the tribe own sheep. They do not spin or weave the wool, but keep the sheep for the flesh only. Like the Apaches and Yumas, they are filthy in their habits, feeding upon the offal of slaughtered animals and eating various kinds of vermin.

REMARKS.—Only a few of this tribe wear citizens' dress, the great majority still adhering to the Indian costume, perhaps because of poverty. The women usually wear a calico skirt, reaching to the ankles and fastened about the hips, and a blouse or tunic covers the upper portion of the body and arms. The old women seem to be almost destitute of modesty, which to some extent characterizes the younger class of women, and a scant piece of cloth pinned or tied around the shoulders is usually the only upper garment or covering. The women may be seen carrying immense loads of hay, fodder, wood, or provisions. They also provide water for the family, often carrying 5 or 6 gallons on their backs for a long distance. Baskets in the form of an olla, ingeniously made from willow and grass, are made to do the duty of pails or other water vessels.

Like most other Indians the Mohaves are fond of strong drink. They manufacture tiswin from fruit or corn and indulge in a spree whenever they can. Prostitution is becoming quite common among them, and venereal diseases are becoming widespread. These two causes tend to diminish the vitality of the tribe, and they are scarcely maintaining their position as to numbers.

As the Mohaves occupy a portion of the White Mountain reservation with the Apaches and Yumas, the remarks concerning temperature, rainfall, and irrigation under the head of Apaches will apply to the Yumas and Mohaves. Rations are issued to them the same as to the Apaches.

YUMA TRIBE OF INDIANS.—A remnant of this tribe lives on the White Mountain reservation near the San Carlos agency, on the south side of the Gila river. They speak the Navajo language and bear a very close resemblance to that tribe, with which they often intermarry.

Temperature, rainfall, and irrigation, have been fully discussed under the head of Apaches, and the tribe has made about the same progress in every respect as that made by the Apaches.

The following tables show the amount of agricultural products and other statistics:

STATISTICS OF THE YUMAS.

Males	128
Females	112
Total.....	<u>240</u>
Occupations:	
Farmers.....	61
Scouts	16
Blacksmiths.....	1
Total.....	<u>78</u>
Married	97
Single.....	143
Polygamists, each with 2 wives.....	2
Number who wear citizens' dress wholly	15
Number who wear citizens' dress in part.....	205
Number under 20 years of age who can read.....	9
Number under 20 years of age who can write English	7
Number who can use enough English for ordinary conversation	10
Number of children under 1 year of age.....	6
Number of Indian children of school age.....	51

AGRICULTURAL STATISTICS.

PRODUCTS, STOCK, AND LAND.	Number.	Value.
Total value for the year		\$3,900
Bushels of wheat raised	842	1,136
Bushels of barley raised.....	2,068	1,654
Bushels of corn raised.....	864	830
Tons of hay cut	20	280
Total value of domestic animals.....		20,007
Horses owned by tribe.....	308	12,320
Mules owned by tribe.....	4	260
Cattle owned by tribe.....	431	7,327
Sheep.....	11	22
Domestic fowls	197	78
Acres of land cultivated during the year.....	200	
Acres under fence.....	250	
Cords of wood cut	300	1,800
Product of Indian labor sold to the government.....		3,747

MORAL CONDITION.—The Yumas are peaceable and inoffensive. They are not often accused of theft, but they are inveterate gamblers, often going to the gaming ground on one pony, leading another, and perhaps returning on foot. The men waste much of their time in idleness. Prostitution seems to be alarmingly on the increase, and venereal diseases are growing more and more prevalent. Of the 5 deaths recorded for the year ended June 30, 1890, 2 were caused by syphilis.

DWELLINGS.—They live in the same kind of huts that have protected them for many generations. Some posts set in the ground, with poles and brush laid transversely on the top, serve as a shade during the hot weather. A smaller one close at hand, covered with willows and dirt, or possibly a piece of canvas, protects them during the more inclement season. The inside is destitute of all furniture except that of the most primitive kind.

RELIGION.—They seem to have no forms or objects of worship. They are ignorant and superstitious. It is said that the hooting of an owl or the barking of a coyote inspires them with terror, and report has it that they never kill the one nor the other. They do not believe in a good spirit, but are always intent on driving away evil spirits, which cause them all their unhappiness. For example, health is not brought about by any good spirit, but sickness is occasioned by the presence or instrumentality of an evil spirit that must be propitiated or frightened away by noises, incantations, or importunity. They do not believe in a continued future state of existence, but in

their imagination the dead hover about for a time, and are eventually forgotten. There is no account of any christian missionary among any of the tribes of this reservation.

RATIONS IN ARIZONA.—The Yumas, Mohaves, and Apaches, located at the San Carlos agency, draw rations from the government, distributed weekly.

The agent was buying beef cattle in the open market to supply rations. The practice was to have the steers driven into the corral on Wednesday evening of each week. They were weighed and slaughtered on Thursday morning and cut up and distributed on Thursday afternoon and Friday morning. The quantity issued per person was 1.5 pounds. Three lots of cattle weighed in as many weeks would be classed as third-class steers in Iowa, their average weight being about 940 pounds. They appeared to have been driven hard, apparently having had scant feed.

The Pimas and Papagos raise and kill their own cattle. Some of the Pimas are good butchers. They furnished the agency and school at Sacaton with beef.

SUGGESTIONS AS TO THE ARIZONA INDIANS.—In regard to the future Indian policy, I would suggest that good, practical, reliable men be sent among the agency Indians to instruct them in farming and stock raising. Especially should they be encouraged to grow alfalfa, with which to feed cattle and horses. Their ponies are small, with their buttocks and necks degenerated by careless breeding and hard usage. Medium-sized horses should be sent among them for breeding purposes. Some large horses have been sent out for that purpose, but for obvious reasons they were but little used.

My opinion is that the Indians on the Salt River, Gila River, and Papago reservations should be encouraged to give more attention to cattle raising, as they are but a few miles from railroad transportation and could ship their cattle if they were fat. Almost all of the men are natural herders. The government would gain by giving individual Indians small bands of cattle and agricultural implements to those who want to learn farming.

As to army control, I venture the suggestion that 200 mounted Indian scouts, officered by efficient white men, would preserve order among the Apache tribe much better and vastly cheaper than the garrisons that are maintained there at this time. If they are to remain, however, I would move them just outside the reservation. On the other hand, the present garrisons are great consumers of food and produce, and the camps furnish a ready market for many things produced by the Indians, but I believe the day is past when a large force of soldiers should be maintained on reservations.

NAVAJO AGENCY.

Report of Special Agent WALTER G. MARMON on the Indians of the Navajo reservation, Navajo agency, New Mexico, and Apache county, Arizona, March, April, and May, 1891.

Name of Indian tribe occupying the Navajo reservation: (a) Navajo.

The unallotted area of this reservation is 8,205,440 acres, or 12,821 square miles. The outboundaries and some portions of the reservation have been surveyed and subdivided. It was established, altered, or changed by treaty of June 1, 1863 (15 U. S. Stats., p. 667), and executive orders October 29, 1878, January 6, 1880, and two of May 17, 1884. (1,769,600 acres in Arizona and 967,680 acres in Utah were added to this reservation by executive order of May 17, 1884, and 46,080 acres in New Mexico restored to public domain, but again reserved by executive order April 24, 1886.)

Indian population June 1, 1890: 17,204, including roaming Navajos and children of school age hid away.

The Navajo agency is in New Mexico, but the reservation extends into Arizona as well as into Utah. It is convenient therefore to give some particulars as to the reservation as a whole under Arizona. (b)

a The statements giving tribes, areas, and laws for agencies are from the Report of the Commissioner of Indian Affairs, 1890, pages 434-445. The population is the result of the census.

b The following letter, under date of August 2, 1891, was written by Surgeon Washington Matthews, United States army, Fort Wingate, New Mexico:

"I know of no reliable estimate of the number of the Navajo tribe since they were released from captivity at the Bosque Redondo (Fort Sumner) in New Mexico. During their captivity reports of the War and Interior departments at that time gave accurate enumerations of these people. Very few escaped captivity. During their stay at the Bosque their numbers were greatly reduced by disease. Since their return from captivity to their own lands they have undoubtedly increased steadily until about 2 years ago, when in one winter some 800, it is estimated, died of a disease of the throat, the precise nature of which I can not learn. I was not here at the time. Since that epidemic has passed away they have been doing well again. All statements as to their population made in the last 20 years are conjectured.

"There is little need to ask what we will do with the Navajos if they lose their reservation. 'How shall we locate them then?' you inquire. Under the ground instead of on top of it, is the only reasonable answer I can frame. Unless mines are found in it, the Navajo reservation will probably never sustain as many white men as it now sustains Indians. If good mineral deposits should be found in the Carrizo and Tuimcha mountains, where prospectors have recently sought for them, the Navajos will, of course, lose their lands and herds in a very few years and become vagabonds.

"Of the Navajos it can be said that they are neither too proud nor too lazy to work, but are willing to earn money at any sort of labor they can find. When the Atlantic and Pacific railroad was built through this country, 10 years ago, much of the grading was done by Navajo laborers, and white men working on the line with them have told me that they liked them as companions 'on the job'; that (unlike Chinamen) they kept up prices, and were agreeable fellows to work with. We have employed them at Fort Wingate in making adobes, digging excavations, etc., and have, strange to say, found them more satisfactory laborers than the Zuñi Indians. Before the Indians who once camped around here were compelled to go on their reservation they performed all manner of domestic services for us. I have often seen a stalwart warrior work all day at a washtub for \$1, and when he was in no real need of the money, and intended, perhaps, to devote it to no higher purpose than staking it on a game of monte. Many of them are inclined to be provident. I believe if they knew how to bank or accumulate money they would do it; but apart from the increase of their herds it is difficult for them to amass property. One way they have is in covering their persons, bridles, saddles, etc., with silver ornaments. This is done, not so much for purposes of adornment, as for a means of accumulating what Mr. Wemmick calls 'portable property'. One provident Indian silversmith has now deposited in my safe \$165. They are said to be inclined to steal from one another, and it is necessary that portable property should be kept well in sight. For myself, I must say I have never had a Navajo steal anything from me, though I have given them every chance to do so. As you know, the Navajos are well-to-do, self-sustaining, and prosperous. I have rarely known one to beg.

"There is no notable physical deterioration as yet among the Navajos. Their general health and power of resisting disease seems to me as good now as when I first came among them, 11 years ago.

"Consumption and scrofula, those worst enemies of reservation Indians, have not yet troubled the Navajos."

NAVAJO RESERVATION.

The Navajo Indians claim that they came from the north to this region before the advent of the Spaniards, at a time when the ancestors of the modern village Indians yet occupied many of the cliff buildings. The names of the bands or clans are as follows: "Man that went armed", "Black sheep", "Close to stream", "Big water", "Meeting of the water", "Blackwood", "Leaves", "Red bank", "Band that escaped".—D. L. SHIPLEY, United States Indian agent.

The Navajos have inhabited the mountains and plateaus of Arizona and New Mexico between the San Juan and Little Colorado rivers ever since they were discovered. By their contact with the progressive Pueblos the Navajos have acquired many useful arts, among them spinning and weaving. Their blankets, woven in looms, are of great excellence, and bring prices ranging from \$25 to \$100. They cultivate the soil, raising large quantities of corn, squashes, and melons. Colonel Baker, United States army, in 1859 estimated their farms at 20,000 acres; their agent's report for 1875 places the cultivated lands at 6,000 acres. Their principal wealth is now in horses, sheep, and goats, having acquired them at an early day and fostered their growth, so that they now count their horses by the thousand and their sheep by hundreds of thousands. Notwithstanding the excellence of their manufactures, their houses are rude affairs, called by the Spaniards jackals and by themselves hogans, being small, conical huts of poles, covered with branches in the summer and in winter with earth. Like the Apaches, they made incessant war on the Mexicans, who made many unsuccessful attempts to subjugate them. The expeditions against them on the part of the United States by Douphan in 1846, Wilkes in 1847, Newby in 1848, and Washington in 1849 were practically failures. Colonel Sumner established Fort Defiance in 1851, but was forced to retreat, and all other attempts to subdue them were defeated until the winter campaign of 1863, when Colonel Kit Carson killed thousands of them and compelled the remainder to remove to the Bosque Redondo, on the Pecos river, where 7,000 were held prisoners by the government for several years. In 1868 a treaty was made with them under which they were removed to Fort Wingate, and the following year they went back to their old home around Fort Defiance and the Canyon De Chelly, where a reservation of 5,200 square miles was assigned them. They came back reduced in numbers and subsisting on the bounty of the government; no stock, save a few broken-down, sore-backed horses, a few sheep and goats, not to exceed 10,000 in all; the unhappy remnant of the once most powerful tribe of the southwest, only thankful for the boon of being allowed once more to return to the land of their forefathers. A count made in 1877 put their number at 11,768,3,000 of whom were said to come directly under the civilizing influences of the agency. In 1877, although they produced largely, they were dependent upon the government for two-thirds of their subsistence. In 1890, 11,042 (enumerated) Navajos lived on that portion of the Navajo reservation in Arizona, 5,169 in New Mexico, and 993 in Utah or roaming. They are entirely self-sustaining. They are a forcible illustration of the success of the Indian as a herder.

In July, 1869, in accordance with one of the stipulations of the treaty of 1868, a survey was made establishing the boundaries of the original Navajo reservation—61 miles east and west by 84 north and south, the north boundary being the north line of Arizona and New Mexico, the reservation lying almost equally in the above-named territories. At the same time the valleys were laid off into townships and subdivided into sections, preparatory to locating the Indians on lands in severalty in compliance with another section of the treaty.

In November of 1869 a count was made of the tribe in order to distribute among them 30,000 head of sheep and 2,000 goats. Due notice was given months before, and the tribe was present. The Indians were all put in a large corral, and counted as they went in. A few herders, holding the small herds that they then had bunched on the surrounding hills, were not in the corral. The result of this count showed that there were less than 9,000 Navajos all told, making a fair allowance for all who had failed to come in. At that time everything favored getting a full count; rations were being issued to them every 4 days; they had but little stock, and in addition to the issue of sheep and goats there were also 2 years' annuities to be given out. The season of the year was favorable, the weather fine, and they were all anxious to get the sheep and goats and annuities. Once since there was another issue of 12,000 sheep. Whatever they now have of live stock more than that number is due to their own care and labor.

The original reservation, which comprised about 5,000 square miles in 1869, has been increased from time to time, until now it aggregates 12,821 square miles; besides, Navajos in fact occupy the greater portion of the Moqui reservation, containing another 5,000 square miles. Even this scope of country is not sufficient. Navajo settlements can be found from the Big Colorado river on the west to within 20 miles of the Rio Grande on the east, from the San Juan river on the north to the Dahl and Gallinas mountains on the south—an area of country fully 250 miles east and west by 200 miles north and south. Over this immense area they tend their herds and on portions of it raise their crops, and are as peaceable and honest as the majority of the people who surround them.

TOPOGRAPHY AND RESOURCES.—Fort Defiance, the agency for the Navajos, is situated in Arizona, 6 miles north of the south boundary of the reservation. A never-failing stream of water flows through Canyon Bonita and through the agency lands and forms a junction with Black river about 1 mile south from the agency. The soil in this locality is very rich and produces all kinds of grain and vegetables in great profusion. A number of Indians

are settled in the vicinity of the agency, and do a little farming, very crude, and with no system. Black river valley, lying just east of the agency, is a narrow, fertile tract 25 or 30 miles long. It could be made very productive, and has sufficient arable land to furnish farms for fully 100 families. Black river would furnish sufficient water for irrigation if properly stored and saved. Small grains, wheat, rye, and barley, fall sowed, would do well; also corn and vegetables and some kinds of fruits. There is not a fruit tree at the agency. Even a few cottonwood trees planted by the troops while there have been used up or have died from ill use. North of the agency, in the vicinity of Washington pass and west of the Tunitcha mountains, there are streams abounding in fish and containing sufficient water to irrigate all the arable land in that section. A few families are settled along these streams, and do a little farming, raising the finest quality of wheat, corn, beans, pumpkins, squashes, and melons.

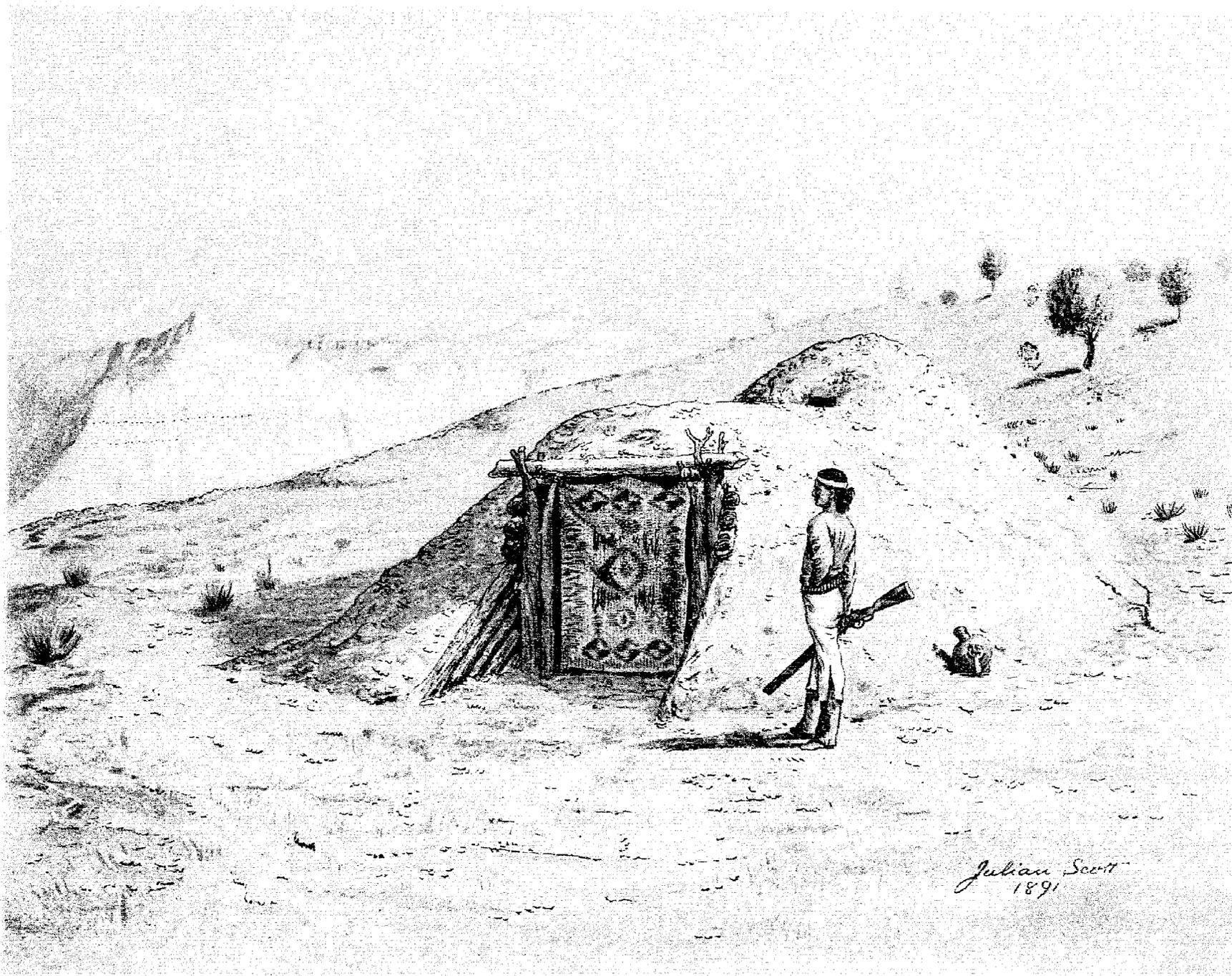
This section is finely timbered, pine, oak, piñon, cedar, and aspen being in abundance. This could be made a farming as well as a grazing country. Sixty miles north of the agency and south of the Carrizo and west of the Tunitcha mountains is another fine valley, the Lu-ki-chu-ki, through which runs the Lu-ka-chu-kai or Carrizo creek. A number of families are settled along this river, who raise wheat, corn, and vegetables. There are several peach orchards. In this section many of the Indians have built good stone houses and more are anxious to follow the example set them. They complain that they can not get lumber for roofs, doors, and windows. This valley is over 30 miles long. The river running through it empties into the De Chelly or into the Chinlee river. There is a store on this stream, near Round Rock. The traders there say they will buy 200,000 pounds of wool this season. Thirty miles east, at Sa-lee, is located another store where the traders expect to buy 25,000 pounds of wool this year, outside of the pelt and hide trade. The Carrizo country, lying to the north, is broken and mountainous. This range runs east and west, with numerous small streams and valleys both to the north and south, where some farming is done, but it is principally a grazing country.

The Carrizo mountains are said to be rich in gold and silver ore, and the nomad miners threaten to go in and take possession, causing not a little apprehension to the Indians and the authorities. I would respectfully recommend that a commission be appointed to investigate this matter and satisfy the government whether this is a valuable mineral country. That fact established, then treat for it; but in the meantime allow no intruders, even if it be necessary to quarter a company of troops there permanently.

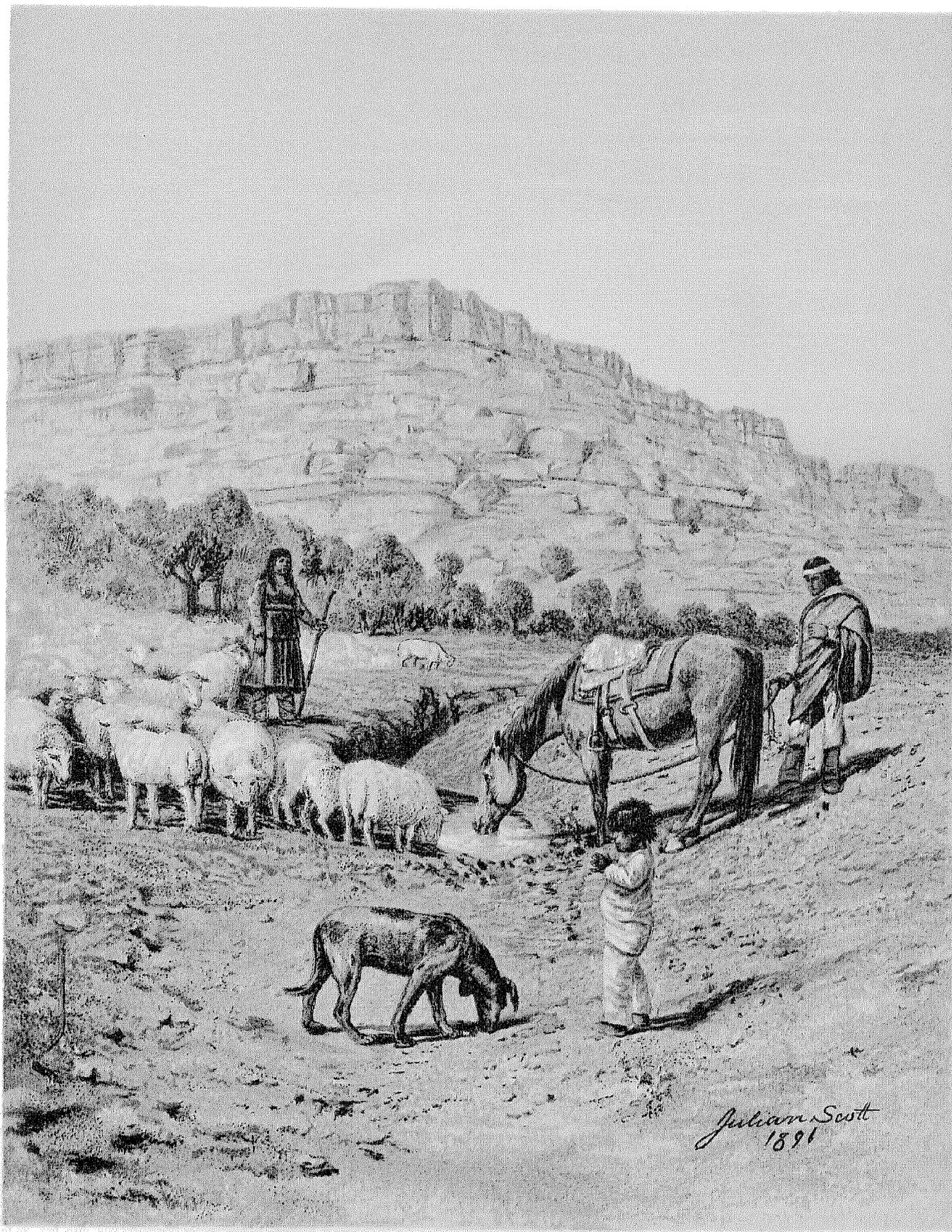
The Chinlee valley lies about 30 miles west of the agency, and is from 1 to 3 miles wide and fully 60 miles long. The climate is mild; altitude about 5,000 feet. The soil is very fertile, and will produce every variety of grain, vegetables, or fruit of the most favored localities. This valley is covered with old ruins. There are probably 200 families who do a little farming in this valley. The rivers De Chelly and Chinlee, which form a junction about 30 miles north from the south boundary of the reservation, furnish abundance of water for all purposes of irrigation. In Canyon De Chelly are many peach orchards. These were cut down during the war, but grew again from the roots, stronger and better than before. Here they raise corn and melons, and here the Indians from the mountain districts gather to feast on the good things the toil of the Indian husbandman provides. The trader at Pueblo, Colo., stated that some years he bought 200,000 bushels of corn from this valley, and could have bought more if he had needed it.

The Chuski valley lies east of the Chuski and Tunitcha range, about 15 miles east of the agency, is from 12 to 20 miles wide, has abundance of fine soil, and is irrigated in the spring by the numerous streams running from the ranges just mentioned and the melting snows from the mountains. There is an unusually large rainfall for this country. This is the corn valley. In 1869, while surveying a line 12 miles north and south, we were in a cornfield the whole way. This was in August, and the stalks were higher than men's heads and the ears of corn a foot or more long. The altitude is about 5,000 feet. The Chuski and Tunitcha mountains, with an elevation of from 7,000 to 10,000 feet, form the western boundary. This valley extends from the south boundary of the reservation to the San Juan river on the north, a distance of more than 70 miles. Numerous springs of good water are scattered through it and along the foothills on the west. The mountain summits are covered with pine timber, many small lakes of clear water, and abundant grass. The slopes are covered with pine, cedar, and oak suitable for fuel and fence posts. In many of the small valleys coming down from the mountains are to be found farms and some peach orchards. Twenty acres of agricultural land here, with irrigation and properly farmed, would be sufficient for one family. What is true of this valley is also true of the Chinlee, Black river, Lu-ki-chu-ki, Sa-lee, and all the other farming localities. All these valleys are covered with old ruins, and bear evidence of having at some time long past supported a dense population.

To the north and west of the agency, as far as the San Juan river on the north and the Big and Little Colorado rivers on the west, lies a vast extent of broken and mountainous country cut up by deep canyons and washes, with small fertile valleys and wooded table-land, sandy wastes, and volcanic ridges and peaks, many springs, and an occasional running stream. This wild section is the home of many Navajos, who furr in the valleys and pasture their flocks of sheep and goats and herds of horses and cattle. Here they live from year to year in undisturbed peace, very seldom visiting the agency. They seem to be prosperous; their herds are increasing. Here are found fine horses and herds of cattle. The climate is salubrious and, while not a farming country in the true sense, all crops grow and do well. The nearest trading stores to this section are at Round Rock on the east and at Moencopie



NAVAJO HOGAN OR HOUSE.



*Julian Scott
1891*

NAVAJO FAMILY WITH FLOCK OF SHEEP.

NAVAJO RESERVATION, ARIZONA, AUGUST, 1891.

and Blue canyon on the west. The Navajos are said to be hospitable and always glad to meet white people, yet no agent has visited them. They seem to be, as it were, working out their own salvation as best they may. The trader at Round Rock stated that a large proportion of the wool he buys comes from this section. Away in the far northwest it is reported that rich minerals exist. In this section, west of the De Chelly river, garnets, amethysts, opals, and other beautiful stones are found in great numbers. Although geologically speaking this locality is diamond bearing, no diamonds have as yet been found. In the territory of Utah and just south of the Colorado river are located the famous Navajo mountains, supposed to be rich in gold and silver, but jealously guarded by the Navajos and some Piutes who live in that section.

Off the Navajo reservation to the west, over the greater portion of the Moqui reservation southwest to the valley of the little Colorado river, and beyond to the San Francisco mountains to the west, the Canyon Diablo and the Sunset mountains on the south, are many settlements of Navajos who do a little farming, but who are for the most part stock raisers. A few have made permanent locations and desire to secure title to the land. The same is true of those who live south and east of the reservation in New Mexico, in the vicinity of the Alamoita, 60 miles south of Laguna, where there is a settlement of about 100, who have built good houses and located their land. At the Canyon Cozo, 15 miles northeast of Laguna, about 20 families have filed on land; they have good houses, have constructed a large reservoir, and are living as their neighbors do. In Water canyon, 10 miles north of Cubero, are located 5 or 6 families; in the vicinity of San Mateo are others. North of Olaves Mariano a band numbering some 200 or 300 are anxious to locate and obtain patent for the land. At Rameh, south of Fort Wingate and east of Zuñi, and in the Chaco canyon and that vicinity, are settlements of Indians who farm a little and are making progress in the civilized manner of living.

There is within the limits of this reservation as large a proportion of arable land suitable for the cultivation of all the ordinary grains, vegetables, and fruits as can be found elsewhere in New Mexico or Arizona, excepting the Rio Grande valley. The greatest altitude does not exceed 7,000 feet, and the lowest is 4,000 feet. The climate is equable, and except in the heights the cold is not more severe than in the upper Rio Grande as far south as Socorro. The rainfall and snow is greater than in many other farming sections in southern Utah and southwestern Colorado. In higher altitudes the snowfall and cold are less than in northern Ohio, and fall grains, wheat, rye, and barley, and the hardier fruits, such as apples, would do well. A good system of irrigation is required.

HOUSES.—The common winter habitation of the Navajo is a sort of mud-and-stick structure in the form of a Sibley tent, made by placing 3 or 4 strong forked poles in the ground at an angle at equal distances, which are locked together at the top, while smaller poles are laid against these at an angle of 45°, the spaces being covered with bark or sticks, and the whole covered with dirt. A doorway opens to the east. A blanket is used to close it, dropping down from the top. The doors are about 2 feet wide and 4 feet high. An aperture is left in the top for the escape of smoke. The fire is built in the center of the "hogan", as the house is called. Hogans are made of different sizes, according to the number of people in the family. In the summer they generally construct a shelter of boughs; some of the well-to-do buy wall or officers' tents and use them. These tents, pitched amid the trees on some distant hill and suddenly seen, along with herds of sheep and horses in the distance, make up a scene very refreshing to a hungry traveler and a jaded horse.

Many are building good storehouses, particularly in the farming localities. This is notably so in the Chuski, Lu-ki-chu-ki, and Chinlee valleys and Canyon De Chelly. The generally accepted idea that the Navajos, on superstitious grounds, will not live in houses is fallacious. Many of them are anxious to build houses and live like white people. One clan, the Kin-e-a-nies, say that a long time ago their forefathers lived like the white people. The word Kin-e-a-nie means those who live in houses, being derived from the word "kin", which means houses.

INDUSTRIES.—The principal industry of this tribe is raising sheep, goats, horses, and cattle. I shall give only the return of census district No. 9, which I enumerated: (a)

Sheep and goats	247,687
Horses	13,665
Mules	308
Burros	441
Cattle	1,259
Population of district	2,313

The Navajos are successful stock raisers. Careful and patient, they guard their flocks most jealously. The men and larger boys look after the horses, and the women and girls and smaller boys, as a rule, take care of the sheep herds. They are now emphatically a pastoral people. They have sufficient water, abundance of good grass, plenty of good protection for herds, and a mild climate. It is estimated that the wool clipped this year will approximate 1,500,000 pounds, outside of sheep and goat pelts.

They own but comparatively few cattle, and these do well. Their horses, as a rule, are not large, although in the northwest, toward Utah, they raise fine, large horses, crosses from stock obtained from the Mormons. They delight in horse races.

^a The Report of the Commissioner of Indian Affairs, 1890, pages 472-473, gives for the whole Navajo reservation: 30 acres cultivated by the government, 8,000 acres by Indians; 100 rods of fence made during the year; 3,000 Indian families engaged in farming or other civilized pursuits; 500 bushels of wheat, 100 bushels of oats and barley, 30,000 bushels of corn, 200 bushels of vegetables, 197,000 pounds of pecan nuts produced; \$208 earned by freighting; value of products of Indian labor sold, \$180,000; stock, 250,000 horses and mules, 1,000 burros, 6,000 cattle, 700,000 sheep, and 200,000 goats.