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MOWRY

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ARIZONA AND SONORA

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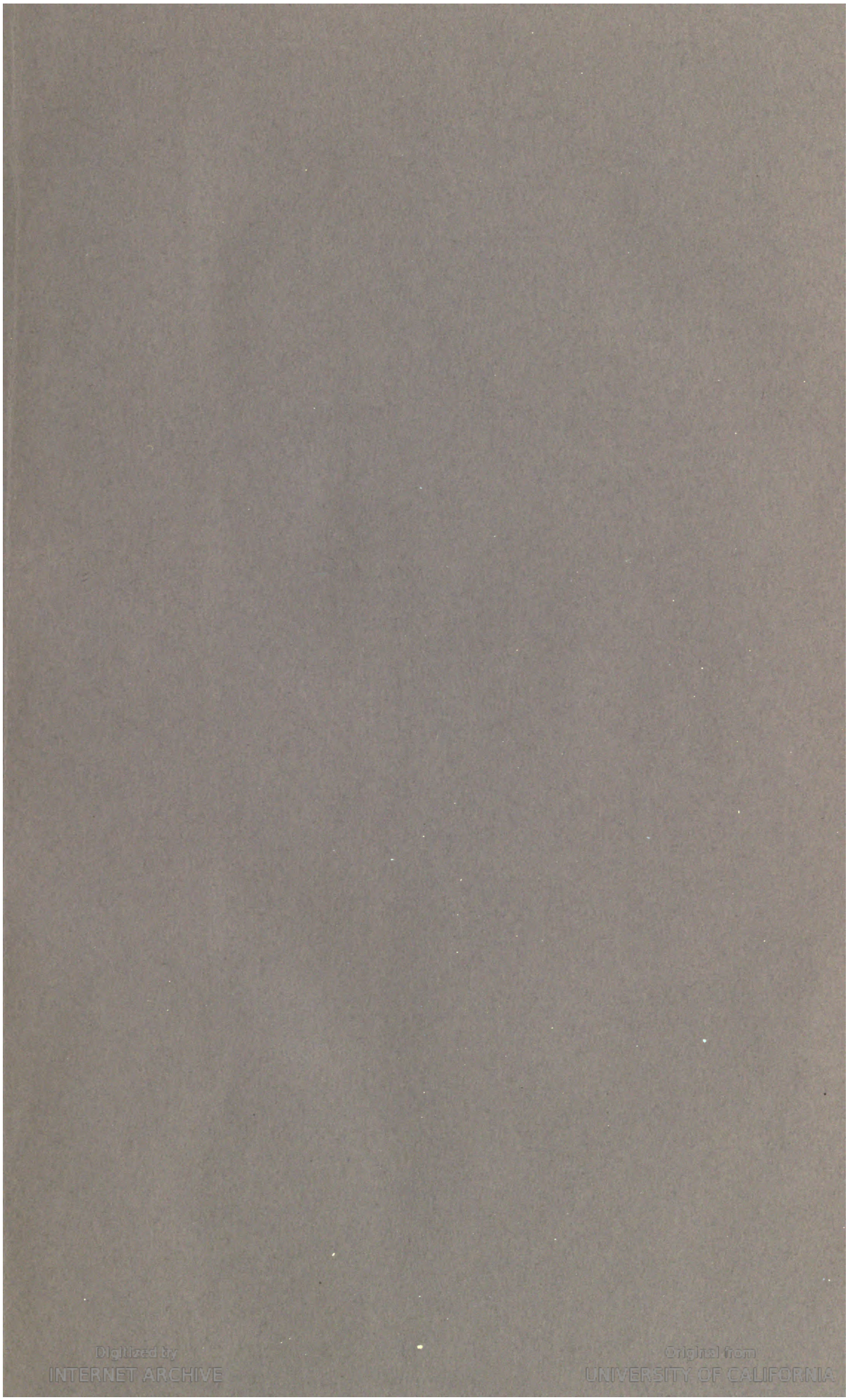

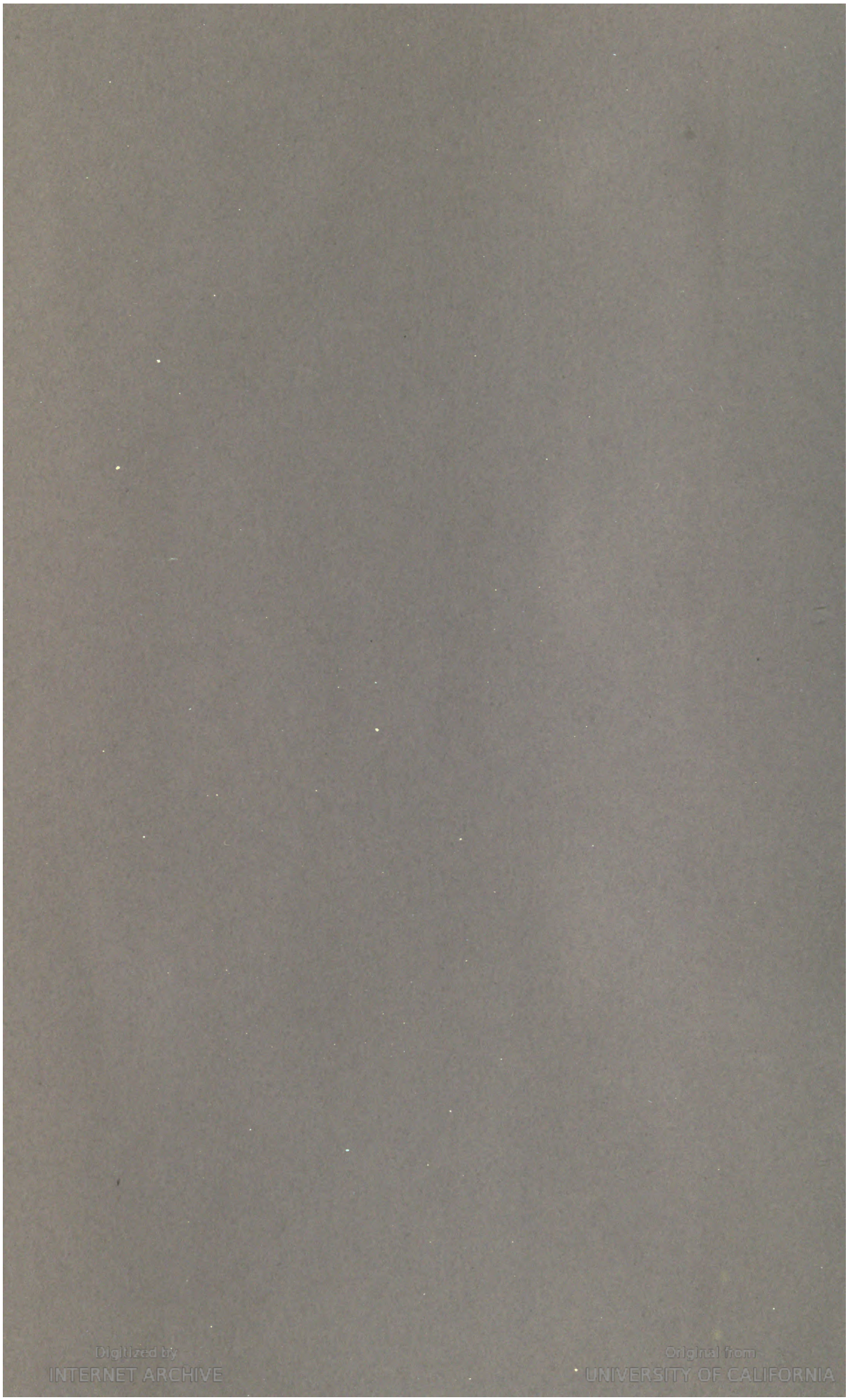

THE GEOGRAPHY AND RESOURCES OF ARIZONA & SONORA:

An Address before the American Geographical & Statistical Society

BY HON. SYLVESTER MOWRY,
OF ARIZONA.

New-York, February 3, 1859.

PUBLISHED BY THE SOCIETY.

WASHINGTON:
HENRY POLKINHORN, PRINTER.
1859.

Mr. President and Gentlemen of the

Geographical and Statistical Society,

Ladies and Gentlemen:

The word Arizona is undoubtedly derived from the Aztec. In the original it is Arizuma, and the change is a corruption into the present word, which is accepted as Spanish. We have no decided information as to its meaning, but the impression among those who have been curious enough to investigate, is that it signifies "silver-bearing." This impression gains strength from the fact that the Arizona mountains are very rich in silver, and that a tradition of a silver mine, called La Arizona, of incredible richness, still exists among the Mexican people near the frontier of our newly-acquired Territory. The proposed Territory of Arizona is bounded on the north by the parallel of latitude 33° 40′; on the east by Texas; on the south by Texas and the Mexican States of Chihuahua and Sonora; and on the west by the Colorado river, which separates it from California. This great region is about seven hundred miles long, with an average width of about one hundred and forty miles, and contains nearly 100,000 square miles. It is twice as large as New York; embraces within its borders three of the largest rivers on the continent west of the Mississippi, viz: the Rio Grande, the Gila, and the Colorado of the West. The Colorado is the only navigable stream, and by its waters and those of the Gulf of California, Arizona is placed in easy communication with San Francisco and the Pacific coast. The natural outlet for the productions of Arizona must be through a port on the Gulf of California, and the acquisition of Arizona necessitates the possession of Sonora. That portion of Arizona now occupied, and to which public attention is now attracted in so remarkable a degree, has been better known heretofore

as the Gadsden Purchase. It was acquired by purchase from Mexico, during the mission of General Gadsden, at a cost of ten millions of dollars. In the original treaty, as negotiated by General Gadsden, a more southern boundary than the one adopted by the Senate of the United States in confirming the treaty, was conceded by Santa Anna. The line at present is irregular in its course, and cuts off from our Territory the head of the Santa Cruz river and valley, the Sonoita valley, the San Bernardino valley, the whole course of the Colorado river from a point twenty miles below the mouth of the Gila river, and, worse than all, the control of the head of the Gulf of California, and the rich and extensive valley of Lake Guzman, besides a large and extremely valuable silver region, well known both to Mexicans and Americans—the Planchas de la Plata. General Gadsden's line included nearly all the territory south of the Gila river to the thirty-first parallel of latitude—all the advantages above mentioned—and gave us the mouth of the Colorado river.

The Gadsden purchase is attached by act of Congress to the Territory of New Mexico. At the time of its acquisition there was scarcely any population except a few scattering Mexicans in the Messilla valley, and at the old town of Tucson, in the centre of the Territory. The Apache Indian, superior in strength to the Mexican, had gradually extirpated every trace of civilization, and roamed uninterrupted and unmolested, sole possessor of what was once a thriving and populous Spanish province.

In the possession of the writer of these notes is a map drawn in 1757, over one hundred years ago, presented by the Society of Jesuits to the King of Spain. The original of this map is now in the archives of the Mexican Government. It was copied, with the notes relating to the Territory, and to Sonora, Chihuahua, and Sinaloa, by Captain C. P. Stone, late of the United States Army. The map bears the inscription, "*Carte levee par la Societe des Jesuites, dediee au Roi d' Espagne en* 1757."

The copy of the map and the accompanying notes are certified as accurate by the officer of the Mexican Government in charge of the archives.

My information, therefore, upon the early history of this comparatively unknown domain, is accurate and reliable. As early as 1687, a Jesuit missionary from the province of Sonora, which, in its southern portion, bore already the impress of Spanish civilization, descended the valley of Santa Cruz river to the Gila. Passing down the Gila to its mouth, after exploring the country, he retraced his steps, penetrated the country north of the Gila river for some distance, and ascended the Salinas or Salt river, and other northern branches of the Gila. The explorations of this energetic priest did not stop here. Proceeding east, he explored the valley of the San Pedro and its branches, thence along the Gila to the Mimbres, and probably to the Rio Grande and the Mesilla valley. Filled with the enthusiasm of his sect, he procured authority from the head of the order in Mexico, and established missions and settlements at every available point.

The reports of the immense mineral wealth of the new country, made by the Jesuits, induced a rapid settlement. There are laid down on the map before me more than forty towns and villages. Many of these were of considerable size. There were a few north of the Gila, and several on the lower Gila, near the Colorado. The Santa Cruz and its tributary valleys teemed with an agricultural and mining population. Thousands of enterprising Spaniards cultivated the rich valley of the San Pedro, and scattered settlements flourished at every suitable stream and spring at the foot of the mountains towards the Rio Grande. The notes before me say:

"All these settlements and missions were founded in fertile valleys, and by streams and springs, which produced luxuriant crops of wheat, corn and beans, and in many parts grapes and other foreign fruits were cultivated."

In the western part of the Territory were the missions of St. Pierre, St. Paul, St. Matthias, St. Simond, St. Francisco, Merci, the ranches of Eau Cheri, Eau de la Lune, and others;

on the Santa Cruz the missions of San Xavier del Bac, Santiago, San Cayetano, and San Philipe, the towns of Tucson, Tubac, Regis, San Agusta, and many others. San Xavier del Bac is still in existence. It is a mission church of great size and beauty, magnificently ornamented within; forty thouand dollars in solid silver served to adorn the altar. Upon the San Pedro river where the missions of St. Mark, San Salvadore, San Pantaleon, Santa Cruz, and the towns of Quiduria, Rosario, Eugenia, Victoria, and San Fernando—the latter at the mouth—with many more. To the east some small settlements were found on the Valle del Sauz, on the Mimbres, at the copper mines north of the Mimbres, and to the south the immense grazing and stock-raising establishment of San Bernardino, where since have been raised hundreds of thousands of cattle and horses. The Indians in the vicinity of the missions were reduced first to obedience by the Jesuits, and then to slavery by the Spaniards.

The notes referred to above contain the names and localities of more than a hundred silver and gold mines which were worked with great success by the Spaniards. The survey of the Jesuit priest about 1687 was repeated in 1710, with renewed discoveries, and consequent accession of population. From this time up to 1757 the conquest and settlement of the country was prosecuted with vigor, both by the Jesuits' Society and Spanish Government.

The missions and settlements were repeatedly destroyed by the Apaches, and the priests and settlers massacred or driven off. As often were they re-established. The Indians at length, thoroughly aroused by the cruelties of the Spaniards, by whom they were deprived of their liberty, forced to labor in the silver mines with inadequate food, and barbarously treated, finally rose, joined with tribes who had never been subdued, and gradually drove out or massacred their oppressors. A superior civilization disappeared before their devastating career, and to-day there is scarcely a trace of it left, except scarcely visible ruins, evidences everywhere, of extensive and hastily-

deserted mining operations, and the tradition of the country. The mission of San Xavier del Bac, and the old towns of Tucson and Tubac, are the most prominent of these remains.

From 1757 down to 1820, the Spaniards and Mexicans continued to work many valuable mines near Barbacora, and the notes in my possesssion speak of many silver mines, most of which contained a percentage of gold. "The San Pedro gold mine in 1748 was worked with extraordinary success." Among the mines anciently worked, as laid down in the authorities heretofore referred to, were the Dolores, San Antonio, Casa Gordo, Cabrisa, San Juan Batista, Santa Anna, (which was worked to the depth of one hundred and twenty yards,) Rosario, Cata de Agua, Guadaloupe, Connilla, Prieta, Santa Catarina, Guzopa, Hurstano, Arpa, Descuhidara, Nascosare, Arguage, Churinababi, Huacal, Pinal, and a great number of others, which it would only be tedious to mention.

Every exploration within the past few years has confirmed the statements of the ancient records. The testimony of living Mexicans, and the tradition of the country, all tend to the same end. Colonel A. B. Grey, Colonel Emory, Lieutenant Michler, Lieutenant Parke, the Hon. John R. Bartlett, late of the United States Boundary Commission, all agree in the statement that the Territory has immense resources in silver and copper. Colonel Emory says in his report:

"On account of the gold mania in California I kept the search for gold and other precious metals as much out of view as possible, scarcely allowing it to be a matter of conversation, much less of actual search. Yet enough was ascertained to convince us that the whole region was teeming with the precious metals. We everywhere saw the remains of mining operations, conducted by the Spaniards, and more recently by the Mexicans."

The report enumerates at considerable length the various localities examined by Colonel Emory's party, and others, of which there could be no doubt.

The Hon. John R. Bartlett says of the "Salinas," one of the northern branches of the Gila, that it alone will supply

food for a great State. It must be recollected, in this connection, that the great mineral wealth of Arizona will call for and amply repay for the redemption and expensive cultivation of all the available lands, and that irrigation produces immensely greater crops than the other method of planting. Throughout the whole of Utah, irrigation has been resorted to with the greatest success. The soil in Utah, in no place that the writer saw it, could in any way be compared to that of the bottom lands of Arizona.

Captain Whipple, in his valuable report of exploration for the Pacific Railroad, published by order of Congress, crossed the upper part of the region alluded to, and which is watered by the Rio Verde and Salinas. He fully sustains me in my remarks on those rich valleys.

"We are in the pleasantest region we have seen since leaving the Choctaw country. Here are clear rivulets, with fertile valleys and forest trees. The wide belt of country that borders the Black Forest, and probably extends along the Rio Verde to the Salina and Gila, bears every indication of being able to support a large agricultural and pastoral population. The valley of the Rio Verde is magnificently wooded with furs and oaks, affording excellent timber. Ancient ruins are said by trappers to be scattered over its whole length to the confluence with the Salinas. We, therefore, seem to have skirted the boundary of a country once populous, and worthy of becoming so again. Besides the advantages already enumerated, the mountains in this vicinity bear indications of mineral wealth." Vol. 3, p. 93.

The notes above referred to, in the possession of the writer, speak of great farming and grazing establishments scattered over the whole face of the Territory, between 1610 and 1800, which produced abundant crops of cereals, fruits, and grapes. These statements are confirmed by the testimony of Major Emory and his report, where he enumerates several of the most extensive—by Gray, Bartlett, Parke, and Colonel Bonneville. Many of the ranches, deserted by the Mexicans on account of the Apache Indians, have upon them large, well-built adobe houses which must have cost the builders thousands of dollars. Many of these have been occupied under squatter titles by emigrants within the last few years. Of others, only

the ruins remain, having been destroyed by the depredations of the Indians, or by the heavy rains of succeeding years.*

The country east of the Rio Grande is a great plain, broken only by the Sacramento and Gaudalupe mountains. Except in the towns on the river there is no population. The Mescalero Apaches have until lately made settlements unsafe. The establishment of Fort Stanton, and the activity of the United States troops, have, however, reduced this once formidable tribe innumber and spirit, so that an early settlement of the fine country in the vicinity of the Sacramento mountains may be expected. I have not visited this portion of the Territory, but from persons in whom I have perfect confidence, I learn that there is a large and valuable district, offering great inducements to stock-raisers. A number of bold, clear streams, alive with trout and other fish; a good proportion of arable land, and an inexhaustible supply of oak, pine, hackberry, and other timber. In the Organ mountains, opposite the Mesilla valley, there are silver mines of great value. One of these, the old Stevenson mine—now known as the Fort Fillmore mine—has been purchased by New York capitalists, and preparations are making to develop its undoubted wealth.

The Rio Grande valley, including the well known Mesilla, contains a large extent of unoccupied arable land, with plenty of water for irrigation. Until lately, the protection afforded by United States troops has enabled the people to cultivate in safety, and during the last year nearly one hundred thousand bushels of grain were raised in the valley, besides a large number of cattle and horses. It is worthy of remark, that the settlements here, although mostly Mexican, have been made since the United States acquired the Territory, and that the lands are held under American title. The population is quiet, well behaved, and thoroughly American in feeling. It is estimated, and I believe correctly, that at least 50,000 people can be settled on the Rio Grande within the Arizona boundaries, and there are many attractions for the farmer and stock-raiser. West of the Rio Grande the country is a succession of *mesas*

* See Memoir of Arizona, by Lieut. Mowry, from which the foregoing description is taken.

or table lands, ascending gently for nearly ninety miles to the Sierra Madre, and thence westward for five hundred miles, gradually descending until they reach the Gulf of California. This extensive plateau south of the Gila, is broken by two well defined ranges of mountains, the Chir-aca-hui and Santa Rita, and by a number of isolated peaks, which assume something the form of a sugar-loaf, and are called by the Mexicans Picachos and Peloncillos.

The sun never shone on a finer grazing country than upon the three hundred miles west of the Rio Grande. The traveller has before him throughout this entire distance a sea of grass, whose nutritious qualities have no equal, and the stock-raiser in January sees his cattle in better condition than our Eastern farmer his stall-fed ox. Ninety miles west of the Rio Grande is the Mimbres river and valley. Passing over the dividing ridge of the Sierra Madre, with so gentle an ascent and descent as to make it almost imperceptible, you descend into a wide and beautiful valley, which at no distant day will support a large population. The banks of the river are covered with a fine growth of cottonwood, and above the usual crossing for emigrants, wild grapes and berries are found in great profusion. The Santa Rita del Cobre copper mine, of ancient fame, and a little to the northwest of the Mimbres, has lately been re-opened by a capitalist, who has already began to reap the reward of his enterprise. One hundred and thirty thousand pounds of this copper were sold a few months since to the Chihuahua mint for thirty-five cents per pound. A quantity has been sent to London and to New York to be experimented on. It is claimed that the superior malleability and ductility of this copper must make the demand for it very great. The Mimbres river sinks before reaching the line of Mexico. Some statements, which I have never been able to authenticate, make it flow in very rainy seasons into Lake Guzman. The Suance or Valle de Sauz is the next valley on the line of the emigrant road. The waters of this stream are very limited and intermittent. As it approaches the Gila the valley becomes better,

but it will never be available for extensive agriculture. The San Pedro river and valley, two hundred and fifty miles west of the Rio Grande, is par excellence the agricultural district south of the Gila. The valley is wide, very rich soil, and is considerably over one hundred miles in length. Owing to the depredations of the Apaches, no settlements have yet been made in this valley. There is, near the junction of the San Pedro with the Gila, and at the mouth of the Arivypa, a most beautiful and fertile region. A fine growth of ash covers the valley. The Santa Rita mountains, which separate the San Pedro and Santa Cruz, contain inexhaustible supplies of pine and oak, besides untold millions of the precious metals. A military post of four companies at the mouth of the Arivypa would open this entire country to settlement.

Still following the emigrant and mail road fifty miles, brings us to the old Mexican town of Tucson and the valley of the Santa Cruz. Like most of the streams, the Santa Cruz is intermittent, sinking and rising at irregular intervals. A portion of this valley is covered with a heavy growth of cottonwood. The mountains in the vicinity contain pine and oak, and the extensive tracts of grazing lands south to the Mexican line, are covered thickly with the nesquit—the best fuel in the world. The town of Tucson now contains about a thousand inhabitants It once had three thousand, but the Indians, who desolated the whole of the Territory, had driven away all but about two hundred at the time of the Gadsden Purchase. Nine miles from Tucson, as you go up the valley of the Santa Cruz, is the old mission church of San Xavier, to which I have alluded elsewhere. It is stilll surrounded by a Papago Indian village, a few tame Apaches, and a few whites also live under the shadow of its towers. Incredible as the statement may seem, the church of San Xavier, with its elaborate facade, its dome and spires, would to-day be an ornament to the architecture of this great metropolis. No better evidence is needed of the resources and former prosperity of Arizona than is to be found in the now deserted missions of San Xavier and Tumacacori.

The town of Tubac, fifty miles southeast of Tucson, which now boasts a population of several hundred, was entirely deserted up to 1855, when it was re-occupied in part by the Sonora Exploring and Mining Company. They claim the town, and have given permission to a number of emigrants to occupy the old houses, and build new ones. Over what was once the towers of the barracks of the Mexican troops, now floats a banner bearing the arms of peace, a hammer and pick, the insignia of the company; and in the rooms beneath, which once echoed to the tread of the successful Apache fighter, are now sold the calicoes and cotton goods of Lowell, and all manner of Yankee notions. The great Huntzelman mine, the mines of Arivaca, Sopori and Santa Rita are within a circle of twenty miles from Tubac. Three miles from Tubac is the mission of Tumacacori. Its venerable walls now shelter political exiles from Sonora, and a few enterprising Germans, and its rich lands are cultivated by the American squatter. Twelve miles further up the Santa Cruz is the Rancho of Calabazas, claimed as the property of the Gandara family, of Sonora. The extensive buildings are occupied by American families, and the blacksmith's forge is installed in a room once dedicated to more delicate uses. The Sonoita valley, which opens into the Santa Cruz, near Calabazas, is the only one in any degree protected by the United States troops. It is about fifty miles long, in no place exceeding a mile in width, and generally much narrower. When I passed up it to Fort Buchanan, the whole valley was golden with grain. In one field there were one hundred and fifty acres of corn. I counted upon four stalks eighteen full-grown ears, and the average height of the stalks was fifteen feet. When it is borne in mind that this land was but just turned, the corn planted, and neither hoed or suckered, I am sure it will be conceded that there is some agricultural land of value in Arizona. On several of the farms two crops were raised last year, wheat and corn, wheat and beans, and other vegetables. The farmer during the past year found a ready market for his

produce, his purchasers being the troops and the Overland Mail Company. This valley is almost entirely taken up by an intelligent and adventurous American population; and here is almost the only place in Arizona where you find that greatest of all blessings on the frontier, American women.

The Santa Cruz and San Pedro approach each other near the Mexican line, and by way of Santa Cruz, a Mexican town at the head of the valley in Sonora, you can pass from one to the other with ease. The whole region between the Rio Grande and the Santa Cruz is broken with conical-shaped hills and mountains, called by the Mexicans peloncillos. At the foot of these hills are found springs, which afforded water to the immense herds of cattle and horses which once covered the country; and at many of these springs are found the ruins of buildings occupied by the herders. The hills are covered to the top with the gramma, and other nutritious grasses.

Twenty miles east of the Sonoita valley, and just north of the town of Santa Cruz, is one of the richest silver regions of Arizona.

The Wachupe mountain is believed to be inexhaustible in silver. The San Antonio and Patagonia mines, lately opened, promise a rich yield to their owners. One of these is of especial value, yielding, besides a large percentage of silver, 53 per cent. of lead, which is purchased readily by the surrounding mining companies, to be used in reducing their ores.

The once celebrated Compadre mines, lately re-discovered, are in this vicinity. The present fortunate proprietors found them after long and painful search. The shafts were found carefully concealed, partially filled with rubbish; and thirteen furnaces in tolerable preservation, prove how extensively the mines were once worked by the Spaniards. Here, as in the whole of Arizona, the work of prospecting and exploring has but just begun. The ores of this district are principally argentiferous galena.

West of the Santa Cruz, and south of the valley of the Gila

to the Colorado river, the territory is generally an irreclaimable desert. Its mountains abound in the precious metals, and a sufficiency of water for mining operations can usually be obtained without exorbitant expense. The celebrated Ajo copper mine, now known as the Arizona copper mine, is in this district.

Mr. Edward E. Dunbar, whose facile pen has lately presented to the public, through the columns of the *Daily Times*, some lifelike sketches of this portion of Arizona, was formerly the director of this mine, and the first I believe to demonstrate the fact that water could be obtained. I take much pleasure in bearing testimony to the conscientious regard for truth which characterizes Mr. Dunbar's statements; and although I am forced to differ with him in some of his conclusions, his knowledge of the country, gained by a long and painful experience, entitle his opinion to much respect. The Arizona mine will one day prove of immense value; like the rest of the mining companies, it needs the outlet on the Gulf of California. The valley of the Colorado is fertile, and will produce all the tropical fruits, as well as the cereals. The Indians, favored by the annual overflow, raise abundant crops of wheat, corn, pumpkins, melons and beans. The remains of extensive irrigating canals show that at some day long past, a large agricultural population lived here. The extreme heat of the climate in the summer months will prevent white labor from agricultural pursuits to any great extent. Rice, sugar and cotton are best adapted to the soil of the Colorado bottom. There is, in places along the bank, a fine growth of cottonwood, and the whole valley abounds with the mesquit. This is the only portion of the territory where the heat is excessive.

The valley of the Gila river, whose waters, flowing from east to west, divide the Territory nearly in the centre, four hundred miles long, can in most places be brought under cultitivation to a greater or less extent.

Since the discovery of gold, a number of farms have been opened, and hundreds of acres of rich land put under cultiva-

tion. The Gila empties into the Colorado, one hundred and twenty-five miles above the head of the Gulf of California. It is well to observe here, that the difference in soil in different latitudes has not been sufficiently appreciated. The same soil which under the climate of Oregon is barren and worthless, becomes under the more genial sun of Arizona, fruitful, and when irrigated produces the same extraordinary crops as are found in California.

The land cultivated by the Pimos on the Gila seems inexhaustible. Year after year they cultivate the same crops on the same land with nothing but water to enrich it, and there is no sign of failure.

The valley known as La Florida, near the mountain of the same name, in longitude 109°, is worthy of especial mention, as having at its head the ruins of a once flourishing town. A large population will again occupy it at no distant day. But little is known of the country north of the Gila; it is very mountainous, but contains several valleys of considerable size, nearly all of which bear the impress of an ancient and superior civilization. The principal northern tributaries of the Gila, are the Salado, the Tuberoso, the San Carlos, and the San Francisco, (sometimes called the Alamos.) The Salado, according to my informant, *Marcial*, an Apache Chief, has six small branches: four flowing from the east; two from the west. The Salado is the largest of all these streams, and has its source about latitude 34° in the Sierra Blanca mountains.

On all of these streams the Apache Indian cultivates crops, principally of corn. The band known as the Coyetero, Pinal, or Sierra Blanca, cultivate most; although they have had the least intercourse with the whites.

The Indians of Arizona are best classed as friendly and hostile. The friendly Indians are the Pimos, Maricopas, Papagos and Yumas, with a few scattering miserable tame Apaches. The Pimos and Maricopas occupy a beautiful and fertile tract on the Gila, one hundred and eighty miles from its

junction with the Colorado. A brave and hospitable race; they live in villages, and cultivate the arts of peace. Their regular fields, well-made irrigating ditches, and beautiful crops of cotton, wheat, corn, pumpkins, melons and beans, have not only gladdened the eye, but also given timely assistance to the thousands of emigrants who have traversed Arizona on their way to the Pacific. The costume of the Pimos is extremely simple, only covering their loins, and a small straw hat — except in the case of the Chiefs, who wear a sort of pantaloon of coarse cotton cloth. The Pimos and Apaches wage hereditary and fierce war; in which the Pimos are generally the victors. So high were their services valued by the Mexican government, as a barrier to the incursions of the Gila Apaches, that whenever they visited the Mexican towns, the authorities treated them with marked hospitality and kindness, making them presents of value, to be paid for by the public treasury. Much as we pride ourselves upon our superior government, no measures have been taken to continue our friendly relations with the Pimos—and to our shame be it said, it is only to the forbearance of these Indians that we owe the safety of the life of a single American citizen in Central or Western Arizona, or the carriage of the mails overland to the Pacific. The Maricopas live near the Pimos, and by contiguity and intermarriage have become similar in their customs. The Papagos resemble but are inferior to the Pinos; do not cultivate so much, and live in scattered villages in the central and western parts of the territory. The Apaches, tribe of fatal memory for Sonora, and all northern Mexico, are best classified under their modern names. The Mescaleros, east of the Rio Grande; the Mimbres, Mogollones, Chir-aca-huis, Coyeteros or Pinaleros, Sierra Blanca, and the Tontos. In the order I have mentioned them, west from the Rio Grande, all of these have their homes north of the Gila, except the Chiracahuis. Velasco says these tribes have no fixed residence, no common society, no positive antecedents; they are best compared to the prairie wolf, sneaking, cowardly, revengeful, quick to assassinate the weak, and to fly

from or yield to the strong. It is impossible for one who has not seen Northern Mexico, to imagine the desolation they have made in a country where nature has done so much. The name Infeliz Sonora—most unhappy—given by all the old writers, is most painfully true; from the Gila in latitude 32° 30′, to Guaymas in latitude 28°, their ravages are everywhere visible. Horrible as is the statement, more than one-fourth of the Apaches of to-day are Mexican captives, or their descendants. Not only ranches, and villages, and towns, but whole districts, have been depopulated, and the work is still going on. In small parties, and by different mountain passes, they descend into Sonora, surprise and attack a train of travelers or a town, massacre the men, and carry off the women, with such booty as they can hastily seize, to their haunts on the Gila.

I obtained from *Marcial*, a leading Apache chief, and still a Mexican, much valuable information respecting these Indians. He had been carried off while a child, and had become, like his captors, savage. Velasco says, "without hesitation it must be admitted, that under no good treatment does the Apache yield his barbarism, his perfidy, or his atrocity; notwithstanding the many treaties of peace made with the Pueblos, and the constant campaigns against them, upon the first opportunity they break faith, and become worse than before."

"Though it is incontrovertible that the Apaches are the most ferocious tribe on our borders, yet the same may be said, even of them who from the time of the conquest belong among us; they call themselves pacific, yet have never, generally speaking, had sympathy with the whites; they have not adopted our manners and customs, nor have we existing between us that confidence which inspires a same race, when they profess the same principles of social ties; in fact, during the whole period of time that they have been subordinates of our government, they have followed a system of contradiction and opposition against it as far as they were able. The unequivocal proof of this truth has been the frequent assaults that they have made

upon us under the pretext of foolish stories with which they were misled, and sometimes without any causes at all."

The whole number of Apache warriors does not exceed two thousand. I have investigated this subject with probably more care than any other person, and am satisfied the number is rather under than over the truth.

Being cowardly, they are afraid of Americans, and do not murder. Their depredations in our territory are mostly confined to stealing cattle, horses and mules. Arizona will have no peace, and her great wealth as a pastoral region must remain undeveloped, until the War Department sends a strong force, and reduces them by fear to absolute submission. They must be fed by the government, or exterminated. They know no alternative but to steal or starve; and Northern Mexico has been their prey for too many years for them to learn the arts of peace.*

The Navajoes are included by Velasco among the Apaches. They live in New Mexico along the 34th parallel, north latitude.

The Yumas, the remains of a once powerful tribe, live on the Colorado, near the Gila; they are quiet; sufficiently agricultural to subsist. A few years will leave only their name.

The climate of Arizona, except on the Lower Gila and the Colorado, is delicious; never extremely hot, with cool summer nights, it offers great attractions to those who desire more genial skies than those of the North. Snow never lays in the winter, seldom falls; frost is rare, though the nights are often cold, seldom freezing. The season for cultivating is long, fruits blooming in February and March. Cotton, corn, wheat, barley, tobacco, melons, grapes, peaches, and all the vegetables, yield profuse crops throughout the territory. The grape of the Rio Grande valley has no superior, and wine of good quality is manufactured from it. The rainy season in Arizona is from June to September, inclusive.

* Since this address, information has been received of the murder of several Americans by the Apaches.

Professor Henry has, I believe, demonstrated that no rain falls in Arizona or Sonora. I have not seen his paper, but understand it is a beautiful theory. It is much to be regretted, for his sake, although not for the country, that the facts are against it. Cultivation in Arizona is by irrigation. It is believed by those who are capable of judging, that with subsoil plowing, good crops can be obtained, and the results of one year are quoted in support of the theory. It will take a series of years to prove it satisfactorily to the farmer. The yield throughout Arizona is two crops from the same land in each year.

The population of Arizona to-day exceeds ten thousand souls, exclusive of Indians; two-thirds of it is established on the Rio Grande, in the towns of Mesilla, Las Cruces, La Mesa, Don Ana, Amoles, Santa Tomas, Santa Babara, Pichacho, and the surrounding ranches.* The American population of the territory is not far from two thousand—this is rapidly increasing, and the ensuing spring will see it vastly increased. The gold discoveries, the overland mail—which runs throughout the entire length of Arizona—the large amount of capital invested in the silver mines, together with the increasing movement westward of our people, will add largely to the already vigorous and enterprising population of the new territory. It must be added that there is no law or protection from the government; every man redresses his wrongs with the pistol or knife, or submits in silence.

The Gadsden Purchase was not originally an integral part of Mexico; it was acquired years after the Treaty of Gaudaloupe Hidalgo, and was only attached to the Territory of New Mexico as a temporary expedient. It must also be remembered that the Gadsden Purchase, with the portion of New Mexico which it is proposed to include within the limits of the Territory of Arizona, is separated from New Mexico proper by natural boundaries; that it derives no benefit from the present connection;

* Including the floating population of the Gila gold mines.

and that any opposition to the desired legislation arises from the Mexican population, which fears the influence of a large American emigration. Moreover, that New Mexico contains upwards of 200,000 square miles, and that its organic act provides for its partition; showing clearly that Congress anticipated, at no remote day, the settlement of the country by an American population, and its erection into several Territories and States. The only effect of the present connection of Arizona with New Mexico is to crush out the voice and sentiment of the American people in the Territory; and years of emigration, under present auspices, would not serve to counterbalance or equal the influence of the 60,000 Mexican residents of New Mexico. New Mexico has never encouraged American population. She is thoroughly Mexican in sentiment, and desires to remain so.

As a matter of State policy, the organization of Arizona is of the first importance. Situated between New Mexico and Sonora, it is possible now to make it a thoroughly American State, which will constantly exert its influence in both directions to nationalize the other two. New Mexico is at present thoroughly Mexican in its character and vote. Sonora, if we acquire it at once, will be the same. By separating Arizona from it, and encouraging an American emigration, it will become "the leaven which shall leaven the whole lump." By allowing it to remain attached to New Mexico, or by attaching it to Sonora, when acquired, the American influence will be swallowed up in the great preponderance of the Mexican vote. The Apache Indian is preparing Sonora for the rule of a higher civilization than the Mexican. In the past half century, the Mexican element has disappeared from what is now called Arizona, before the devastating career of the Apache. It is every day retreating further South, leaving to us, (when it is ripe for our possession,) the Territory without the population.

The American population is mostly concentrated in the centre of the Territory, in and near the Santa Cruz valley, and on the lower Gila, at the gold mines. The Overland Mail Com-

pany, by the establishment of these stations at intervals rarely exceeding twenty miles, have much facilitated intercourse and travel; and the emigration of this year will cluster around these stations, pouring a line of villages across the continent; in the language of the President, "a chain of American citizens which will never be broken." The establishment of the overland mail is not only one of the great triumphs of the age, but it is an element of civilization which none appreciates but the frontiersman.

The ores of copper found in Arizona and Sonora, are usually the sulphurets, principally grey. The ores of silver are auriferous galena, native silver, auriferous sulphuret of silver, black sulphuret of silver, sulphate of silver, sulphate of iron combined. The gangue is usually quartz or feldspar. I have before me many notes descriptive of various mineral localities, even to minuteness, but the limits of this address will not permit especial mention of them.

The development of the mineral wealth of Arizona has but just commenced, yet enough has been done to give a brilliant promise for the future. The Sonora Company, under the direction of Charles D. Poston, Esq., and more lately under that of Major Heintzelman, of the Army, have expended a large capital in opening and prospecting their rich possessions. The Heintzelman mine—so called after the President of the company—bids fair to become more famous than any of the great mines of old Mexico. From a late letter it is claimed that the ores thus far smelted, yield the astonishing average of $950 per ton. I saw this mine in September, of last year. About two hundred tons of the ore had already been extracted, and the yield from one small furnace was about one thousand ounces per week. At a cost of $30,000 the company have brought from San Francisco, and erected, amalgamating works, from which they expect to obtain $3,000 per day—a million a year. This mine has the most extraordinary reputation throughout Sonora. I found, in travelling through the State, that almost every shopkeeper knew the value of the ore. It was obtained from the

miners, who had stolen, and sold or exchanged it for goods. The Sopori mine, which has only been worked in a small way, promises also a rich yield. I have cut, with a penknife, native silver from ore taken from the Sopori.

San Antonio and Patagonia have been already mentioned, as well as the Compadre mines. Many others are known to exist, and their owners are only waiting for the protection of a Territorial government to commence work. Others are deterred by want of capital. Several hundred thousand dollars have been already invested in mines in Arizona, and several companies are now forming. It is my profound belief that the most colossal fortunes this country has ever known will be made from the mines of Arizona and Sonora. The Santa Rita copper mine, near the Mimbres, has already been mentioned, as has the Arizona. On the Colorado, forty miles above the mouth of the Gila, on navigable waters, a copper mine is being efficiently worked. It promises to be inexhaustible, and, from its advantageous position, must be immensely valuable. The ore contains a percentage of gold. Silver has also been found on the Colorado, also gold quartz. On the Gila copper is abundant. In fact, the Territory of Arizona seems inexhaustible in minerals. Iron, copper, silver, and gold are found in hundreds of localities. A plumbago mine was discovered during the past year.

Quicksilver is the only metal of which no mention has yet been made. I do not know of any in the Territory, though its existence is probable.

Of the great extent of the gold region of Arizona there can be no doubt. The late discovery of placers, or surface diggings, on the Gila, has long been anticipated. Emory, in 1849, expressed his belief in its existence. Many an emigrant, on his way to California, has found "the color." Senator Gwin informs me that he heard of gold on the Gila from emigrants at San Diego in 1849. All the frontiersmen and trappers unite in saying that coarse gold is found in the streams north of the Gila. Marcial, the Apache chief before mentioned, told

me the same. That gold, in quartz veins, exists in many parts of the Territory, we know, not only from ancient record and tradition, but from actual observation and experiment. A vein has been opened, and, as soon as it is safe, will be worked, in the Apache pass, four hundred miles east of the present placers. Almost every silver and copper vein yet opened shows, by close analysis, a trace of gold. In the Sopori mine it has gone as high as three per cent. At the Santa Rita del Cobre, the Mexican miners, after their day's labor is over in the mine' work the placers in the vicinity, making sure but small wages. Tradition tells us that many years since the ores of this mine were so rich in gold as to pay transportation to the city of Mexico on mule-back. A gold placer is believed to exist near a Papago village, south of Tucson. The evidence of rich gold placers in northern Sonora is indisputable. Work in them has nearly or quite ceased, on account of the Apaches, but the record of their past yield is enormous. The facts in reference to the present condition of the Gila gold mines in Arizona are simply these: At a point on the Gila river, about twenty miles from its junction with the Colorado, and in a succession of sand hills, gold was discovered in September, 1858. The emigrants who were still on their way stopped, and, the news reaching California, others came in. I visited the gold mines early in November, and found about one hundred men and several families. A town called Gila city had already been laid out, and temporary houses of brush and adobe were in the course of erection. I examined carefully for myself, and found that several men could afford to pay laborers $3 per day and their board to work for them. I saw more than twenty dollars washed out of eight shovelfulls of dirt—and this in the rudest manner, and by an unpractised hand. I saw several men whom I knew well would not have been there had they not been doing well, who told me they had made from $30 to $125 per day each. I purchased about $300 in gold dust out of a lot of more than $2,000. A portion of this dust is here, if any one is curious enough to wish to see it. Several hun-

dred men have come into the mines since I left Arizona. My letters give me no reason to suppose the mines have given out or shown any signs of failure.* The country at this point is not inviting, and there are always, at any gold diggings, men who do not and will not work, and who, if they cannot make a living by gambling, or feeding upon some one else, depreciate the country. Gold digging is the hardest of all work, and very precarious in the richest mines. A man who is earning a comfortable subsistence at home should hesitate long about giving it up for gold hunting. The old discoveries of gold on the Spanish trail from Utah to California in 1850, the later ones in Kansas, at Pike's peak, and in Arizona, together with the well-known placers of Sonora, establish conclusively the fact of the existence of gold throughout a great belt of the continent, from north to south. I am indebted to the Hon. George Bancroft for a copy of a curious and rare letter, which it is not out of place to mention here. It is dated at Madrid, in 1769, and is addressed to the Duke de Choiseul, minister of foreign affairs for France, by the French ambassador at the Court of Spain. He says:

[Extract.]

MADRID, 6 fevrier, 1769.

M. Galvès qui a passé dans les Californies, a aussi mandé qu'elles abondent en mines d'or et d'argent, et que ces provinces que l'Espagne ne connaissait pour ainsi dire que de nom, pourront, dans la suite, produire une augmentation de revenue, fort considérable.

(Signé,) OSSUN.

The conclusions to be drawn from the facts I have thus hastily set forth are these: That while Arizona cannot be called an agricultural State, she has a sufficiency of arable land to support a large population; that as a grazing and pastural region she has unsurpassed advantages; but her great wealth is found in her inexhaustible mineral resources. There

* Since this address, I have received discouraging accounts from the mines. S. M.

can be no doubt that if Arizona to day did not contain a single acre of arable land, her gold and silver, her copper and iron and lead, would some day make her one of the wealthiest of the States of the Union.

Sonora, of which western Arizona once formed a part, is so closely connected in interest with Arizona that a brief mention of her resources and condition is necessary to my subject.

Sonora is bounded on the north by Arizona, on the east by the Sierra Madre range of mountains, which separate it from Chihuahua, on the south by the river Fuerte, which separates it from Sinaloa, and on the west by the Gulf of California and the Colorado river, which separate it from lower California. Its capital is now Hermosillo, was formerly Ures, and, more anciently, Arispe. The government of the State is at present an absolute despotism, under a so-called constitutional Governor named Peschiera. This State, which contains every element of wealth and prosperity, is in the most miserable condition. Its people look confidently to the United States for relief. The belief in their annexation is entire; and while it is unpalatable to some, the great majority, satisfied that they can be no worse off, are ready to turn to any source which offers protection from the Apaches, and the exemption from a monthly revolution, and its consequence—pillage and massacre.

In the preliminary advertisement to *Noticias Estadistacas del Sonora*, by Don Jose F. Velasco, a work from which I have freely quoted, the author says:

"It is necessary to say, without equivocation, that if there be any State among those which compose the Republic of Mexico of which it is difficult to present exact statistics, that State is undoubtedly Sonora. Populated by an indigenous people, disseminated over the whole State, without laws or politics, and mingled with the nation of which it forms a part, it is very difficult to ascertain its numbers from its chiefs. It is for this reason that I have been only able to give approximatively the number of inhabitants. I have only undertaken

a work that at least approximates towards the truth, limiting myself to certain notices which may give light to other writers on the same subject."

The State of Sonora, thus called by its earliest people of whom we have any knowledge, derives its name, according to the best authorities, from *Sonot*, an Opata Indian word, which means *Senora*, or *Madam*. The Conquistadores were treated with great hospitality by the Opata Indians while visiting their rancherias or villages. As a mark of friendship, the Indians strove to imitate the Spanish pronunciation *Senora*, instead of using their own word *Sonot*, from which arose the corrupted word Sonora. Sonora has been divided, by various writers, into upper and lower Sonora—into Pimeria Alta and Pimeria Baja—and still further, into the subdivisions of Arizpe Cieneguilla and Horcasitas in the north, with Hostimuri Alamos and the Pueblas of the Mayo and Yagui in the south. The State formerly included Sinaloa, from which it was separated in 1830. It is said to be a part of the plan of the present Governor, Peschiera, to again unite these States as the basis of a new confederacy.

The people of Sonora are generally docile, and, making allowance for the bad system of government and the great misery in which they are found, are obedient to the constituted authorities—in fact, this remarkable docility amounts to weakness of character, and which ambitious revolutionary chiefs have taken advantage of to forward their own views. At the present date, the whole country is devastated by the Apaches. Daily, from all parts, reports are brought in that the Indians have destroyed ranches, killed the inhabitants, and depopulated whole towns. This has been the case for many years, and, after so much suffering on this account, without a prospect in view for the better, it is not surprising that the Sonoranese has lost his energy of character. He gambles, to divert himself and pass away time, and, without hope for the future, he allows things take to their course—a perfect fatalist. Many become desperate, and take unlawful measures to better their condition.

It only requires a skillful hand and good government to make the worthless Sonoranese of the present day a useful member of society. Comparatively few educated men are found in Sonora—a common education, consisting of reading and writing; and I believe that in the whole population it does not exceed five per cent. more, particularly in the frontier towns. A leading trait in his character is hospitality, and "let the morrow take care of itself" is a common expression in their mouths. He will share his last mouthful, and considers it a matter of course for the stranger to take his place at his board.

The women are kind-hearted, obedient to their husbands, who rule them generally with a rod of iron. Strong-minded women are not known, and usually peace reigns in their homes.

Sonora, for the most part, is mountainous, watered by several small rivers, abundant in mineral wealth; in fact, is considered to be one of the richest States of the Mexican Disunion. There is a sufficiency of agricultural land to maintain a large population; but the true richness of Sonora consists in its mines of siver and gold, and the great facilities for raising stock. The mines at present are but little worked, owing to the Apaches and revolutions, but laboring under all these disadvantages she is still able to export annually several millions of dollars in silver bars and gold dust, large quantities of stock to California and the Territory of Arizona; also flour to the adjoining State of Sinaloa.

The most famous mines and mining districts (minerals) are those of Alamos, situated in the district of that name, and property of the Almadas, Gomez y Urreas; mine of Jubiate, near Hermosillo, property of the Verdes; mineral of San Xavier, San Marcial, St. Teresa de Jesus, property of Ynigo, Cubillas & Co. The famous mine of mineral of Babacanora, at present worked by a French company; mine of Babamachi, the richest mine discovered within the last two years, having yielded $1,000 to the nine hundred weight of ore, and very abundant in ore—at present the yield is not so great; mine of

Corral Vieja, gold, silver and lead; La Canensa, silver, copper and lead; La Guachuca las Planchas de Plata.

On the opposite side of the mountain of Babacanora, at the distance of about a league and a half, is found the Rial del Carmen, celebrated for its great mine of that name, and which has been worked to a great extent. It still yields a good profit to the Gambussino.* Ores are still found which yield from ten to twenty marcs to the batta. Ores—native silver, auriferous silver, gangue, quartz.

This mine was worked in the first years of the Spanish conquest of Mexico by Hernan Cortes, in later years by a company of Spaniards, who found a chart and description of the mine in the archives of Mexico. It is remembered by the oldest inhabitant of Sinoquipe that native silver, six inches wide, was cut out of the vein, and melted in the refining furnace without more treatment than a lead bath. This company, owing to the changes which took place in the Mexican territory, stopped work, carrying off with them several trains of mules loaded with silver; the mine then partly filled with water, and the Gambussinos, who have been and are the cause of the destruction of so many good mines, commenced operations, cutting out the upper pillars and supports, and in a short time the mine fell in, leaving treasure to an enormous amount buried in the ruins; in later days shafts have been sunk on the same lode, worked, and ores rich in silver have been encountered, paying from fifteen to twenty marcs the nine cwt. In the rubbish which was thrown out of the old mine a comfortable subsistence is gained by washing in battas—quantities of grain silver being found which, refined in the furnace, yield from twenty-five to thirty per cent. pure metal. This, and several other mines of Sonora, have been abandoned, not from the ores having failed or depreciated in value, but from the want of energy in the Mexican race. The mines in the hands of the

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* The Gambussino is a sort of mining filibuster, who works regardless of the future of the mine.

Spaniards yielded enormous profits to the miner; they were men of indomitable enterprise, who employed capital, science, and spared no expense to succeed in their adventures; whereas the Mexican is poor, without energy, and too lazy to trust, or help himself. Formerly Sonora the rich was a proverb; now Sonora the poor is a stubborn fact—but not from the want of the elements of richness. These once developed, she will once more become Sonora the rich, and may be great.

"In the Rial of Babacanora a miner is enchanted, and his hopes raised by seeing the beautiful formation which the whole district presents, more particularly that portion which comprises the 'Sierra del Oregano,' which, viewed from the houses, presents a magnificent spectacle. My poor pen cannot do it justice, so I shall content myself in stating a few facts concerning it which have come to my knowledge: Veins of ore rich in silver are known to exist from the fact of ore being found in several parts of the mountain. Many capitals have been invested and lost in speculations utterly worthless; whereas a small one, invested in making a good search and prospect of this mountain, would not be lost. This statement I* make after many years mining experience; myself and many other miners who know the mountain will stake our credit on many tons of precious metal being hid in its interior. The formation clay state—the richest in Sonora—the fact of rich ore having been found on its sides and ravines, and the number of rich mines in the vicinity, all lead me to suppose such to be the case. The mines on mines of El Oregano must wait until some adventurous miner will expend a thousand or two to enrich himself with millions.

"Mention has been made of an ancient population. On making particular inquiries respecting them, I find that they are common in all parts of the Sonora river, and even on the river Gila. The river Sonora, from its length, quantity of wanter and abundance of cultivable land, is peculiarly adapted

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* John Denton Hall, Esq.

to maintain a large population. Many of the ruins are of great extent, covering whole table lands, proving that in former times Sonora was much more thickly peopled than at present. Undoubtedly some regularity was observed in laying out these towns. In one I found what appeared to have been a fort; by its position it was well calculated for defence. Unfortunately, no documents exist from which dates could be taken, the archives and all belonging to the Mission having been destroyed at the time the Jesuits were expelled. It is a known fact here, and I believe in many other countries, that the order of Jesuits have done more towards civilization among the Indians than any other religious order in existence. It is undoubtedly the case in Sonora; the ruins they have left behind them prove that they were equal to the task they undertook; and among the old people their kindness and wisdom is still remembered and talked of. * * * *

"The tradition is current here, and in all parts of the Opata nation, that the great Montezuma was the chief of their tribe, and a great warrior. After subjecting the other tribes to his rule, he determined on building himself a city to live in on the river Gila—in Casas Blancas. He commenced operations; not liking the situation, or being somewhat disturbed in his work by the Apaches—the only tribe which had not submitted to his rule, joined to the bad omens observed by his priests—he determined to travel in search of a good location, favored by his gods. At the time of commencing his new journey, an eagle was observed to be hovering over the camp; orders were given to observe the bird's flight, and its resting-place ascertained; his commands were obeyed implicitly, and the eagle was found in the Lake of Mexico, perched on a nopal, with a rattlesnake in its beak. Here Montezuma founded the City of Mexico, which would have remained in his possession up to the present date, if Hernan Cortes and his gallant adventurers had not disturbed his calculations in a most important manner. Such is the tradition, and it is considered heresy among the Opatas,

not to believe it. Eagle, snake and nopal is the escutcheon of Mexico. Snake alone would be more appropriate.

"Humboldt mentions in his travels the having seen the ruins of Casa Blanca, on the river Gila. Another tradition is current also of Montezuma having told the conquerors of Mexico, that it would be an easy matter for them to subject to their rule the whole of the Indian tribes, but the Apaches never. We shall see what Uncle Sam can do with them in a short time."*

The yield of the silver mines of Mexico, as computed by Ward and Humboldt from the actual official returns to the Government, from the conquest to 1803, amounts to the enormous sum of $1,027,855,000, or more thon TWO BILLIONS of dollars! Again, Ward says: "I am aware that many of the statements in this and the preceding books respecting the mineral riches of the north of New Spain, (Sonora, including the 'Gadsden Purchase,' Chihuahua, and Durango,) will be thought exaggerated. *They are not so.* They will be confirmed by every future report; and in after years the public, *familiarized with facts* which are only questioned because they are new, will wonder at its present incredulity, and regret the loss of advantages which may not always be within its reach."

Gold dust has been found in abundance in the placers of San Francisco la Sienga, las Llanos, Ouisabaquita, St. Perfecto; and Soni is famous for its gold mines, also Cocuspera and Baba Seco; in the district of the Pueblo of Cucurpe, gold is found in abundance; during the rainy season in Baquachi district of Arispe, it is also found in quantities which pay well. In a word, Sonora, considered in a mineral point of view, equals, if not surpasses, the richest country in the known world, and only requires capital, peace, and a liberal government. The new Territory of the Arizona which formerly belonged to this State is considered by the Sonoranese to be the richest portion of their country.

The climate is good. The rainy season sets in in June,

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* Notes of John Denton Hall, Esq.

and lasts till the beginning of September; from this month until March occasional showers fall. The cold is never severe; the weather being very similar to that in California in the same months. From March until the rain sets in in June is considered the dry season. The heats are never oppressive, less so than in California. Two crops are raised from off the same land in the year, and which for abundance cannot be surpassed in any country—wheat, maize, beans, peas, &c., being the general grain that is cultivated. Sugar-cane is planted in great quantities in Hermosillo, San Miguel, Ures, Rayon, Oposura, Saguaripa, Huepaca, and the Rio Yaqui. A coarse kind of sugar is made called panocha, which yields to the cultivator an excellent return for his labor, generally selling at $25 the cargo of three hundred weight. In all parts of the State most excellent tobacco is raised. Cotton is sown by the Indians in the Rio Yaqui, and the grub (cotton worm) is hardly known in the crops. The average price of wheat is $8 cargo of three hundred weight, beans and peas 6.

The State is divided into nine districts, each being governed by a Prefecto, who is appointed by the Governor, and is responsible for the good order of his district. The port of Guaymas, at present is the only port of entry. It is a small, but in the business part, well built town, containing about six thousand inhabitants. The harbor of Guaymas is the best on the Pacific coast. Four miles long, with an inner and outer bay, it will admit ships of the heaviest tonnage, and the commerce of the world could be transacted at this port. The entrance is protected by a long island, which makes it doubly secure.

The principal rivers of Sonora are the Fuerte, the Yaqui, the Mayo and the Sonora. The Yaqui enters the Gulf of California eighteen miles below Guaymas. It has a dangerous bar, but it is believed to be navigable for light draft steamers to Buena Vista, eighty miles from its mouth. The Sonora river flows through the Arizpe valley, and is called the Garden of Sonora. It is almost wholly in the hands of the Apaches

The desolation of the depopulated towns and ranches is melancholy beyond description. The valleys of the Yaqui, Mayo and Fuerte, are the best sugar lands in the world.

Ures is a small city of about seven thousand inhabitants, and is situated about sixty leagues from Guaymas. Hermosillo is the largest city, containing from fourteen to fifteen thousand inhabitants. It is the centre of commerce. It is one hundred and ten miles north of Guaymas. The next in size and importance is the Rial de Alamos, situated on the frontier of Sinaloa; it contains from five to six thousand inhabitants; it is the centre of a large mining district, as its name implies—Rial meaning town or city of mines. Oposura, Saguaripa, Rayon, St. Miguel and Arispe, the ancient capital of Sonora, are large towns, with populations of from four to five thousand each. The entire population of Sonora does not exceed one hundred and thirty-five thousand, comprising Mexicans, (*hente de razon*) Opatas, Yaquis, Mayos, Taumales and Papagos; this population, instead of increasing is decreasing — the Apaches, revolutions and emigrations to California and Arizona producing this effect; and in a few years, if some change does not take place, Sonora will become depopulated. The friend to whom I am indebted for many of these notes, says:

"After so many years residence among them, I naturally feel an interest in their welfare, firmly believing that the grain of gold in their character among so much dross is worthy of seeking out, and will repay the finders. The United States could do it, and would to God it should be so; and I and many others will be found ready to co-operate in any just and honest mode of bringing round a mutual good understanding."*

"But one conclusion can be drawn of the state of Sonora, and that is, in order to redeem to the Sonoranese his character, life and fortune, it is necessary to subject or utterly annihilate the savage Apache who has served as the destroying angel to this fine country. It is the most sure and ready way to gain the

* John Denton Hall, Esq., to whom I beg to make my grateful acknowledgments for many of the facts in reference to Sonora.

eternal gratitude and friendship of the people, and annexation of one of the richest countries in the known world, which will also serve as another connecting link of the great chain of commerce with the Indies."

Velasco says, in concluding his review of Sonora and the Sonoranse:

"In truth, this is a most sorrowful scene; it horrors one to consider the state of prostration which we are now in, by the continued bad feeling of party, which keeps us savage in civil war, and all the while forgeting our own interests.

"For parties to harrass each other mutually; for brother to slaughter brother to satisfy revenge, &c., in a moment, are formed enthusiastic masses; but the same does not happen when the common enemy is to be punished, who are now with gigantic strides destroying the country. Until the Sonoranese shall know that as long as they do not bury in the fold of their country, and each one give a brotherly embrace in good faith, we shall continue to be the plaything of passions the most strong and savage."

Having had considerable practical experience on the plains, four journeys overland across the continent in the past four years, I was desirous of stating a few facts, showing the comparative merits of the different routes for a Pacific railroad. The limits of this address will not permit, and I therefore turn from the subject, with the prediction that the route known as the southern, along the 32d parallel, is the only one that will be built in this generation. Every exploration has shown it to be, not only the most practicable, but probably the only practicable route. The advocates of this route point to the significant fact that the mail from San Antonio to San Diego has never once failed in eighteen months of operation, winter or summer. The great overland mail makes its best time on the 32d parallel, and that portion of the route denounced as the worst, from El Paso west, has proved itself the best. Thirteen hundred miles by stage in December or January in less than eight days. Is there any other route on the continent

where this can be accomplished? Not on the Salt Lake route. It is wholly impracticable. Not on the Albuquerque route, else Lieutenant Beale would not go into winter quarters. On the 32d parallel no winter quarters are necessary. It is useless to attempt to evade this question of climate on so extended a route. In addition, the 32d parallel is by far the most level, and has the most water at all seasons of the year. (See Lieutenant Parke's report.) The first terminus of the Pacific railroad will be Guaymas, on the Gulf of California. From El Paso to Guaymas the distance is only about four hundred miles, at most four hundred and fifty. It will run across the Guzman valley through the Guadalupe or some more southern pass to Arizpe, thence to Ures, thence to Hermosillo, thence to Guaymas. It can be built most, if not all the way, for $10,000 per mile, and put in running condition. It would pay to-day between Hermosillo and Guaymas in freight alone. It will traverse a rich agricultural and mining country, and can connect with San Francisco and all the Pacific by steamers. A branch from Arizona down the valley of the San Ignacio would give Arizona the outlet she so much desires for her productions. It connects with the Texas road at El Paso, and, notwithstanding all the predictions to the contrary, the Texas road will be built. Should it be deemed desirable to extend at once to the Pacific, a steam ferry across the Gulf of California, and short railroad across Lower California, to a roadstead on the Pacific, accomplishes the desired end. If these views were elaborated, they could be supported by an array of evidence not to be overthrown.

In a report made to the Viceroy of Spain, during the early settlement of the province of Arizona and Sonora, is found the following words: "A scientific exploration of Sonora, with reference to mineralogy, along with the introduction of families, will lead to a discovery of gold and silver so marvelous, that the result will be such as has never yet been seen in the world." The Spanish race have but just touched these treasures. It remains for the American people to make good the prediction.

With the organization of Arizona and the acquisition of Sonora, a new impetus will be given on the Pacific. The Mexican population will recede before the energy of American career. At Guaymas a city will go up, which shall have no parallel in the magic of her increase, except San Francisco. The *auri sacra fames* is as strong to-day as in the days of old. Allured by the story of the New Eldorado which is just opening, tens of thousands of emigrants will hurry thither. Our empire on the Pacific is just founded. Its growth in the future will equal that of the past, if the United States seizes the golden opportunity now offering. The wealthiest and most delightful of countries will be redeemed from the barbarism into which it is so fast falling. An immense market will be opened for northern productions; commerce will again be stimulated as it was by California; and the prediction of Humboldt, that the balance between gold and silver would one day be restored, will be made good from the treasures of Arizona and Sonora.

APPENDIX.

The following summary of the advantages of the southern route along the 32d parallel (which traverses Arizona) is from the late conclusive speech of the Hon. Jefferson Davis in the Senate of the United States. No one could deal more fully and intelligibly with the great subject of a railroad communication across the continent than has Senator Davis; and I have no comment to make upon his complete vindication of the southern route, except to say that the officers of the army who made these explorations are men who understand their duty, and have no object to subserve except to gain an honorable reputation by the fidelity and thoroughness of their reports. I am able, from personal observation, to bear testimony to the signal ability with which these duties have been discharged. It is understood that Lieutenant J. C. Ives, Topographical Engineers, who assisted Captain Whipple in his survey of the 35th parallel route, called the Albuquerque, and who has since been over both this and the 32d parallel, gives the most decided preference to the southern route.

Extract from the Speech of the Hon. Jefferson Davis, of Mississippi, on the Pacific Railroad Bill, in the United States Senate, January, 1859.

I will now proceed to the consideration of the only remaining line the *route of the thirty-second parallel.* I hope I am not expected to make it quite smooth, or find water at convenient distances, cultivable land, and timber continuously along the route. I know of no such route across our Territories. I wish I did. If there were a route where it was thus made easy to build a railroad, we might feel a more happy security for the future. It would bring in its train not only the construction of such a work, but that continuous population which is needful to bind the two parts of the country together. Knowing no such line, I believe it is a herculean task to construct the road, attempt it where you will. Go on what parallel of latitude you may, all you can do is to take the least of most serious

obstacles. I reached the conclusion that the difficulties were least on the thirty-second parallel; not that they were light. This conclusion was based upon the information possessed at that time. Subsequent explorations have materially improved the location upon the route, as I shall proceed to show, first describing the section from the Rio Grande to the Pimas Villages.

The Office Examination says:

"After ascending from the bottom lands of the Rio Grande, in traversing the region examined by Lieutenant Parke between these two rivers, from Dona Ana to the Pimas villages, one appears to be traveling on a great plain, interrupted irregularly and confusedly by bare, rugged, abrupt, isolated mountain masses, or short ranges, seemingly, though not in reality, without system. Winding around these isolated or lost mountains, or using a few passes through them, a railroad may be constructed with easy grades. Except through the mountain passes, the surface is so smooth as to require but little preparation to receive the superstructure of a railroad; and even in the two most difficult of the passes, (where in one case, deep cutting or a tunnel at the summit, near the surface, in rock, with heavy side cuttings and high embankments for short distances, and in the other a short cut of sixty feet—probably through rock—are proposed by Lieutenant Parke, to attain grades of forty-six-feet and ninety feet per mile, or less by increasing distance,) the natural slope of the ground may be used for a railroad for temporary purposes, and until the road itself can reduce the cost of materials and supplies to the lowest rates."

The resurvey by Lieutenant Parke shows that these two most difficult passes may be avoided.

In relation to the supply of water upon this part of the route, the report of the Secretary says:

"The great difficulty experienced in crossing this district is in the long distances over which no water is found at certain seasons. The survey by Lieutenant Parke was made during the dryest season of the year, and, irrespective of the springs found at intermediate points, the whole distance between the two rivers Rio Grande and Gila, may be divided into five spaces, varying from eighty to fifty-three miles in length, at the termination of which, large permanent supplies of water are found at the most unfavorable season of the year.

These spaces and points are—

From the Rio Grande to the Rio Mimbres	71 miles.
From the Rio Mimbres to the stream of the Valle de Sauz	72 "
From the Valle de Sauz to the San Pedro	80 "
From the San Pedro to Tucson	53 "
From the Tucson to the Gila	79 "

Intermediate between these streams are permanent springs; and the new survey has improved the location in this respect. In his last report, Lieutenant Parke states:

"The supply of water upon the plateau is limited. Along and near the proposed line it is found at the following localities, and from these the working parties can be supplied: at Neide's spring, at the southwest corner of the Basaltic hills, east of Cooke's spring; Rio Mimbres; Agua Fria, Ojo de la Vacca; Ojo de Inez; Valle del Sauz; in the Puerto del Dado; Croton

springs at the Playa de los Pimas; Castro spring, near the Railroad Pass under Mount Graham; Pheasant creek; Antelope and Dove springs at the base of the Calitro mountains; and at Bear springs at the head of the Aravaypa. The distances, in direct lines, from one of these localities to another, are as follows:

From the Rio Grande to Neide's spring	40 miles.
From Neide's spring to Cooke's spring	12 "
From Cooke's spring to Rio Mimbres	21 "
From Rio Mimbres to Agua Fria	15 "
From Agua Fria to Ojo de la Vacca	6 "
From Ojo de la Vacca to Ojo de Inez	12 "
From Ojo de Inez to Valle del Sauz	40 "
From Valle del Sauz to Puerto del Dado	23 "
From Puerto del Dado to Castro spring	30 "
From Puerto del Dado to Croton springs	30 "
From Castro spring to Croton springs	18 "
From Croton springs to Pheasant creek	12 "
From Pheasant creek to Antelope spring	3 "
From Antelope spring to Dove spring	2½ "
From Dove spring to Bear spring	16 "

"On the San Pedro route water is abundant and convenient, at Chameleon spring and Prospect creek, and in the entire valley of the Rio San Pedro. Besides these permanent supplies, water is found, after the rains, on the *playas* and in depressions in the drains."

It has been argued, and I think successfully, that if the road were built, it might be worked from one supply of water to another; but that has never satisfied my mind in relation to the difficulty which presents itself in building the road Without tanks or wells I do not see how the road is to be built, how working parties are to be sustained, with the distances which are found upon every route which has been surveyed.

The facilities for making such artificial reservoirs upon this part of the thirty-second parallel route are thus favorably described by Lieutenant Parke:

"For the working parties in the construction of the road, during the dry season, water can be obtained from the several above mentioned permanent sources of supply, but this will involve, of necessity, much haulage, the maximum distance being twenty-three miles. But I am clearly of the opinion that water can be obtained at other points along and near the line of construction by sinking common wells. These *playa* formations are particularly favorable. Being basin-shaped, they receive and retain the drainage from the surrounding country, giving us natural reservoirs,* which require only to be tapped to give a constant and plentiful supply."

I will next proceed to describe the section west of the Pimas Villages. The Office Examination states:

"We have now reached the Gila, seven miles above the Pimas villages, the elevation above the sea being one thousand three hundred and sixty-five feet. From this point to its junction with the Colorado, the valley of the

* New discoveries of springs have been made since Parke's report, and will continue to be as the country is opened.

river is highly favorable to the construction of a railroad. There will be no necessity for embankments against freshets, but trifling occasional cutting and filling; and, in those instances where the hills close in upon the river, there is ample space for the road without heavy cutting. The elevation at the mouth of the river being one hundred and eight feet, and the distance between the two points two hundred and twenty-three miles, we have a general slope of five and six-tenths feet per mile, which, from the favorable character of the ground, may be assumed as the grade of the road.

"Water and fuel for working parties are sufficient, though no grass. Logs may be driven down the Gila from the Mogoyan mountains, at its source, from the Pinal Lleno, and down the San Francisco and Salinas rivers, from the pine forests on the former, and the mountains at the source of the latter.

"But it may be found more economical to receive all the supplies of lumber needed for the western portion of the road, either from the San Bernardino mountains and Pass, or from the harbors of San Pedro or Diego, or, should it be found desirable to establish one, from the depot near the mouth of the Gila."

Senators will perceive that I am here explaining the basis on which I formed the opinion which governs my vote in this case. I have no controversy with anybody. I do not expect to satisfy gentlemen that their routes are not as good as they wish them; but I am dealing with the facts as they are contained in the reports, to justify me in the opinion which I have officially expressed, and on which I am now acting in my proposition to grant a given sum to make a railroad. I have not encountered all this labor in a mere spirit of controversy.

"The most favorable point for crossing the Colorado is at the junction of the Gila, where the river is narrowest, six hundred and fifty feet wide, and has bluffs on both banks."

"The direction that the road should take across the desert intervening between it and the foot of the Coast range depends, in part, upon the position of the pass by which it crosses this mountain chain. There are two passes known and explored. Warner's, the more southerly of the two, will require five miles of excavation in granite and mica slate for the full width of the road, the grades varying from one hundred and thirty to one hundred and ninety feet per mile."

"The distances from the mouth of the Gila, over the desert, to the entrance of this pass, is eighty miles; thence to San Diego is one hundred and fifty miles. The San Gorgonio or San Bernardino Pass, on the contrary, is remarkably favorable. It is an open valley, from two to five miles wide, the surface, smooth and unbroken, affording in its form and inclination every facility and no obstruction to the building of a railroad."

This plain, eighty miles in width, has been treated as a desert *jornado*, although there are springs and wells upon it, and the water of the Colorado sometimes overflowing or rising in the middle of the plain, forms what is called New river. The plain is certainly deficient in water; but it is evidently a delta formation, and not a desert in the sense of being unproductive because of its constituent elements. It is all of alluvial formation, clearly once belonging to the Colorado, and habitually overflowed by it; but the deposit on the banks of that stream, having enough moisture and tenacity to catch the sand driven upon it by prevailing winds, at last became a natural

levee or barrier sufficient to restrain the floods; and long drought rendered the alluvial plain west of the river entirely sterile. Thus, I am informed, it is now along the Rio Grande. When the cultivation of a field is abandoned, left for but a few years without irrigation, sterility ensues, but it can be restored to fertility by again supplying it with moisture.

The supply of timber upon this whole route is deficient. The points where it may be obtained are thus stated in the Office Examination:

"Let us assume the most unfavorable case for supplies of ties and lumber over that portion of the route between the eastern limit of the Llano Estacado and the summit of the San Gorgonio Pass, 1,052 miles—that is, that they must be brought from either end of the road, say three hundred miles from the eastern limit of the Llano Estacado, and from the port of San Pedro on the Pacific, one hundred miles from the summit of the San Gorgonio Pass, making the points of supply 1,400 miles apart: the greatest distance to which they must be transported from each end is, therefore, 700 miles by the road, the point of junction of supplies from the east and west being about 110 miles west of the Rio Grande. Lumber can, undoubtedly, be procured in the Red river district for $30 per 1,000 feet. The additional cost for transportation to the Llano, 300 miles by the railroad, at three cents per ton per mile, (double the usual cost on eastern railroads) is $13½, and its cost there $43½ per 1,000 feet; the cost per 1,000 feet for 450 miles additional transportation is $20, and hence the cost per 1,000 feet at this extreme point will be $63½. The mean cost over these 400 or 450 miles from the eastern limit of the Llano Estacado will be $52½ per 1,000 feet. From Fulton to the Llano it is unnecessary to estimate its cost.

"Lumber may be delivered at San Pedro or San Diego from Oregon for $30 per 1,000 feet. Abundance of it can be got out from the San Bernardino and other mountains near the line of the road at that cost, and it may be assumed, therefore, to be supplied at San Pedro or San Diego at that price, and at a mean cost over the road (the road supplying itself, as it must do, sections of 40 or 50 miles being built at a time) of $46 per 1,000 feet.

"The worst case having been discussed, it remains to be said, that good ties and lumber can be obtained from the Guadalupe and Hueco mountains, from the head-waters of the Rio Mimbres, from the Pinal Lleno, Salinas river, and head-waters of the San Francisco, and from the San Bernardino mountains, of the Sierra Nevada or Coast range, which sources of supply may be found to materially obviate the necessity of transporting lumber from the two ends of the road."

In fine, it may be said that the route of the 32d parallel from the Mississippi river to the Pacific ocean is the shortest of those explored, its length being from one to four hundred miles less than the shortest of the other routes; it is likewise the shortest route to San Francisco, being one hundred miles shorter than any other. The vast uncultivable belt through which all the routes must pass is crossed by the route of the 32d parallel where the width is least, its length through this region being two hundred miles shorter than upon any other line.

The mountain region on this route has the least elevation, and the table lands preponderate to a greater degree than on the other routes.

It is the most economical route; the estimated cost to the Pacific being from eighteen to twenty million dollars less than that of any other, and to San Francisco $10,000,000 less; the cheapness of construction being due to the great extent of plains and table lands, where the road-bed preparation required is slight.

The mountain passes are open, and their natural slopes admit of temporary use without costly preparation. The winters are so mild that no difficulties, impediments, or dangers from snow and ice are to be apprehended, and this admits of the use of steep grades, and greatly facilitates construction.

On all the routes unusual means must be resorted to for supplies of water at the distances common on railroads. The intervals between the large permanent supplies on the route of the 32d parallel are not too great for the working of a railroad, but additional supplies, at shorter distances, may be collected by tanks or wells.

In the uncultivable belt that separates the Mississippi valley from the Pacific slope, occasional areas of arable soil are to be found. The route of the 32d parallel is neither less favorably situated in this respect, nor in mineral wealth, than those in other latitudes, nor is the supply of building materials and timber materially less on this route than on the others, excepting an interior portion of the route near the forty-ninth parallel.

In confirmation of the opinion expressed in the Secretary's report upon the comparative advantages of the thirty-fifth and thirty-second parallel routes, I wish to refer to the testimony of a civil engineer who has traveled over both, and looked at them with a view to the construction of a railroad,—Mr. Albert H. Campbell. He was first connected with Capt. Whipple's party for exploring the route near the thirty-fifth parallel; subsequently with that of Lieut. Parke when re-examining the route near the thirty-second parallel. I intend to read from a letter which I find addressed by him to the Hon. Guy M. Bryan, of Texas, in relation to the Pacific railroad, published in 1858. On the first page he sets forth his total indifference as to which of the two routes may be selected, and the absence of any pecuniary motive to influence him in one way or the other. He says:

"I have no pecuniary or landed interest in the El Paso route, and consequently have no motive for my preference, except an honest conviction, derived from personal observation, that it is emphatically the most practicable, cheapest, and shortest route between the Mississippi river and the Pacific ocean; and the country through which it passes, as a whole, will compare favorably with any other route in agricultural and pastoral resources, and in mineral wealth, and that it is the only route that can be successfully worked during the entire year." * * * *

"It is practicable to construct a railroad along the Albuquerque route, as reported by Captain Whipple; but I maintain, andam willing to leave it to the decision of the ablest impartial railroad engineer in the country, that it cannot be done without an immense outlay of treasure in preparing a road-bed, and exceeding, by at least twenty-five per cent., the cost of constructing a road of equal length over the thirty-second parallel."

Of the climate, he says:

"In regard to the climate of winter, on the Albuquerque route, I am satisfied that it will be found too cold to work a railroad successfully for at least three, if not four months of the year. The recorded experience of six winters at Fort Defiance, only twenty miles in latitude north of Campbell's Pass, and about the same elevation—as I observed when I went to that post in November, 1853, through Campbell's Pass, though the Army Meteorological Register, page 641, puts its down (or rather up) to '7,200 (?) feet' above the level of the sea—must be taken as conclusive of the fact of it being at times extremely cold.

"At Albuquerque, according to the meteorological report of the medical department of the United States Army, the maximum and minimum temperatures respectively were, for the winter months of 1849 and 1850—in December, 53 deg., 5 deg.; January, 49 deg., 12 deg. below zero; February 57 deg., 17 deg. For 1850 and 1851—in December, 52 deg., 5 deg. below zero; January, 57 deg., 8 deg.; February, 59 deg., 7 deg. For 1852 and 1853—in December, 65 deg., 21 deg; January, 65 deg., 19 deg.; February, 66 deg., 13 deg. For 1853 and 1354—in December, 66 deg., 20 deg.; January, 63 deg., 5 deg.; February, 67 deg. 15 deg.; and in December, 1854, 58 degrees, 19 degrees.

"At Fort Defiance, about twenty miles north of Campbell's Pass in latitude, and from three to five hundred feet higher, the maximum and minimum temperatures respectively were, for the month of December, 1851, 62 deg., 4 deg; eighteen inches snow. For 1852 and 1853—in December, 50 deg., 2 deg.; January, 55 deg., 7 deg.; February, 56 deg , 6 deg. For 1853 and 1854—in December, 57 deg., 6 deg.; January, 49 deg., 20 deg. below zero; February, 54 deg., 2 deg. For 1854 and 1855—December, 65 deg., 10 deg.; January, 59 deg., 17 deg. below zero; February 61 deg., 13 deg. For 1855 and 1856—December, 56 deg., 25 deg. below zero; January, 54 deg., 8 deg. below zero; February, 51 deg., 3 deg. below zero.

A great error has been committed in supposing that because the thirty-fifth-parallel route is in a southern latitude, it must be in a warm country. Temperature depends as much upon elevation as upon latitude; and fertility results not from the constituent elements of the soil alone, but from the meteorological conditions of the atmosphere also. Here is an elevation of seven thousand feet above the sea, and a country of extreme aridity. The air from the ocean deposits the moisture it possessed in passing over the mountain ranges, before it reaches this plain. Over it broods a forbidding sterility, and across it the winter winds sweep with a degree of cold scarcely less intense than that found in any portion of our country. At the close of this table, the writer says:

"The table above will give a fair idea of the climate of the country. The winter of 1855 and 1856 was more severe than any one known for many years. The wintry weather commenced on the 1st of November, 1855, and has continued up to the present time, (March 14, 1856.) The Rio Grande, at Albuquerque, was frozen over, and with ice sufficiently strong to bear a horse and carreta. Those Indians who live habitually to the north of Fort Defiance, were obliged to abandon that portion of the country and move south, with their flocks and herds, in quest of grazing, on account of the depth of snow, which, in the mountains, at whose base the fort is situated, was over two feet in depth in March, 1856." (Correspondence J. Leatherman, assistant surgeon United States Army; Smithsonian Report, 1855, page 287.)

Speaking of the immense exposure encountered on this elevated plain in winter, Mr. Campbell says:

"The imagination can readily picture the terrible calamity which would inevitably befall a train-load of passengers *en route* for the Pacific, if an accident of a similar kind should stop their progress midway upon one of those desolate artemisia districts between the Ojo de Gallo and the Little Colorado, and between the valley of the Big Sandy Fork and the sink of the Mohave, where no human habitation can ever exist between the permanent water stations."

He treats of the supply of water in the same manner as the authors of the official reports. He notices the fact that Capt Marcy, having traveled over the thirty-fifth, and then over the thirty-second-parallel route, testified in favor of the latter as an emigrant route. Citing the opinion of Major Emory as to the route on the thirty-second parallel, he says:

"In an allusion to the subject of the railroad, (on page 51, first volume of Mexican Boundary Report,) he [Major Emory] emphatically declares, of the advantages gained by the last, or Gadsden treaty, that it 'has secured what the surveys made under the orders of the War Department demonstrate to be the most feasible, if not the only practicable route, for a railway to the Pacific.'"

The comparison instituted in the office, when the field-work of the various explorations was reported, was to fulfil the requirements of Congress, to find the most practicable and economical route for a railroad from the Mississippi river to the Pacific ocean. I am not engaged now in the investigation of that exact question, the problem being merely that of crossing the Territories; but as the practicability of effecting a connection between the Mississippi and Pacific may control in any action of Congress, a table has been prepared which presents in a condensed form the distances and the comparative cost of each route from the Mississippi river to the Pacific ocean. Whether this estimated cost be too high or too low, it is not for that purpose needful to inquire. The object was to approach as nearly as possible to accuracy of comparison, not to give an absolute statement of the cost. This is all that has ever been claimed for the office estimates of cost; and this is the reason why the estimates of chiefs of parties have been modified, so as to bring them to the same comparative scale. I submit the table to the Senate:

Table showing the lengths, comparative costs, &c., of the several routes explored for a railroad from the Mississippi to the Pacific.

Routes.	Distance by proposed railroad route.	Sum of ascents and descents.	Comparative cost of different routes.	No. of miles of route through arable lands.	No. of miles of route through land generally uncultivable, arable soil being found in small areas.	Altitude above the sea of the highest point on the route.
	Miles.	Feet.				Feet.
Route near forty-seventh and forty-ninth parallels, from St. Paul to Seattle	1,955	18,654	$135,871,000	535	1,490	6,044
Route near forty-seventh and forty-ninth parallels, from St. Paul to Vancouver	1,800	17,645	125,781,000	374	1,490	6,044
Route near forty-first and forty-second parallels, from Rock Island, via South Pass, to Benicia	2,299	29,120*	122,770,000	899	1,400	8,373
Route near thirty-eighth and thirty-ninth parallels, from St. Louis, via Coo-che-to-pa and Tah-ee-chay-pah passes, to San Francisco	2,325	49,985†	Impracticable.	865	1,460	10,032
Route near thirty-eighth and thirty-ninth parallels, from St. Louis, via Coo-che-to-pa and Madelin Passes, to Benicia	2,535	56,514‡	Impracticable.	915	1,620	10,032
Route near thirty-fifth parallel, from Memphis to San Francisco	2,366	48,521†	113,000,000	916	1,450	7,550
Route near thirty-second parallel, from Memphis to San Pedro	2,090	48,862†	99,000,000	690	1,400	7,550
Route near thirty-second parallel, from Gaines' Landing to San Francisco by coast route	2,174	38,200§	94,000,000	984	1,190	5,717
Route near thirty-second parallel, from Gaines' Landing to San Pedro	1,748	30,181§	72,000,000	568	1,190	5,717
Route near thirty-second parallel, from Gaines' Landing to San Diego	1,683	33,454§	72,000,000	524	1,159	5,717

* The ascents and descents between Rock Island and Council Bluffs are not known, and therefore not included in this sum.

† The ascents and descents between St. Louis and Westport are not known, and therefore not included in this sum.

‡ The ascents and descents between Memphis and Fort Smith are not known, and therefore not included in this sum.

§ The ascents and descents between Gaines' Landing and Fulton are not known, and therefore not included in this sum.

In volume seven of the railroad reports, a table will be found with which this very generally corresponds, the difference being that some of the surveys having commenced at anterior points—one for instance at Council Bluffs, and another at Fort Smith—the estimates of the reports are made from those points. Here they have been extended to the Mississippi river. The table in volume seven is also here modified by the supposition that the reported practicability of the Cœur d'Alene Pass is correct; and thus the total sum estimated for the route near to the forty-ninth parallel has been reduced. No additions have been made for those difficulties which, in addressing the

Senate, I have stated had come to my knowledge since the preparation of my report, because information not derived from instrumental survey is not accepted as the basis of estimate.

I have only to add, that looking to the grant of land and of money with which Texas has endowed her railroad company, and to the interest which would be brought to bear for the extension of the Texas road to the Rio Grande, by a company formed to build a road from the Rio Grande to the Colorado, I believe the sum of money and the grant of land contained in my substitute, although the smallest proposed by any one, will secure the construction of the road across that intermediate territory, will insure the extension of the road of Texas to the Rio Grande; and that having reached the Colorado, California will charter a company to extend it to San Diego, to San Pedro, or to San Francisco. Most probably a company, if incorporated to build a railroad from Fort Yuma to San Francisco, would first connect with the Ocean at San Pedro, and thus command a more prompt return for their investment in the road than if they awaited its final completion to San Francisco.

I have endeavored, during the progress of this debate, to ascertain how much of the land in the valley of the Santa Clara and the Salinas might inure to the benefit of a company undertaking to built a road. It is all known to be of the highest fertility, and blessed with a climate not inferior to any within the limits of the United States. If it is possible for the company to obtain near to that line even one-half of the amount of land proposed to be granted, I rely upon the accuracy of Lieutenant Parke's estimates to establish the fact that the road might be built there for the land grant alone. Whenever California shall charter a company to build this road within her own limits, and that company shall ask Congress for a grant to construct it, I cannot doubt that the interest of the United States will warrant Congress in making such a grant. Thus is reached the conclusion that the Texas road will be drawn on to make a junction with the road built in the Territory, and that the latter, when built to the Colorado, will certainly be extended to the Pacific. The eastern terminus of the Texas road will be available to all the roads which ramify throughout the United States, and be connected, in a very short time, with every important point from St. Paul to Galveston.

If the facts which have been thus imperfectly grouped and presented to the Senate, sustain the conclusion that this result is to be attained by so small a sum of money, it may reasonably be claimed that all who desire the construction of a a road across the Territory with complete connections throughout the States are bound to sustain the proposition which I have submitted.

My position is, that the completion of this great work is necessary to the due execution of the functions of the general government, that it will not be achieved by private capital alone, therefore that we should strike off every shackle which impedes its execution; should abandon the right to collect duty on the iron employed; give the

whole limit of the United States from which to select a route; extend every aid we can constitutionally afford, and to insure the construction of the road somewhere, be it where it may, so that it is on the soil of the United States. If by haggling over petty sectional controversies, if by sticking in the ark dand destroying the energy of the constitution, politicians shall defeat the efforts which have been made from session to session, shall prostrate the last hope for this road across the continent, and thus unprepared should we become involved in a war with the great maritime powers of Europe, they may, when it is too late to avert the disasters which have been so often foretold, have cause to pray for the mountains to fall upon and cover them from public indignation; to them may attach the blame, on us all may press the shame and the sorrow of having lost to the country a territory worth innumerable treasure, of having forfeited that, the value of which cannot be measured by money—the prestige of stability, progress and invincibility, and the right to inscribe on our national shield, EQUAL TO THE PROTECTION OF A CONTINENENT-WIDE REPUBLIC.

The following letter is from the head of the well-known mercantile house of Juan A. Robinson, of Guaymas, Sonora, San Francisco, and other points. It was written during my visit to Guaymas last year. It is proper to say that the actual export is nearer five millions than three—a large amount of bullion being exported yearly without going through the custom-house. The trade of Mazatlan is nearer twelve millions than nine.

GUAYMAS, *October* 12, 1858,

DEAR SIR: In reply to your inquiries regarding the trade of this port, I would observe, the merchandize principally consumed are from England, direct, and occasionally from the United States, including goods from the European continent and the East Indies. The amount of imports may be calculated at about three millions per annum of foreign goods, besides a considerable amount of the different manufactures of this Republic. Returns are made in gold and silver bullion. And, lastly, wheat and hides (the exports of the former) may be calculated at about three millions per annum, and say half a million of the other articles, including copper. Our trade is evidently on the increase. Regarding Mazatlan, from personal observation, I should judge that the business done there is about three times more than that of this port—their exports being in coined silver and gold, Brazil wood, and hides, principally.

I remain, dear sir, in haste, your obedient servant,

JUAN A. ROBINSON.

HON. SYLVESTER MOWRY,
Delegate from Arizona.