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THE
CITRUS
AND
FRUIT
BELT
OF
SOUTHERN ARIZONA.

BY
CAMERON H. KING,

COMMISSIONER OF IMMIGRATION.

PHOENIX, ARIZONA,

1887.



SOUTHERN ARIZONA'S FRUIT LANDS.

Happy Homes, Health and Wealth.



ARIZONA is divided by the thirty-fourth parallel of north latitude into two climatic zones, each distinct from the other. On the elevated plateau of Northern Arizona, between the southern boundary of Utah and the thirty-fourth parallel, four thousand to six thousand feet above the level of the sea, the temperature ranges during the year from 90° to 10° above zero. South of this region the altitude is from two thousand to four thousand feet less and the climate is much warmer.

It is not the purpose of this pamphlet to speak of northern Arizona—its delightful and invigorating climate, its immense forests of timber, its extensive coal measures, its marvelous mines of gold, silver and copper, its unexcelled grazing lands, its valleys which grow in endless profusion all kinds of cereals, vegetables and the hardier fruits, its fertile soil equal in productive capacity to that of any portion of the world,—all these deserve and will receive attention in a future article.

Our subject at present will be Southern Arizona and its remarkable adaptability to fruit growing.

In the Salt River valley land lying near to the towns of Phoenix, Tempe, or Mesa City has more than doubled its value within a year. These lands for the most part are in a high state of cultivation and are selling at from thirty to one hundred dollars per acre. In Pinal land is selling at from ten to thirty dollars per acre with water rights and is rapidly appreciating.

When it is considered that on any of these lands the same fruits can be raised as in California; that they mature three weeks earlier than in that State; that here raisins can be picked from the vines and cured on the ground; that trees bear at two years old, and vines in eighteen months; that the adaptability of the soil to the growth of the raisin grape has been such as to induce men like the McPhersons, experienced in the business, to buy and plant a section (640 acres) in raisin grapes in the Salt River valley; that in wine making the most profitable results can be obtained, then it follows that here above all other places is the spot for the man to seek a home, who desires to enjoy ease and independence with moderate labor.

The industrious, frugal horticulturalist can support his family, rear and educate his children and lay by a store for old age upon ten acres of land.

Ten acres in grapes or fruits in any portion of the Salt or Gila valleys will yield a greater return than 300 acres in Kansas, or any of the Western States.

Orchard land in Southern California sells at from two to five hundred dollars per acre, here in Southern Arizona at from ten to one hundred dollars and here it can be reclaimed at a cost not exceeding six dollars per acre.

Here the climate for nine months in the year cannot be surpassed in any country. The summer months are warm but neither oppressive nor unhealthful. Here there are no malarial diseases, fevers, chills, pneumonia or those afflictions so prevalent elsewhere.

Here those affected with pulmonary complaints can live and enjoy life.

The country is rapidly filling up with the best class of citizens. Railroads are being constructed through both the Gila and Salt River

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and uniform temperature which we enjoy here, nor the light, elastic and invigorating air we breathe for eight months.

The celebrated shores of Italy and Spain cannot compare either, with any spot of Southern Arizona as a winter climate; and it is only a question of time when the people of the East and other parts of our country, and even from Europe, who have delicate health or are actually afflicted with consumption, asthma, or other troubles of the respiratory organs, will come here by thousands.

How many perish yearly in our Eastern States, whose lives could be saved if they only could breathe for six months, the air of this region!

We have many of those invalids who have made their permanent homes here.

Our *medical status* compares advantageously with that of the most healthy cities of the world, to the great disappointment of the few physicians who live here.

We have no blizzards, storms or sudden changes of weather, and are free from many diseases and epidemics.

Our death-rate is about ten per 1,000 population per year, including mining, railroad casualties, old age, children, and people from the surrounding country.

In summer we have a rainy season in July and August, but even then hardly a day passes without sunshine.

From June to September we have hot weather, and some days for a few hours, the thermometer will rise to 110°, but, even at this high temperature, the heat is not so oppressive here as it is in New York or New Orleans when the thermometer marks 80°.

We never have any sunstrokes in summer, nor are we oppressed by perspiration. The light, dry air absorbs it immediately, causing a very agreeable, cool and refreshing sensation. Nights are always cool and pleasant in summer.

Southern California has advertised, with pride, its climate, through the wide land; but, if we consider that there are fogs, rains, heavy cold winds, and atmospheric pressure, and constant changes of air and temperature during winter, we must admit that said climate is far inferior to ours; and that as soon as the sick from the East, and even from California, shall realize this fact, they will come here in winter in preference to California or any other place.

Hundreds of invalids from Los Angeles, and other parts of Southern California, have come to spend the winter season here, and have found out by experience the advantages of our climate to theirs; and many from the East begin to stop in Tucson rather than venture the winter season of California. All are perfectly delighted; and it is only a matter of time when the fame of our winter climate will bring an army of strangers from all parts of the world."

A clipping from the Arizona canal prospectus gives an actual case which speaks for itself:

“Col. William Christy, cashier of the Valley Bank of Phoenix, a victim of asthma, aggravated by an old gun-shot wound through the lungs, received in the late war, had reached the stage where he could not lie down; sleep had to be taken in a sitting posture. He came to Arizona, and in three months could lie down and sleep as in childhood.”

THE MAGIC OF IRRIGATION.

FROM every part of Southern Arizona come the most cheering reports of large crops and general prosperity. New fields are being cultivated. New irrigating canals are being constructed. New towns are being built. Valleys that but a while ago seemed barren wastes are transformed by the magic influence of pure, sweet water, into gardens blushing with flowers and fruits.

From the rivers that course through Southern Arizona's broad domain, active and energetic men are leading out shining streams and rivulets sparkling like silver threads, more silvery where kissed by the bright sunshine as it falls from unclouded skies, winding for miles through the alfalfa's richest verdure, circling past fields of grain which gleam variously beneath the crimson beams of the warm and genial west, bathing the feet of orange trees

“ Whose fruit and blossoms in the breeze
Are wantoning together free,
Like age at play with infancy.”

Anon they bubble among the vines whose red weepings shall shortly stain the wine press, or whose mummified clusters shall gladden the Christmas hearth.

Nature wreathed in smiles banqueting through flowery vales and lovely groves, transforms a desert to a paradise and brings to her glad children the nectar and ambrosia of the gods.

Do not think the sketch exaggerated. He who has not seen the wonderful effect of the intelligent application of water to the desert plains can not understand the miraculous changes which it will produce.

Listen to the following story of a disinterested non-resident who with the close scrutiny of a careful business man, and while acting in the strict line of his duty, gives the result of his investigations.

Mr. E. W. Parsons, Auditor of the Connecticut Mutual Life Insurance Company, at the request of certain Eastern capitalists who were about to make loans upon property in Pasadena, Riverside and San Bernardino, California, and in Phoenix, Arizona, came to this territory to investigate and report upon the agricultural resources of the Salt River valley and the values of lands. We quote the following extracts from Mr. Parson's report:

"As to irrigation, to a New England traveler by railroad through Southern California and Arizona, who for days passes over what appears to be a barren desert, producing nothing but cacti, sage-brush, and mesquite, it is almost impossible to realize the magical change produced by a systematic application of water. The desert lands can be turned into fruitful vineyards and orchards and waving fields of grain and clover, and be made to bud and blossom as the rose.

One is struck with amazement in visiting the vicinity of Los Angeles, Pasadena, San Bernardino and Riverside, to see the orange groves, peach orchards, and vineyards, covering thousands of acres, and all loaded down with fruit of the finest quality. All owing to the system of irrigation so little understood by Eastern people. It was simple as A B C, and when in perfect order is under as complete control as the water and gas are in our own city and can be readily applied to the whole section, or any part thereof where it may be needed, at any time and any amount within the limits. I have frequently seen the fields flooded and have let the water on myself.

The desert lands without the water are nearly worthless; but where the water can be applied the lands in Pasadena and Riverside, which but a few years ago were bought for from \$20 to \$50 per acre, are now worth \$1,000 per acre.

In order to show what has been and still can be done (for it is constantly taking place), I will cite a few instances that I learned while on the spot.

Two gentlemen in Riverside, Cal., own jointly 37 acres, which are devoted entirely to the raising of oranges and grapes. On a certain plot containing $1\frac{3}{4}$ acres of grape vines of four years' growth the

owners sold the product of one crop to a wine-maker, who was to gather them from the vines at his own expense, for over \$1,300. I copied this myself from the inspector's certificate. The whole amount of labor which the owners had expended on this plot, including the cost of irrigation, was not over \$25.

A gentleman in Phoenix, Arizona, whose ranch I visited, has an orchard of peaches; he assured me that he had sold the product of that orchard for \$500, and the purchaser was to gather the fruit himself.

A gentleman in Riverside five years ago bought 100 acres of land for \$2,000. His income from that land at this time is from \$300 to \$500 per acre, and the land to-day cannot be bought for \$1,000 per acre.

The wonderful results of irrigation on these desert lands have attracted the attention of stock and fruit growers to such an extent that there is a great demand for lands that are favorably situated for irrigation. So large a portion of these lands in California which can be irrigated, and the high prices that those which are cultivated are held at, have compelled new settlers to look for cheaper lands, and naturally their attention has been called to the Salt River valley, Maricopa county, Arizona, as the most desirable locality for stock and fruit raising. There is no one single natural advantage possessed by the wonderful fruit-growing region of Pasadena or Riverside, Cal., that does not exist in the Salt River valley of Arizona. But this valley has natural advantages which do not exist in Southern California, viz., less variation in temperature and a uniformly dry atmosphere, admirably adapted to fruit-drying, and, what is more important and essential of all, an abundant quantity of water, far exceeding the amount attainable in the irrigating region of California. * * *

For nine months in the year the climate of this region is unsurpassed on the continent. There are no fogs, dew, or dampness. Lung complaints and malaria troubles are unknown, and out-of-door life can be enjoyed all the year round. The hottest portion of the year is in the months of July and August, during a portion of which it was my fortune to be there. I slept out of doors the greater portion of the time, which is the general custom, the houses being built one story high, beds being placed on the piazza at night.

For many days during my stay the mercury ranged from 110° to 115°, notwithstanding which I suffered no more from the heat than I do at home with the mercury ranging from 80° to 90°. There is no perspiration to be observed, the atmosphere being so dry that it is absorbed as soon as it reaches the surface of the body. I did not

feel the heat in my head at all. There are but few weeks in the year when people feel as though they would prefer to be nearer the coast."

Wherever in Southern Arizona its arable lands can be irrigated the same wonderful results follow which have been pictured above.

Gov. C. Meyer Zulick, in his official report to Hon. L. Q. C. Lamar, Secretary of the Interior, illustrates the rich rewards that flow from the reclamation of the desert land by irrigation, with a short history of Mesa City, a thriving town in Maricopa county. Governor Zulick says:

"In January, 1878, a party of four, as an exploring party for a colony, located a water-right on Salt River in Maricopa county, and entered the present town-site of Mesa City, consisting of 640 acres. In February they were joined by their families and others, thirteen families in all, and went into camp. February 18 they began active operations excavating their ditch to irrigate their land, which was completed and the water introduced upon their town-site and farm land after nine months of hard labor.

The canal is owned by a stock company consisting of 200 shares with a par value of \$100 per share, which now have a cash value of \$500 per share. The main canal is 10 miles long, with a capacity sufficient to reclaim 15,000 acres of desert land. Several miles of the canal traverse the bed of an old Aztec ditch that had been cut through a layer of cement. This prehistoric water way, excavated probably thousands of years ago, was not less than 30 feet wide at the top and 20 feet at the bottom. It is estimated that a saving of \$25,000 was made by following the alignment of this old canal, which to these pioneers was the important item that made their enterprise successful.

The section of land entered as a town-site was divided into 10-acre blocks and these subdivided into $1\frac{1}{4}$ acre lots for residence and business property; the land immediately surrounding the town was entered by the various members of the colony for more extensive agricultural purposes.

The first water was turned upon the land where the town of Mesa now stands in November, 1878, and not until the winter of 1879-'80 was much seeding or planting done, for they had houses to build, land to clear, and other preparatory work to do. It must be remembered that this energetic, industrious little colony of thirteen persons settled upon a desert, where for centuries the sun only smiled upon the sparse growth of cacti and sage-brush; where there

was no trace of verdure, and whose only visitant was an occasional coyote in his lonely wanderings.

The transformation after six years has been complete. It is regarded as a colony no longer. Mesa has a population of 700. The original town-site is dotted over with beautiful homes built of rustic redwood neatly painted, some of brick, and others of adobe; all surrounded by fruit trees and vines, they present a picture of Arcadian homes set in groves of fig, almond, ash, locust, pepper, willow, umbrella, and pomegranate trees. Altogether there are 7,000 acres under a high state of cultivation, devoted to the raising of cereals, alfalfa (French lucerne), with extensive orchards and vineyards supplying and enriching a population of 1,300 people. Several crops of cotton have been raised here. Grapes are made into wine and raisins, not excelled by those of California.

The main street of the town is two miles long, with a double row of cottonwood trees 40 feet high on each side, one on the outer and the other on the inner side of the sidewalk, thus forming one of the most lovely alamedas, or shady walks, imaginable.

Mesa has churches, schools, and stores, and is not only a self-sustaining community but raises a large surplus for market. It is the one spot where can be seen the ideal realized, and this is only one instance of many in the Salt River and Gila valleys of Arizona. The great farms surrounding Phoenix for 20 miles west, as well as those surrounding the town of Florence in Pinal county, will soon be subdivided and nearly all of them will be devoted to the *citrus* and deciduous fruits, especially to raisins and wine grapes, and the olive, fig, orange, lemon, and lime; twenty-five acres of this land planted in any of the above fruits give a large annual income."

MARICOPA COUNTY.

FIRST among the agricultural communities of Arizona stands Maricopa county. It comprises an area of 5,986,560 acres and embraces within its borders the fertile valley of the Salt River and a part of the lower Gila. Its arable and irrigable lands are rapidly being brought under cultivation.

The irrigating canals in Maricopa constructed and in process of construction, are about three hundred and fifty miles in length and calculated to reclaim six hundred thousand acres of land. The

amount of money invested in these canal enterprises will not fall short of \$1,250,000.

At present there is not over one hundred thousand acres thoroughly reclaimed though the lands covered already by the canals and which with little labor can be made susceptible to irrigation, amount to nearly 300,000 acres.

There is no doubt as to the water supply in the Salt River. There is, indeed, such a great abundance that the precious fluid is going to waste which should be applied to useful purposes. Land which is irrigated at regular intervals year after year, requires less water each succeeding year until the fourth or fifth year is reached. The soil from constant irrigation gradually becomes well saturated and the water beneath the soil gradually raises nearer to the surface. In the Salt River valley the water beneath the surface of the soil has raised seventeen feet in ten years. Wells that then were thirty feet deep to water are now filled to within thirteen feet of the top. In some cases the alfalfa roots have struck the lower moisture rendering further irrigation for them unnecessary.

Heretofore the products of the Salt River valley have been principally grain and alfalfa, but the railroad communication made with the Southern Pacific provides a ready outlet for products more profitable, but requiring rapid transportation.

The farmers are turning their attention more and more to fruit and grape culture.

All kinds of deciduous fruits grow to great perfection in this valley. Especially is it noted for its apricots. This fruit matures earlier by four weeks than in California, and the crop can be disposed of without competition. It is a thrifty growth, and the yield is large. A tree begins to bear at two years' old, and at four years gives an average return of two hundred pounds. These trees, when well matured, yield a profit annually from three hundred and fifty to five hundred dollars an acre.

There is no spot on earth where the grape grows to greater perfection, or is more luscious.

Mr. J. de Barth Shorb, who is the most experienced horticulturist and viniculturist in the United States, having been for twenty years largely identified with orange culture, grape growing and wine

making in Southern California, gave as the result of his observations in the valley the opinion that this was a sherry district, unsurpassed by any in the world. He also called attention to the peculiar adaptability of the land to the growth of raisin grapes. The Mission, Muscat and Seedless Sultana varieties of raisin grape have been tested throughout the valley with the most surprising and gratifying results.

A vineyard will yield in the third year an average of five tons of grapes to the acre. The raisins can be cured on the ground, and the loss by drying is only two-thirds as compared with three-fourths elsewhere. The yield of the vineyards increase as the vines become older.

The McPherson Brothers, of California, have set out a vineyard of *six hundred and forty acres* of raisin grapes, which is growing finely, and will begin to bear next year.

The most wonderful feature in connection with grape growing in the Salt River valley is that the soil is of such exceeding fertility that grape vines commence to bear at eighteen months, and what is yet more remarkable, there are frequent instances where vines have borne two crops in one year!

Apples, pears, quinces, peaches, plums, nectarines, cherries, and every variety of fruit indigenous to temperate latitudes grow luxuriantly throughout the valley, and strawberries, raspberries, blackberries, currants, gooseberries, and all varieties of small fruits, are successfully cultivated.

The lands lying along the Gila river, and the southern and western portion of Maricopa county, seem to be the natural home of the citrus and semi-tropical fruits. In the vicinity of Gila Bend are grown oranges more excellent in flavor, larger and better formed, than those of Riverside, California, and equal, if not superior, to those plucked from the far-famed groves of Mazatlan, in Sonora, Mexico. The lemon and lime flourishes luxuriantly. The culture of the banana has been attended with success. Pomegranate, figs, citron, every fruit, plant, grain, grass or vegetable which can be produced in either tropic or temperate zone, will thrive in the rich and prolific soils which are to be found in Maricopa county. Two crops of cereals can be raised during the year, and the soil is

admirably suited to grains and grasses. Alfalfa grows the year round, yielding from eight to ten tons to the acre.

Stock can be pastured in the open field during all parts of the year, and each acre of alfalfa will support four head of cattle.

A BOOMING CITY.

Phoenix is the county seat of Maricopa county. From Phoenix Junction, on the Southern Pacific Railroad, the Maricopa and Phoenix Railroad runs northerly to the city of Phoenix. From Prescott Junction, on the Atlantic and Pacific Railroad, the Prescott and Central Arizona Railroad is pushing south towards Phoenix, and about half of the road is already completed and in operation. The purpose of this line is to connect the great Atchison, Topeka and Santa Fé system with their lines in Southern Arizona and Sonora.

Another railroad, from San Diego, passing near Yuma, thence up the Gila to Phoenix, and northeasterly to intersect the Atlantic and Pacific, and reduce the time of travel between the Eastern States and California, is contemplated.

Another railroad, from Phoenix to Florence, and through the Gila valley, crossing Graham county, and thence southeasterly, to connect with the Atchison and Topeka Railroad, in New Mexico, is also projected. Phoenix will have every advantage which a railroad center possesses, and which results from railroad competition and cheap transportation.

The city of Phoenix is one of the most beautiful and lovely cities in the West. Along its streets, on each side, flow streams of pure water, carrying to each house and garden the liquid fertilizer. Tall and stately trees line the streets. Fruits, flowers and shrubbery surround each residence, fascinating the eye and lading the refreshing breeze with rare and fragrant perfumes.

Its business streets are crowded with an industrious and energetic people. All is bustle, progress and activity. Mechanics are busy; numerous buildings are being erected; several hotels are crowded with guests, and others are being built. There is in the course of

erection at the present time the Commercial Hotel, to cost \$25,000; Porter block, \$20,000; Patton block, \$18,000; Thibod's building, \$15,000, and numerous others. The city has issued bonds for the erection of a City Hall, and the Phoenix and Maricopa Railroad have approved the plans of a commodious depot.

Franchises for street railroads have been granted, and the street cars will soon be in operation.

Real estate transfers have been averaging over \$200,000 per month, and are increasing. A short distance from the city is located the Territorial Insane Asylum, a structure of imposing appearance, built at a cost of \$75,000.

The County Court-house is a handsome brick building of two stories surmounted with a graceful dome. An elegant public school-house stands in a lovely plaza shaded by towering cottonwoods. Phoenix has gas works, planing mills, flour mill, ice factories and many other industrial establishments. Its population has doubled within the past year and is now about five thousand.

The weather is warm in summer and the thermometer will sometimes indicate 105°, but the altitude above the sea is 1800 feet and remarkable as it may seem the atmosphere is so pure, dry and balmy that even when the temperature is highest it is less oppressive and far more comfortable than 80° at Los Angeles, San Francisco, or any city on the Atlantic sea-board.

The town of Tempe is nine miles above Phoenix on the Salt river. It is a flourishing and busy place. A great deal of capital has been invested there during the past six months and it is growing rapidly. The Maricopa and Phoenix Railroad passes through it and in its suburbs is located the Territorial Normal School. Its growth will keep pace with that of Phoenix. We have elsewhere described the lovely town of Mesa City, embowered in orchards, vines and flowers. It will be a great sherry wine producing district.

The profit to be derived from wine making is illustrated, says Gov. Zulick, in his report to the Secretary of the Interior, by "The results of an experiment made by the Count de Ramey from grapes grown in the Gila valley, near the town of Florence. From a vineyard of 4 acres, three years old, he manufactured 60 gallons of white wine, superior to that of California or France, and in body and flavor equal to the best of that of Spain. The white wine of France and

the best of that of California has 8 to 10 degrees alcohol, while this contained the same as the best Spanish wine. The product of a Spanish vineyard is 10 pounds to the vine. His vineyard yielded 100 pounds of grapes to the vine. From this vineyard, only three years old, and containing only 4 acres, he has this year made 3,800 gallons of wine of different kinds, which he has sold for \$1 per gallon, besides selling grapes to the value of \$500. The net yield of each acre has been \$1,000. The testimony of vine-culturists is that there is no better country for the manufacture of wine than that of the Gila River and Salt River valleys, and the experimental test above cited would seem to fully bear out the assertion."

YUMA COUNTY.

THE county of Yuma contains an area of 10,138 square miles. Along its western boundary runs the Colorado river, a navigable stream, up and down which are regularly plying steamboats which afford the great advantage of cheap water transportation. From east to west the county is traversed by the Gila river. These rivers are capable of furnishing the water necessary to reclaim immense tracts of land and it will not be long before Yuma will bloom and blossom with perpetual fruit and flowers.

The work of reclamation has already begun. A canal from the Gila has been started and is approaching completion. This canal will irrigate the Mohawk valley about sixty miles east of the town of Yuma. The valley contains about 40,000 acres of as fine land as lies beneath the sun. Another canal is projected to take water from the Colorado river about thirty miles north of the town. It will run in a southerly course irrigating about 15,000 acres of land lying between the Colorado and Gila rivers, thence crossing the Gila in a flume or pipes about one mile below Gila City on the Southern Pacific Railroad, it will irrigate 12,000 acres between Gila City and the town of Yuma. It will then pass along the foot of the mesas to the northern boundary of Mexico rendering 300,000 acres susceptible to cultivation. This canal will be forty feet wide on the bottom, and fifteen to twenty feet in depth. Its length will be one hundred miles. Other large canals are contemplated.

When the proposed canals are completed Yuma county will be one of the richest horticultural sections on the globe.

The soil is as rich and fertile as any upon the earth. The orange, lemon, lime, banana, olive, fig and grape grow bountifully. They cannot be excelled in flavor and quality by any part of the world. Peaches, plums, pears—in fact, every variety of fruit, vegetable or nut known to man, thrive and yield prolifically.

Here will be the paradise of the horticulturist. Six weeks before the fruits of any part of Southern California are ripe, those grown in Yuma are ready for market, thus commanding ready sale at highest prices. Tobacco, sugar-cane and cotton are here at home. Hemp grows wild. No place offers greater inducements to the immigrant seeking a home. Here he can find both wealth and health. The climate has been much misrepresented by those entirely ignorant of the subject. The mean temperature during June, July and August is 85°, but the heat does not produce discomfort, as it would on the Atlantic sea-board, and for nine months in the year the climate is perfection. It is rapidly becoming a winter resort for those afflicted with pulmonary diseases, who find immediate relief in this warm and balmy air.

The Southern Pacific Railroad runs through Yuma county, furnishing the fruit grower rapid transportation for his products.

The town of Yuma has a population of about twelve hundred. The S. P. R. Co. have erected a large and pleasant hotel, which is kept in good style. It overlooks the river and the steamboat landing. A short distance from the town is located the territorial prison, a substantial building well suited for the purpose intended.

PINAL COUNTY.

PINAL COUNTY has a total area of 5210 square miles. This county is now making rapid strides forward, and will be one of the finest agricultural and horticultural sections to be found in the West.

The county has an abundant supply of water. The Gila river flows through it from east to west, and the San Pedro river runs

through its southeastern corner. There are smaller tributaries. Last year ten irrigating canals had reclaimed 30,000 acres of land. The work of canal building, however, has just begun. The Florence Canal and Water Company are constructing a great canal, which will irrigate one hundred and fifty thousand acres of land. It is expected that fifty miles of this canal will be completed and in operation by October 1st of this year. Lateral ditches will be constructed, carrying water to all the land possible. The width of the main canal is twenty-five feet on the bottom, with sides sloping so as to give an average width of thirty-six feet. It is designed to carry a volume of water four feet deep.

A writer, speaking of the lands which will be covered by this canal, says:

"The lands along the canal are capable of producing almost every known product of the temperate zone and many of the semi-tropical fruits. They are a part of the great thermal belt never touched by frost, and are therefore especially desirable for the growth of citrus fruits. Grapes flourish with remarkable vigor and productiveness, and the dry atmosphere peculiarly adapts it for raisin making. It is a specially favored section, in which almost every thing of necessity or luxury can be produced in abundance, and where a home in all its perfection can be created in a very few years.

It is a grand enterprise for this portion of Arizona, this Florence canal. It is destined to start the wheels of progress, and it will lead to other new and equally important developments."

The olive flourishes here and produces fruit equal to that of Santa Barbara, California, which is nowhere excelled. The yield of the raisin grape is as great as in Maricopa and the experiments made in wine making prove that this will become a source of great wealth in the future.

Heretofore the farmer has directed his energies to the growing of grain and alfalfa, but as the means of transportation are increased they will turn their attention more and more to horticulture which will yield a greater return for their labor.

A railroad is proposed from Phoenix through Florence to the Southern Pacific at Tucson, and running through this rich and fertile section. The Southern Pacific now passes through the southeastern corner of the county, but below its most productive portion.

With the completion of the contemplated railroad and the opening of the great canal and other projected enterprises a wonderful upward start will be given to the lands lying in Pinal. The remains of ancient canals, the wonderful ruins of Casa Grande, the numerous mounds, the presence of broken pottery everywhere through the valley of the Gila, in Pinal county, are unmistakable evidence of a once dense population, and the writer whom we have above quoted is not wrong in saying that

“Upon these broad and fertile mesa lands once teeming with life and activity, history will so far repeat itself that in this respect the now barren desert will be made to again blossom as the rose, and thousands upon thousands of beautiful and happy homes will arise above the mysterious ruins in fulfillment of the divine command. The time has come for the inevitable change and the opportunity is ripe.”

“Money, enterprise and intelligence have combined to again turn a portion of the abundant waters of the Gila river, by nearly the same course as that in which they were diverted in the obscured ages of the twilight of Time, and upon the same lands once tilled by the ancient pioneers of whom so little is really known. The zealous antiquarian might regard this rejuvenation, or rather resurrection, of the ashes of a dead civilization as a piece of wicked vandalism, but the bard of the future will weave a brilliant woof of sentiment with the warp of old and new history into a web of song that will live on forever, extolling the unfolding and startling beauties of destiny and evolution.”

Florence, the county seat, is situated in the Gila River valley, about twenty-five miles north of Casa Grande station, on the Southern Pacific Railroad. It is a delightful garden spot. Living streams of water course along its well shaded streets. Every home surrounded with flowers, vines and trees is charmingly picturesque and beautiful. The population is about 2,000, but recently has been growing very rapidly and attracting general attention.

PIMA COUNTY.

THERE is an abundant supply of agricultural land in Pima county, which but requires irrigation to render it fruitful, prolific and second to none in Arizona.

All varieties of deciduous fruits can be produced. The fig tree grows to perfection. Grain, alfalfa and vegetables thrive well. The soil everywhere is exceedingly fertile and productive, but until recently little attention has been given to irrigation and farming. The commercial activity of its principal towns and the development of its rich mines have absorbed the attention of its people. But within the past year careful investigations of its water supply have been made and several important irrigation canals have been projected. It will not be long before Pima will bring its arable and irrigable lands under cultivation.

Mr. Patrick Hamilton made the following estimate of the agricultural lands in Pima county susceptible of irrigation :

Santa Cruz valley, from the line of Sonora to a short distance north of Tucson, 45,000 acres. Sopori creek, about 600 acres. Arivaca and Sasabi flats, about 1,000 acres.

Sonoita valley, 2,000 acres.

Babacomari valley, 1,000 acres.

Cienaga, above Pantano, 2,000 acres.

Rillito creek, east and north of Tucson, 1,000 acres.

Tanque Verde, east of Tucson, 1,000 acres.

San Pedro valley, 6,000 acres.

San Rafael and Sycamore creek, in the southeastern part of the county, 2,000 acres.

The people of Tucson have awakened to the importance of the farming industry of the county. A large canal to be taken from the Santa Cruz river is to be constructed.

Another irrigating ditch is being taken out of the Rillito creek which though dry at the surface has an underground flow. The experiment, if successful, will be an example that will be speedily followed elsewhere in the county. The *Star*, of Tucson, describes this important undertaking as follows :

"The Davidson irrigating ditch on the Rillito is progressing most encouragingly. Sixty men are employed. Over two hundred feet of the cement flume is finished and its construction will now go forward at the rate of seventy-five feet daily. The carpenter work for the underground flume is being pushed with rapidity and a few days will see it in place and the underflow stream of the Rillito as it rises pouring through the cement flume.

The scheme is not only a very practicable one, but will be a success in every particular; there will be about 4,000 inches of water beyond a doubt carried out by the flume and probably four times that quantity will be the result.

The system adopted means to catch the underflow of water in the Rillito valley, and the plan adopted will secure the result. About ten thousand feet of underground tunneling will direct all the water into the flume which is constructed of cement, and when complete will be from five to fifteen feet under the surface bed of the river.

This project is the first that has been attempted in Arizona to bring the underflow of water to the surface, but it is the project that will prove the initial step of a system for irrigation that will revolutionize irrigation in Arizona and will make many thousands of acres capable of reclamation, which under the old system of depending entirely upon surface water could not be utilized. The *Star* is free to say that it believes that every acre of land in the Rillito valley can and will be reclaimed to agricultural purposes through the new system of irrigation. The Davidson ditch will be the beginning."

Tucson is the county seat. Rich mines within the radius of a few miles together with its commercial advantages and location have made it a large and populous town, while the wonderful salubrity of its climate is attracting to it invalids from all parts of the United States.

GRAHAM COUNTY.



GRAHAM COUNTY contains an area of 6,485 square miles and is abundantly supplied with water. The Gila river runs through it from its eastern to its western boundary and is fed by many tributaries among which are the San Francisco, the Blue, Eagle Creek and Bonita. Graham county has long been recognized as one of the leading agricultural counties of Arizona. Its fertile soil is peculiarly suited to fruits of the hardiest

varieties. Apples, plums, cherries, peaches and grapes thrive well as do also the smaller fruits such as strawberries, blackberries, gooseberries and currants. Fruit culture has as yet hardly begun, but the ample facilities for irrigation will develop this industry as soon as railroad transportation shall afford a market. Solomonville is the county seat.

GILA COUNTY.

GILA COUNTY possesses large tracts of land, which can be easily irrigated from its abundant supply of water. The land which lies along the line of the contemplated Mineral Belt railroad is very fertile. The soil is a rich, sandy loam, which will grow almost anything, but its present distance from all rail communication retards all attempts at fruit culture. Containing, as it does, some of the richest mines in the territory, it can afford to postpone its agricultural development. Globe, an enterprising mining town, is its county seat.

COCHISE COUNTY.

The immense mining and cattle interests of Cochise county have absorbed the attention of its inhabitants to the exclusion of farming. Its mines are said to have produced \$25,000,000, and its cattle number 75,000 head. Tombstone is its county seat.

A CITRUS BELT.

IN Yuma, Maricopa and Pinal there is no doubt that the orange, lemon, lime, banana, fig and raisin grape can be successfully cultivated. There is an ample sufficiency of water to irrigate all the arable lands in the Gila and Salt River valleys. The immense profits which can be realized from the production of the citrus and semi-tropical fruits, the culture of the raisin grape, and

the manufacture of sherry and other wines, will cause the lands in these counties to rapidly appreciate in value.

The PACIFIC FRUIT GROWER publishes the following as the cost of a ten-acre orange orchard three years from planting, allowing the price paid for the land to be \$250 per acre, and the rental of water \$3 per acre:

"Ten acres of land	\$2,500.00
Preparing the ground	50.00
One thousand trees	1,000.00
Planting complete	50.00
Water, first year	30.00
Care of orchard, first year	200.00
Incidentals	70.00
	<hr/>
	\$3,900.00
The two following years, counting interest on investment at eight per cent, will cost	1,320.00
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Cost of orchard	\$5,220.00

At the end of the third year the orchard will bear enough to pay the interest on the investment at ten per cent, and ought to do a good deal more than that. In two years more it will bear from one to one and a half boxes to the tree, which for navel oranges this year would be from \$4,000 to \$6,000 for the product of the orchard. From that figure it will gradually advance.

Mr. Hewitt's orchards (formerly Twogood's) contains about twenty acres, only twelve of which are in bearing. From these twelve acres he sold this year's crop of oranges, on the trees, for \$10,000. The greater part of it was planted to seedlings in 1872-73, the other varieties not being planted until 1877-78. The seedlings were four years old.

Mr. Johnson has twenty acres in oranges and grapes. The oranges were sold, this season, on the trees, for \$8,000, and the grapes for \$2,500. Many other similar examples might be adduced."

In Southern Arizona, where land can be had for \$10 an acre, and water at \$1.25, the original cost of the ten-acre orchard would be less than \$1,500, instead of \$3,900, while the profits would be greater, as the fruit maturing three weeks earlier would find a higher market.

WATER AND ITS COST.

I HAVE attempted in a brief manner to give more fully a clear idea of the Salt, Gila and Colorado valleys, embraced within the counties of Maricopa, Pinal and Yuma, and to show their fertility, and demonstrate the value of their lands to those seeking homes. It only remains to add a few words, general in their character, in reference to the cost of reclamation of land, incident to the necessity of irrigation, and the price at which reclaimed lands can be purchased, and my task is done.

The laws of Arizona permit any person to appropriate water for mining and agricultural purposes, but does not sanction the English common law principle of riparian rights. The territory claims the power to regulate the water supply, so as to prevent undue waste, and also, if occasion requires, to fix its price, so as to prevent extortion on the part of ditch owners.

Water has been so abundant heretofore that it has been used with great prodigality. Irrigation has been by flooding, which is wasteful as compared to sub-irrigation. It is doubtful if in the valleys under review there will be any necessity for a resort to those methods of irrigation which entail a more economical use of water.

The Salt river supplies more water than all the streams in Southern California combined; the Gila, as it flows through Pinal, Maricopa and Yuma counties, could supply water for treble the quantity of land that can be brought under canals, while the Colorado is navigable for more than one hundred miles above the town of Yuma. Many of the canals in these valleys are owned by the proprietors of the lands, and therefore are taxed only for keeping the ditches in repair. When this is not the case, the canals sell the water at a fixed rate, making a charge upon the land cultivated, varying from one dollar to one dollar and a half per acre.

In all of these counties land can be entered along canals now being constructed and lands can be purchased that have been already reclaimed at from ten to fifty dollars per acre, according to the value of the improvements made thereon.

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valleys. Lands are rapidly being reclaimed and occupied by citizens from both the Atlantic and Pacific Slopes.

Land values are appreciating and Yuma, Pinal and Maricopa counties will soon support a very dense population.

STATISTICAL INFORMATION.

HON. PATRICK HAMILTON, who, until recently, has filled, with marked ability, the office of Commissioner of Immigration, has written in the most fascinating style several works, intended as guides and reference books, containing complete, accurate, and trustworthy information concerning all things which would interest any one who desired to make a home in Arizona. With an experience gained from a long residence in the territory, and by a careful compilation of statistics and consultation of authorities, Mr. Hamilton was enabled to produce a book of singular interest, embracing the history, topography, scenery and geological features; fauna and flora, counties and towns, climate, mining, timber, coal and agricultural resources of Arizona; its schools, churches, society, and, in fact, all the information which any person could wish who contemplated a residence in the territory.

Those who desire to know all about Arizona and its varied resources, will be furnished with Mr. Hamilton's "ARIZONA FOR HOMES" free (postage prepaid), upon application to the Commissioner of Immigration, Phoenix, Arizona.