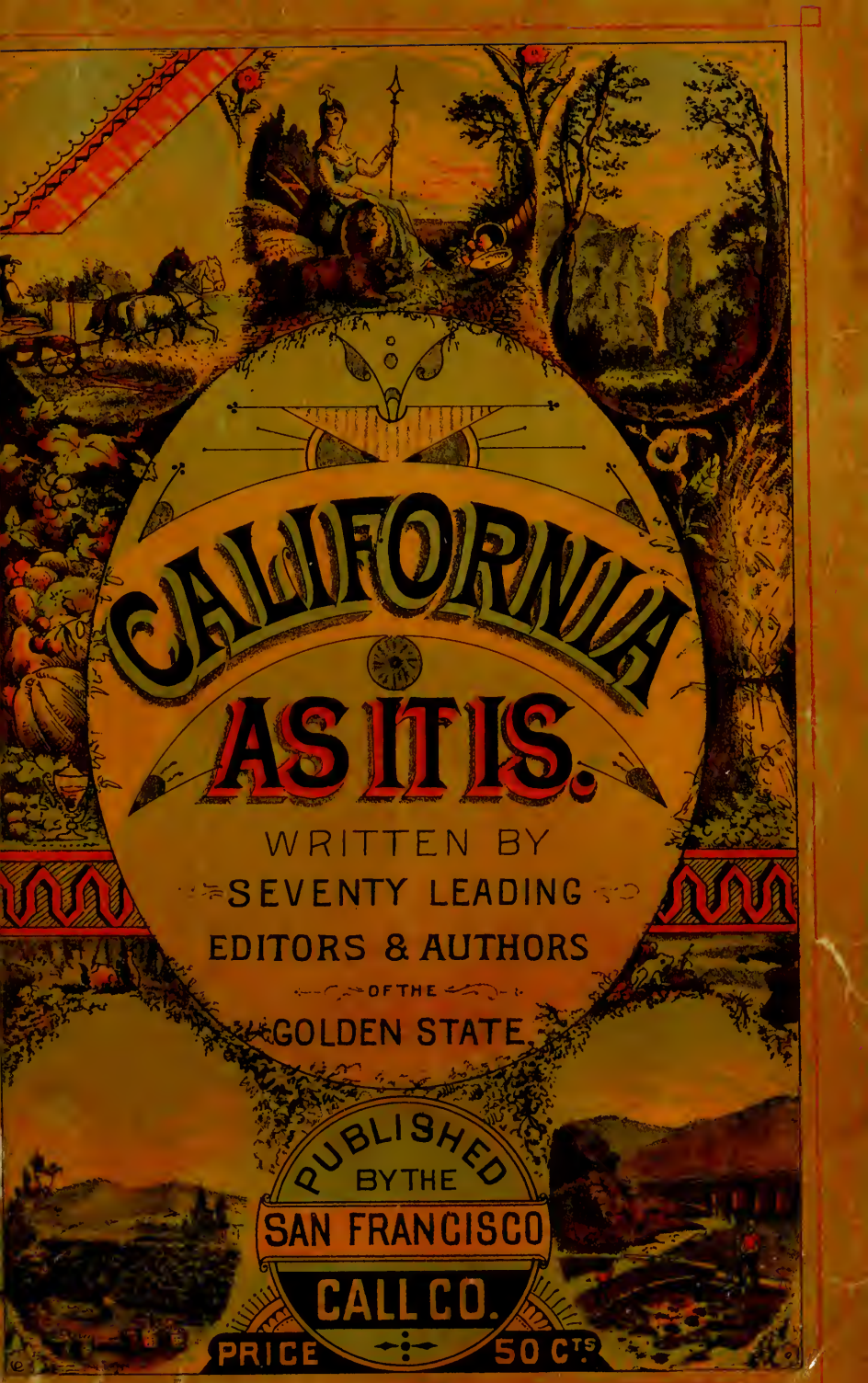
CALIFORNIA
AS IT IS.
WRITTEN BY
SEVENTY LEADING
EDITORS & AUTHORS
OF THE
GOLDEN STATE.
PUBLISHED
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SEVENTY

OF THE

LEADING EDITORS AND AUTHORS OF THE GOLDEN STATE

FOR THE

WEEKLY CALL.

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MERCED COUNTY.

By ROBERT J. STEELE,
Editor and Proprietor of the San Joaquin Valley Argus.

Merced County is situated in the heart of the great an Joaquin Valley, embracing a territory extending om the foothills of the Sierra Nevada range of ountains on the east, to the summit of the Cen- al or Coast Range on the west. It is bounded on e north by Stanislaus County, east by Mariposa, uth by Fresno, and west by Stanislaus, Santa lara and San Benito counties. Its greatest length sterly and westerly is about ninety miles, and its erage width is about forty miles. With the ex- ption of that portion lying upon the eastern slope the Coast Range, a strip not exceeding twelve iles in width, the land is generally level prairie, ith occasional lines of timber skirting the various reams running through it.

THE CLIMATE IS MILD AND EQUABLE,

e and frost being rare even in the coldest Winters, nd the heat in Summer never being excessive— rely too hot for men to work throughout the day the open harvest fields without inconvenience or ffering from heat— the seasons being most proper- denominated "wet or rainy" and "dry season," stead of Winter and Summer. The grass and erbage shoot forth with the fall of the first rains generally in November—and continue green and owing until maturity or the dry season sets in— nerally in May or June—when the wild grasses come dry, affording nutritious feed for stock until e next rainy season comes on and green feed prings forth again.

THE SOIL

s generally rich and produces heavy crops of heat and other cereals, without irrigation, save n exceptionally dry seasons, when there is almost total lack of rainfall during the Winter months. ith the exception of the sandy district extending om the Stanislaus County line, on the east side of e San Joaquin river, south to within a few miles f the county seat, Merced, the soil is heavy--some istricts being black adobe, and others being yellow lay or mulatto soils, easily cultivated after once eing broken by the plough. The sandy and other ght soil sections are easily cultivated and produce emunerative crops of small grain.

THE PRINCIPAL PRODUCTS

re wheat, rye, barley, Indian corn, sheep, cattle, orses, mules, hogs, goats, cotton, vegetables, wine, istilled liquors, poultry, and almost every variety f fruits—the orange, lime, lemon, and many other arieties of tropical and semi-tropical fruits, grow- ng to perfection and paying well for the labor be- towed upon their cultivation.

THE PRINCIPAL TOWNS

re Merced, the county seat, 140 miles from San rancisco, Athlone, Snelling, Hopeton, Merced alls, Livingstone, Los Baños and Central Point. he town of Merced, situated on the line of the outhern Pacific Railroad, contains a population of bout 2,000. Has five churches, seven hotels, six very stables, one planing mill, two large lumber ards, two large warehouses, each capable of stor- ng 12,000 tons of grain, one district school building, apable of accommodating 600 pupils, and the lar- est and finest court house and jail in the San oaquin Valley. There are three dry goods stores, wo drug stores, three tin and hardware stores, two ook and stationery stores, four large watch and jew- lry stores, one iron foundry, five blacksmith shops, five wheelwright shops, three butcher shops, three printing offices publishing papers, fourteen sa- loons and seven general merchandise stores, two milliner and two merchant tailor establishments; two large furniture stores and an undertaker's shop, and one brewery. Merced is lighted by gas, and supplied with pure water from the water works of Silman & Stevenson. Buildings are be- ing constantly erected, and a number of elegant stores and residences have been recently built. The other towns are small, containing from one to three stores each, besides hotels, stables, shops, etc., requisite to supply the wants of the country surrounding each.

MANUFACTURING ESTABLISHMENTS.

At Merced Falls is situated the Merced Woolen Mills, and the flouring mills of William Nelson & Son. The former turns out large quantities of blankets, flannels, linseys, cassimeres, broadcloths and other woolen goods; and the latter runs on full time, having a capacity of about fifty barrels of flour per day. The other mills of the county are Murray's flouring mills, two miles below Mer- ced Falls, and the Merced City Mills at Snelling, the former with a capacity of 30 and the latter 75 barrels of flour per day. Corn and rye are also ground in large quantities.

WATERCOURSES.

The San Joaquin and Merced river and the Chow- chilla, Deadman's, Mariposa, and Bear Creeks, and their tributaries, flow through the county from the Sierra Nevadas; and the Los Baños, San Luis, Cotton- wood, Sycamore and numerous others, flow into the San Joaquin from the Coast Range on the west side of the valley. The San Joaquin and Merced rivers and Salt Slough, a tributary of the San Joaquin, are navigable, affording means of transporting the crops of the west side and the country contiguous on the east side, steamers plying between Stockton and the Upper San Joaquin river landings generally from December to August, about which time the season closes by reason of low water.

CANALS AND IRRIGATING DITCHES.

The San Joaquin and King's River Canal extends from Firebaugh's Ferry, in Fresno county, along the base of the Coast Range to Orestimba Creek, in Stanislaus county, a distance of nearly seventy miles, nearly sixty miles of the line of which is in Merced county, affording irrigating facilities to a large scope of country west of the San Joaquin river. This canal has been in operation as far down as Los Baños since the Spring of 1873, and in 1878 was extended to Orestimba Creek, a dis- tance of thirty miles down the valley. Its source of supply at present is the San Joaquin, and when an immense supply of water is required the com- pany will tap Lower King's River, which has been ascertained to be available at a comparatively small expense. On the east side of the San Joaquin river is the

FARMERS' CANAL,

Which taps the Merced river on the south side at a point about four miles above the town of Snelling, and is now available for irrigation upon the dis- trict of country west of the road leading from Mer- ced to Snelling, lying between Bear Creek and the Merced river as far west as the San Joaquin, em- bracing Livingstone (Crestey's Station) and the Merced colony, some 25,000 or 30,000 acres of which will be irrigated this year. This canal has just been completed through the ridge dividing the Merced river from Dry Creek (Canal Creek), by

which the water is conveyed through a tunnel into the latter, whence it is conveyed down the channel of Dry, or Canal Creek, to a point about eight miles east of Livingstone, where it is being taken out in distributing ditches and conveyed upon the lands in the district above mentioned. It is the calculation of the landholders along the line of ditch thus far completed to irrigate this season about 25,000 acres, which will be cultivated principally in wheat, the ground being sandy and peculiarly suited to irrigation. In addition to the above canals, there are numerous local ditches owned and used by farmers along the Merced river, from Merced Falls to the ranches of Dr. Griffith and Mrs. Borfield, a distance of sixteen or eighteen miles, supplying water for irrigating many thousand acres of rich bottom land.

TRANSPORTATION FACILITIES.

In addition to the facilities afforded for the shipment of products by means of steamboats, spoken of elsewhere in this article, the great Southern Pacific Railroad traverses the country in a northwesterly and southeasterly direction a distance of nearly forty miles, about midway between the San Joaquin river and the foothills of the Sierra Nevada range, affording cheap, convenient and rapid transportation for the products of all that portion of the country lying east of the San Joaquin, at the same time making Merced, Plainsburg, and other stations along the line, shipping points for the rich mineral regions of Mariposa, lying farther to the eastward, in which large quantities of gold are being extracted, the machinery for working the mines of which is hauled upon wagons from Merced to the mines and mills in the mountains.

ARTESIAN OR FLOWING WELLS.

By no means an insignificant industry in Merced county, is that of sinking artesian wells, flowing water being obtained at from 125 to 300 feet, and supplies being obtained for irrigation and stock purposes in some of the dryest parts of the county, literally turning what was hitherto deserts into thrifty garden spots. The number of flowing wells at date (1882) is 101, each irrigating from 25 to 40 acres; the deepest well is 338 feet, the shallowest 112 feet. Some of these wells are upon large stock ranches, but the most of them supply water for irrigating small farms, and the possession of them has rendered their owners independent. Many new wells are being bored. The source of supply for these wells appears to be inexhaustible, the flow of water from the oldest wells increasing instead of diminishing, and none of them weakening because of other wells being sunk in close proximity to them, as many predicted would be the case. Among the water resources of the county it may not be improper to remark that almost everywhere in the valley good water, in inexhaustible quantities, can be obtained by boring from four to six-inch holes to a depth of from fifteen to forty feet, the water rising in them in most instances within from eight to ten feet of the surface, and furnishing a sufficient stream to keep an ordinary pump running, propelled by windmill or horse-power, even in the dryest seasons. In the past few years it has not been an uncommon thing for large ranchos, with their thousands of sheep, horses, cattle and other live stock to be supplied entirely with water from two or three of these shallow-bored wells, the pumps being run by horse or windmill power, according to circumstances.

VALUE OF LANDS.

Lands in large tracts may be purchased at from $2.50 to $15 per acre, according to quality, situation, etc., but small farms are held higher in proportion, being generally better improved. Unimproved lands, however, of good quality, in small quantities, can be bought at prices ranging from $4 to $10 per acre. Of course, lands lying contiguous to towns, railroad stations steamer landings and upon public thoroughfares, are held at higher figures, even though unimproved.

ORANGE CULTURE.

The developments of the past few years have proved conclusively that the soil and climate of Merced county are well adapted to the production of the orange and various other tropical and semi-tropical fruits. In Merced, during the Christmas holidays, ripe oranges were to be seen hanging upon the trees in many of the gardens, and in two or three years more this luscious fruit, grown at home, will be as plentiful in its season as are peaches, apples or any of the common fruits of the country in their seasons. The cultivation of oranges and kindred fruits in future years is destined to become an important industry in Merced county.

COTTON CULTURE

Was introduced in this county in 1869 by the late Col. J. M. Strong, and the crop of 1881 amounted to 95,000 pounds of clean lint, available for manufacture, the most of which was used by the Merced Falls Mills.

COLUSA COUNTY.

By W. S. GREEN,

Editor of the Colusa Sun.

Colusa County comprises a very large portion of the great Sacramento Valley. It is bounded on the north by Tehama, on the east by Butte and Sutter, on the south by Yolo, and on the west by Lake and Mendocino, The southern boundary corresponds very nearly with the 39th degree of north latitude. It is eighty miles north of San Francisco, and a north line from that city would run through the county about twenty-five miles west of Colusa, the county seat. The county is just sixty miles from north to south, and between forty-five and fifty from east to west, and consequently contains between 2,800 and 3,000 square miles. The northern and southern boundaries run on the lines of the Government surveys. The Sacramento river forms its eastern boundary for eighteen miles from the northeast corner, and then the line runs across to Butte creek, thence down that stream to what is known as Butte Slough (a large outlet from the river which, in flood time, discharges into the tules between the Sacramento and the Feather Rivers), thence up that slough to the river, and thence down the river again eighteen miles to the south line. The western boundary is the Coast Range Mountains. About 1,500 square miles of the county's area lie in the Sacramento Valley, the balance being mountains, low hills and smaller valleys. The small valleys have been estimated at 200 square miles, the low hills, most of which are good for stock range, at 700 square miles, and the balance mountain and waste land.

THE SACRAMENTO RIVER.

Which, as we have seen, forms the eastern boundary for a portion of the distance, and runs through the county for several miles, is navigable to the northern line of the county. It was once continuously navigated to the town of Red Bluff, the seat of justice of Tehama County, but after the California and Oregon

Railroad was completed to that place—the upper portion being bad and full of shoals and rapids—it did not any longer "pay," and boats now run only as high up as Colby's Landing, which is two miles south of the northeast corner of the county. It is navigated principally by boats towing barges which carry off the immense amounts of grain raised in the county. The character of the river changes at the town of Colusa. From that point down, from five to seven hundred tons is a load for a barge, but after that point about three hundred tons is a load. The boats generally bring down two smaller barge loads to Colusa and then change on to one. The river above the mouth of the Feather River has not been affected by the mining debris, and is clear and deep, The most difficult portion of the river from Colusa to the bay is a bar four miles above Sacramento City, but as the river is there very wide, a wing dam would remedy that. The price of freight on wheat from Colusa to the side of the ship at San Francisco is only $1 50 per ton. The average width of the river is about 350 feet. From a point about eighteen miles below the north line of the county the river runs on a ridge, and the overflow runs back into a "trough," the general course of which on both sides is parallel with the river. The slope of the valley from the foot-hills on the west side, reached to within three or four miles of the river, and this elevation on the one side and the river elevation on the other, forms the "trough." On the east side the water from the river in flood times runs into Butte Creek. On both sides the water is generally carried back in sloughs. The land between the river and the bottom of the trough is all rich alluvial, and will produce anything that will grow in any portion of the State.

ON THE WEST SIDE

Of the river the plain falls gradually toward the river, and the creeks that run from the foothills toward the river (all dry in Summer) empty into the trough and do not reach the river. The valley is, therefore, covered with a rich deposit from the wash of the foothills. This is the great wheat-growing district of the county. Stony Creek, the last one that empties into the Sacramento on the west side before it reaches the bay, rises in the Coast Range of mountains almost due west of the town of Chico, and runs almost due north between the coast mountains and a low ridge of hills about forty miles into the lower end of Tehama County, where it breaks through the ridge into the plains and bears southeasterly to the river, about six miles below the upper line of the county, It is dry in Summer after it enters the valley. In Winter, it is from 800 to 1,000 feet wide and some ten or twelve feet deep; and, as the fall is very great, it carries an immense quantity of water. There are some rich valleys along the creek in the mountains.

THE NORTHERN RAILWAY.

Where it enters the county on the south line, is near to the foothills, but moving in a tangent it soon gets out to about the middle of the plains, and where the survey crosses the northern line of the county it is about midway between river and foothills. This road has been completed to the town of Willows, some eighteen miles south of the northern line. Owing to the river competition the rate of freight on this road has been lower than on any other of the same length in the State. Several towns have sprung up along the line of this road in the last two years. Arbuckle, Berlin, Williams, Maxwell and Willows are all trading posts of considerable importance. On the line of the road, above where it is completed, there are Germantown and Orland, the latter on Stony Creek, and three miles south of the county line.

THE RIVER TOWNS.

And trading points are (beginning south and going north) Grand Island, Simm's Landing, Sycamore, Colusa, Princeton, Butte City, Jacinto and St. John. All these except Butte City are on the west side of the river. In addition to these, College City, two miles east of Arbuckle and six miles from the Southern line of the county; Leesville, in Bear valley, 17 miles west of Williams; Sulphur Creek, 10 miles south of Leesville; Kanarha, 8 miles southwest of Willows, and Olimpo, Elk Creek, and Newville, all on Stoney Creek, the latter on the north fork. The Christian Church has a college at College City, endowed to the extent of about $50,000 by A. Pierce, a rich old bachelor who died there some twelve years ago. It ia in a flourishing condition.

THE TOWN OF COLUSA,

Situated on the west bank of the river, twenty miles north of the south line, is the county seat, and has a population of about 2,500. Being the center of about the richest agricultural district in the State, and the price of freight so low, it is naturally a very prosperous town. It was laid out in 1850 by Col. U. D. Sample. The people of the town have not engaged, to any extent, in manufactures, but it is one of the best centers in the State for such purposes. In fact, except five flouring mills—at Colusa, Sycamore, Williams, Princeton and Orland—there is but little manufacturing done. There is an abundance of fine timber in the Coast Range, but two or three miles of small capacity are all there are in the county.

PROGRESS.

The first assessment roll, in 1851, footed up $373,206; in 1871, the footing was $1,339,041, and in 1878, it is $12,420,308. The rate of State and County taxes in 1878 was $1 50 on the $100. The condition of the county government is shown by the following balance sheet, made just before the January settlement of the Collector. Nearly the entire amount charged to the Collector was paid and all outstanding warrants redeemed:

BALANCE SHEET.

Resources.

County property as follows:	
Court House and lots, estimated at	$ 27,000 00
County Jail and fixtures, estimated at	17,000 00
County Hospital, estimated at	12,000 00
Cash, balance in Treasury	28,294 32
Balance charged Tax Collector for State and County taxes 1878-9, less commissions	173,056 77
Total	$257,351 09

Liabilities.

Funded debt—bonds issued under Act of 1867-8	$ 29,500 00
Floating debt—warrants outstanding	9,241 76
Balance due State, as per Ledger account	4,910 00
State's portion of taxes charged Collector, less commissions	63 454 15
Net solvency	150,245 18
Total	$257,351 09

PRODUCTIONS AND PRICE OF LAND.

The principal export productions of the county are small grain, wool, mutton, beef and pork. In 1876, Colusa County exported $4,500,000 worth of wheat, and her other exports bring the total up to $5,500,000. The crop of 1877 was a little short of that, but not a great deal, and the exports of 1878 would have been much greater had it not been for the rust which struck the wheat crop last Spring. As it was, only about 100,000 tons of wheat were exported. The price of wool, beef, pork and mutton being very low, the net amount realized was not a great deal in excess of that of 1876. The price of land ranges from $10 to $30 an acre, according to quality and location. There are no Government lands in the valley portions of the county subject to location. The estimated population is between 15,000 and 16,000. When some of the larger farms shall have been cut up into smaller ones, and when people turn their attention to other productions than wheat, Colusa will be capable of supporting a population of 100,000 to 150,000.

MINES.

There have been no very valuable mines discovered in the mountains of this county, but there exists very large quantities of copper ore that will be valuable when copper comes to be worth mining. Several quicksilver mines near Sulphur Creek have been worked, and before the price of that article went down so low, a considerable revenue was derived therefrom. There has been one gold mine worked on Sulphur Creek, and a considerable amount of gold taken from a kind of black quartz. Considerable deposits of iron ore

have also been discovered, but no attempt has ever been made to work them. There are several

MINERAL SPRINGS

In the county, the reputation of which are growing from year to year. Among them, Wilbur's Hot Sulphur Springs, on Sulphur Creek; Cork's Springs, due west of Colusa, and Fouts's Springs, on Stony Creek, a little north of these last. The travel to Allen's and Bartlett's Springs, on the east side of Lake County, goes through Colusa County. Stages run from Colusa and from Williams to all the above-named springs.

TIMBER.

Oak, sycamore, cottonwood and ash grow along either bank of the Sacramento River, and oaks grow along the foot-hills, but the "plains" are entirely free of timber. Some of the earlier farmers have considerable trees that they have started, but the settlers on the plains have to depend on the river or the foot-hills for fire wood. In the mountains there is plenty of pine timber of fine quality. More of the lumber, however, coming from Cnico down the river from Red Bluff or from Puget Sound. The latter is the favorite fencing material.

WATER

Is found in wells along the river and in the plains, generally at from ten to twenty feet deep. It is generally good, but there are some places on the plains where the surface water is brackish, and wells have to be bored from 50 to 150 feet deep to get below it. No experiments have been tried for artesian water. In the foot-hills and mountains there are numerous springs—many more than there were in 1850. She water in the river is clear and almost as soft as rain water, and the wells along the river generally afford excellent water.

W. S. GREEN.

MONTEREY COUNTY.

By J. MERRITT,

Editor of the CASTROVILLE ARGUS.

Monterey County is one of the largest counties in California, having an area of 3,600 square miles, or over two and a quarter million acres of land. The boundaries of the county are as follows: On the north by Santa Cruz County and Monterey Bay, on the east by the counties of San Benito, Fresno and Tulare, on the south by San Luis Obispo County, and on the west by the Pacific Ocean. The distance by rail to its county seat, Salinas City, from San Francisco, is 117.6 miles, and from Monterey. Salinas is about 18 miles. Owing to the peculiar topographical character of the county, it has a great diversity of soil, climate and productions, making it, for purposes of settlement, one of the most desirable regions in the State. The population of the county at the present time is probably about 12,000, and the assessment roll for 1881 shows a total property valuation of $7,185,195.

THE CITY OF MONTEREY,

Which figured so prominently in the early history of California, is at the present time a quiet seaport town of a few hundred inhabitants, whose advancement, in view of the many and important advantages of its surroundings, has been predicted for, lo! these many years, and will not, let us hope, prove altogether a myth. It has a fine harbor, amply protected from the south, east and west, and, with a breakwater from its northwestern shore, would afford perfect safety from all winds. The salubrity of the climate is well known, and to the visitor many points of interest in the vicinity invite notice, such as the Old Mission Church of Carmel, built in 1770; the really beautiful Point Cypress, the lighthouse at Point Pinos, and the Tassajara Hot Springs, about forty miles south of Monterey. Within a mile stands the magnificent Hotel del Monte, in a park of surpassing beauty. The comforts of home, blended with the luxuries of a first-class hotel, are here attainable. Elegant bath-houses, hot and cold salt water bathing are near by, and the cars from San Francisco stop at the door.

There is also regular steamboat communication with San Francisco, and at this moment an enterprise of great moment to Monterey and to the whole country is being pushed forward with all practicable speed. We refer to the development of the Monterey coal mine, located about eight miles south of the town, and the building of a railroad from the mine to Strader's Landing, a short distance below Carmel Bay. The railroad is to be a trifle over four miles in length, and the work of grading, etc., now in progress, is being done, and will be completed with white labor exclusively. The locomotive has been ordered from Pittsburgh, Pa., and the iron from the Pacific Rolling Mills, San Francisco. Of the quality of the coal, experts speak in the highest terms, and the large capital which has been and is being expended in tunnelling, and in the construction of a railroad must impress the public with the belief that the mine is a valuable one.

OTHER INDUSTRIES

Could, beyond doubt, find a profitable field in the vicinity of Monterey. Tanneries, for example, hides and tanning materials being plentiful; woollen and cloth mills, and shoe factories. There is abundance of clay for bricks of good quality and for pottery; the sand is considered the best in the State for glass-making, and has been for years exported in large quantities to San Francisco for that purpose; and the openings for lime kilns, saw mills (one of these has recently been erected near the coal mine), and other manufacturing establishments are promised. Large shipments of edible fish are made daily from Monterey to San Francisco by several companies of Italian fishermen, and the whale fishery, established in 1854, is still a prominent, though declining, local industry. Two companies of whalers are stationed at Monterey, one company at the Sur and one at Carmel, and the mammals captured are principally of the "California Gray" and "Humpback" species. A few miles back of Monterey lies

THE CARMEL VALLEY,

Dotted with farm houses and dairy buildings. On this soil, which is very productive, were raised the first potatoes cultivated in California. Dairying and stock-raising are extensively engaged in in the valley. The planting of vines and almonds has been successfully tried here, while peaches, apricots, pears, nectarines, cherries and strawberries thrive well. In the mountain streams south of the Carmel River there is fine trout-fishing. Quails, rabbits and hares are abundant, and deer and bear are found in the hills and toward the coast. The products of the valley are beef, butter, cheese, potatoes and pork, whale oil and dried fish being also extensively shipped. South of Monterey and along the coast there is a great extent of government land, all well watered and much of it having good soil.

PACIFIC GROVE RETREAT.

About two miles from Monterey are situated the Methodist Episcopal Encampment Grounds. The general arrangements of the encampment are fashioned after those at Ocean Grove, New Jersey, and are under the control of a Board of Trustees. They comprise 100 acres divided into residence lots, park, pleasure ground and streets

and avenues. A large amount of money has been expended here by the Improvement Company. Commodious halls for indoor meetings, stands and seats for outdoor gatherings, cottages, laundry, stables, etc., have been provided. The location is excellent, the grounds sloping to the bay shore, and covered with beautiful young pines. A mile distant is Point Pinos Light-house, and delightful drives in many directions, over finely-constructed roads, are enjoyed yearly by thousands of visitors.

SPRINGS.

In addition to the Tassajara Springs, about forty miles south of Monterey, which are becoming more popular every year, there are Chalybeate Springs, near the mouth of the Carmel River, and near Soledad, the present terminus of the Southern Pacific Railroad, the far-famed Paraiso Springs. At the last mentioned very comfortable accommodations have already been provided and the tide of visitors is constantly on the increase. A new road over the mountains to Tassajara has assisted travel to those springs, and we frequently hear of the wonderful sanitary virtue of the waters. The climate, both at Tassajara and Paraiso, is incomparable.

THE SALINAS VALLEY,

Lying between the Gabilan Range of mountains on the east and the Santa Lucia Mountains on the west, opens upon Monterey Bay at the north, extending south from Moss Landing over 100 miles, and having a mean width of about ten miles. Its area, therefore, is about 1,000 square miles, or 640,000 acres of land. Through the valley runs the Salinas River, which has a quicksand bottom, and carries in wet seasons a large volume of water. The principal tributaries of the Salinas are the San Lorenzo and Estrella from the east, and the Arroyo Seco, San Antonio and Nacimiento from the west. The lands of the valley are divided into three classes: First — The heavy, rich bottom lands, good for the growth of almost anything. This soil is mostly black abobe, and frequently contains just enough sand to make it work easily. These lands sometimes produce over 100 bushels of barley to the acre, and of wheat, to the acre, over 65 bushels. Average crop of wheat on these lands, 35 bushels; barley, 60 bushels. Second—The table lands, particularly well adapted to growing wheat and barley, of which grain the average yield per acre is 30 and 50 bushels respectively. These lands stand dry weather or a scant supply of rain better than any others in the valley. Third—The uplands, good for the production of wheat, barley, oats and rye. These lands lie close along the base of the mountains in the lower parts of the cañons and among the lower hills, and differ very much in quality in different localities. Some of this land is the best fruit land in the State, and will produce oranges, limes, lemons, peaches, apricots, almonds, figs, and the other fruits common to this section.

THE AREA OF LAND

Cultivated in this valley at present is about 150,000 acres, and in average seasons about half a ton of grain (taking the whole acreage under cultivation) is expected to the acre. The rate of freight from Moss Landing is $3 25 per ton, and storage for the season, fifty cents. From the nearest railroad station, Castroville, the freight rate is the same. but increases at each station up the valley. There is no doubt that the Salinas Valley, in fertility and diversity of soil, has no superior in the State, and when we add to this a mild and healthful climate, its great area of tillable land, and its proximity to San Francisco, the commercial centre of California, easy transportation and cheap freights, it may truthfully be said that there is no more inviting region on this coast. Several of the large ranchos have been and are being cut up and sold off, enabling men of moderate means to buy homes and improve them.

THE GABILAN MOUNTAINS

Extend from the Pajaro River, at the northern boundary of the county, through the entire length of the county. From the Pajaro River, going south, the first eighteen miles of the range are a system of low mountains, covered almost everywhere with grass and an abundance of timber. This part of the mountains is now nearly entirely occupied. The next thirty miles of the range is composed of high, rough mountains, which extend as far south as the San Lorenzo. From the San Lorenzo to the southerly boundary of the county these mountains are low, rolling hills, forming the foot-hills of the Coast Range, and are about 20 or 30 miles in width. In this section are several beautiful little valleys, among which are Peach Tree Valley, Cholame Valley, Indian Valley, Long Valley, Priest Valley and several others, nearly all of which possess a rich soil. These valleys have a delightful climate, peculiarly adapted to the growth of semi-tropical fruits. The land is nearly all unsurveyed Government land, and at present is used chiefly in the stock business. The Gabilan Mountains, in their climate and adaptability, closely resemble the Santa Lucia, and contain immense deposits of limestone, as well as some quicksilver.

THE PAJARO VALLEY

Is located along the northern line of Monterey County, and extends across the Pajaro River into Santa Cruz County. This valley has one of the most productive soils in the State, and the land here is, for the most part, owned by those who till it. The Pajaro River runs westerly through this valley, and finds an outlet in Monterey Bay. This section is separated from the Salinas Valley by a low range of hills that extend from the Gabilan Mountains to Monterey Bay, the climate being similar to that of the Salinas Valley.

PRICE OF LAND.

Farming lands in this county range in price from $5 to $150 per acre, according to quality and location. Bottom lands in the Pajaro Valley are worth from $80 to $150 per acre, while rolling and hill lands sell from $15 to $40 per acre. The low hill lands interspered with small valleys, between the Pajaro and Salinas Valleys, vary in price from $6 to $25 per acre with improvements, there being of these lands 15,000 or 20,000 acres. The table lands of the Salinas sell at $30 to $60 per acre, while some sell as low as $15; heavy bottom lands, $50 to $150 per acre. The uplands sell from $5 to $25 per acre. There is a vast quantity of unsurveyed Government land in the hilly and mountainous parts of the county now held by possession, and these tracts are frequently offered at low figures for the right of possession and improvements. This possession gives no fee to the land, but gives to the purchaser the right of occupancy until surveyed and then the first right to buy at Government prices. The seemingly high prices of some of the lands above mentioned is easily accounted for when one considers that they are unsurpassed in productiveness, that the facilities for transportation are of the first and that we have a healthful and delightful climate. In 1874 there was sold in this county $300,000 worth of land to men who had been renting and farming the lands they bought, and most of whom made the purchase-money from the land itself.

RENTING LAND

A great deal of land is rented for farming purposes at $2 50 to $10 per acre, and many renters pay one-third or one-fourth the crop delivered. Much has been said and written concerning the renting system, but when one sees thousands on thousands of acres advertised for sale and no offers made, and this as to good land, well located and with a perfect title, it might be well to inquire what will the land-owner do with his land if he does not rent it—farm all his land himself or give it away?

IRRIGATION.

Until very recently this subject has attracted but little attention, because, as a rule, irrigation has not been needed. However, the means for irrigating large bodies of land in the Salinas Valley and other parts of the county are abundant and will gradually be availed of. Some of the Salinas

River water has been diverted so as to run through Salinas City, and interest in the subject, since the drouth of 1876-7, has been increasing.

STOCK-RAISING

Is still a prominent interest in this county, especially in the mountainous and hilly portions. The raising of cattle, horses, hogs and sheep is found profitable, and the breeding of Angora goats has been successfully pursued. The dairy business receives much attention in this county, a single establishment producing, but a few years ago, 200,000 pounds of butter, which yielded $70,000.

SALINAS CITY,

The county seat of the county, is located on the Southern Pacific Railroad, about 118 miles from San Francisco, ten miles from tide water at Moss Landing, and eighteen miles from the harbor of Monterey. The town is fourteen years old, and has a population of 2,600; is supplied with gas and water at low figures, and has a well organized and equipped fire department. There are seven church organizations, a good public school employing seven teachers, and lodges of Odd Fellows, Free and Accepted Masons, and of the Ancient Order of United Workmen. It has a flouring mill, a foundry, and two weekly newspapers, the *Index* and *Democrat*. The new Court House here, costing about $60,000, has been completed, and is a very handsome structure. In the vicinity of the town are located the grounds of the Agricultural Association, in which the fairs of the Society are held from time to time. Salinas City is a prosperous town, and its business men are noted for their enterprise and business shrewdness.

CASTROVILLE

Is located on the Southern Pacific Railroad, two and a half miles from Moss Landing, fifteen miles northeast of Monterey and eight miles north of Salinas City. It has a population of about 500, possesses good school facilities, three teachers being employed, and has two churches; also, lodges of Odd Fellows, Masons and Good Templars. Among other establishments the town has a flouring mill, which does an excellent business. The town is immediately surrounded by fine agricultural lands, well watered, while to the east of Castroville, about three or four miles distant, there are large tracts of grazing and timbered land and land suited to the growing of fruits and vegetables. The average yield of the lands adjacent to town is, of wheat, 30 bushels per acre, and of barley, 50 bushels; one hundred bushels of barley per acre have been raised in some cases. The health of the town is exceptionally good and the climate mild and healthful.

OTHER TOWNS.

Santa Rita is situated about three miles north of Salinas City; at this place is located the County Hospital. Natividad is situated at the foot of the Gabilan Mountains, six miles northeast of Salinas City. Chualar is a new town, located on the Southern Pacific Railroad, ten miles southeast of Salinas City. Gonzalez, on the same railroad, seventeen miles southeast of the county seat, and Soledad, the present terminus of the railroad, is twenty-five miles from Salinas City, and 142.9 miles from San Francisco.

NOTE.—In the preparation of this article, Butler's "Resources of Monterey County," and Walton & Curtis' "Handbook of Monterey," both reliable and valuable works, have been freely drawn from in the presentation of statements appearing in those works, and known by the writer to be accurate.

EL DORADO COUNTY.

By B. F. DAVIS,

Editor of the PLACERVILLE REPUBLICAN.

This county is situated about one hundred and ten miles—that is, its western boundary—east by northeast from San Francisco, and about thirty miles east from Sacramento—by rail from San Francisco, about one hundred and twenty-five miles. It is bounded on the east by the State of Nevada and Alpine County, on the west by Sacramento, on the north by Placer, and on the south by Amador County. Its county seat is Placerville, once one of the most prosperous and largest mining towns in the State, and yet one of the most thrifty, if not the largest, mountain town in the same, which is situated at about an equal distance from its western, northern and southern limits, say from twenty to twenty-five miles, while its eastern boundary stretches some seventy miles away. Placerville is situated in latitude 38° 43′ west, and longitude 120° 47′ north, at an altitude of eighteen hundred feet above the sea, and now contains about three thousand inhabitants. It has as fine stores, and its merchants carry as heavy stocks, as are usually found in towns of twice its size.

Nearly every climate to be found in any State in the Union may be found within the borders of El Dorado County, as we have altitudes ranging from 800 to 10,000 feet. The western, or foot-hill belt of the county, from some ten or twelve miles east of Placerville to the western boundary, comprising an area of about 30x45 miles, a good-sized county within itself, contains nearly all of the good agricultural and most of the good mining ground in the county. In this belt there is very little land that cannot profitably be put to use either for fruit, agricultural or grazing purposes, much of the best mining ground, when worked out and abandoned, making the best of fruit, clover and potato lands, and of this area but a tithe is as yet occupied by actual settlers. To the east of Placerville, extending to the eastern boundary, are some of the finest timber lands, especially pine, to be found in any country, which, at no distant day, will become very valuable, and much of this will also make excellent farming and fruit lands, especially that below an altitude of 4,000 feet. The whole county is well timbered, the lower foot-hills with both white and black oak, and a little higher up with both oak and pine, thus making fuel abundant and cheap. The whole county is also liberally interspersed with living springs, and wells of good water can be obtained almost anywhere by digging from twenty-five to fifty feet.

Most of the lower foothill lands are rolling, though thousands of acres may be found in a body as level as some of the big Illinois prairies, and these lands, for either hay or grain, are unsurpassed by any uplands in any State in the Union. In this section floods are unknown, as is also such a thing as a total failure of crops. No matter what the season, with proper care in preparing the soil, seeding and cultivation, a good crop is sure to follow.

Farming is, as yet, in its infancy in this county, and there is a home demand for all our products, save in butter, cheese, wool, fruit and wine, in excess of the production, at better prices than are obtained in either San Francisco or Sacramento. But there is now a steady increase in her farm products from year to year, with a certainty that in the near future a large surplus will be credited to her enterprising farmers.

The dairy interest here is a large one, and in the

main, most profitable. Those engaged in it are provided with two ranges, one in the lower foothills, for Winter use, and another on the eastern borders of the county, for Summer use, the latter being at an altitude of several thousand feet, where stock is driven after the feed dries up in the Spring on the lower range. The upper ranges are covered with snow usually until April or May, and when this disappears the most luxuriant feed springs forth, and keeps green all Summer. Here is where the dairy product is chiefly produced, most of which finds a ready and profitable market close at hand, in the State of Nevada, which draws upon California for most of its supplies. With judicious management, small dairies could be made profitable, in connection with general farming, in the foot hills, without removing the stock. We believe that the Eastern method of dairying could be adopted here to good advantage, and that even better profits could be realized here, with the same labor, than in any of the Mississippi Valley States.

The country about Placerville—about the dividing line of snow and rain—and at about the same altitude throughout the county, seems to be especially adapted to fruit and vine growing, and both are produced in great abundance and variety, and universally acknowledged to be superior to that produced in any other part of the State, and command better prices in all the markets of the coast. The display of fruit at the last county Fair was a wonder to behold, and was, perhaps, never excelled at any exhibition anywhere. It was the pride of all residents of the county, and the wonder and admiration of strangers. This is a business that it is impossible to overdo, especially where choice fruits are made a specialty, as there is really no limit to the demand for it, either in a green, dried or preserved state. There is, as yet, but one canning and drying factory in successful operation in the county, and that is located in Placerville. This establishment has made for itself a wide reputation for the excellence of its productions, and, had it the capacity, could easily dispose of ten times the fruit that it is capable of putting up, at remunerative prices. During the past season this establishment has worked up in the neighborhood of 500 tons of green fruit.

The roughness of some of the country in this principal fruit-growing section, and where all kinds of cereals and root crops are also extensively grown, must look quite uninviting to a man just from Illinois or Iowa, but there is very little of it that cannot be made more productive, acre for acre, than any land in either of those States, and can be converted into pleasant, profitable and beautiful homes by men enured to toil. Upon even the rougher hills an industrious, economical family can soon create a comfortable home by tilling a few acres and raising turkeys and chickens, which are always in demand at good prices.

In the vicinity of Placerville, the mining interest is still the chief dependence, but is being rapidly overshadowed by that of agriculture, to the manifest benefit of the whole county. We have throughout the county a number of good-paying mines, with a large number in course of development, the prospects being highly encouraging for their future yield of gold, while considerable placer or surface mining is still engaged in, mostly by Chinamen, and ranchers who have leisure for such occupations during the rainy season. Our mines are very desirable, but without agriculture and manufactures, they create little permanent wealth where located in any country; while with these elements combined, this ought to, and must soon, become one of the most prosperous counties in the State. The miner exchanges his gold for the products of the farmer and manufacturer, thus making a good home market for them to a great extent, while at the same time the money is retained at home and reinvested in permanent improvements or other taxable property.

This is one of the most inviting fields for the industrious, frugal emigrant, with moderate means, to be found in the State, or on the Pacific Coast. Land is yet cheap, though constantly increasing in value, and there is much that may be had by pre-emption or homestead, while the climate is as healthful, and in every way as desirable, as that of the most favored lands in either the new or old world. Partly improved lands, in localities easy of access, and near a public school, can be bought for from $6 to $12 per acre, and unimproved lands at from $2 50 to $5 per acre, and occasionally a nice place, containing from 25 to 160 acres, can be had for less than the cost of improvements. There are numerous tracts occupied by men who have mistaken their calling, having neither a knowledge or taste for farming, and many of these would be glad to sell at a sacrifice, in order to enable them to enter some pursuit more congenial to their natures, and it would be a blessing to the county to have skilled and industrious men take their places.

The Sacramento Valley Railroad now runs to within eleven miles of Placerville, its terminus being Shingle Springs, and will, almost beyond a doubt, be extended to Placerville during the next year, it being understood that the ties and iron for this extension have already been provided, and eventually continued on into the timber regions above, thus making shipping facilities more complete than at present.

The school system of the county is unsurpassed, and most especially is Placerville favored in this respect; it has a most excellent graded public school, employing four teachers, and one of the best conducted academies in the State. Its church facilities are also most excellent, comprising Presbyterian, Methodist, Episcopalian and Catholic societies, with church edifices of a character that would do credit to any town of twice its population.

Though possessed of almost unlimited water power, but little manufacturing is carried on, being confined chiefly to lumber, though there are at Placerville a foundry and grist mill, both doing a good business.

The system of canals, to supply water for both mining and irrigation, is unsurpassed by that of any other county in the State.

There are a number of small towns throughout the county, in the vicinity of most any of which farming can be made remunerative, and the kind of immigration most desirable, and that which can do best for themselves, at present at least, is the farmer element.

TULARE COUNTY. [See also Page 187.]

By WILL H. FISHER,

Editor of the TULARE TIMES.

Tulare County is situated in the heart of the great San Joaquin Valley of California, a little south of the centre of the State. It is bounded on the north by Fresno County, on the south by Kern, east by Inyo and west by Fresno and Monterey, Monterey being the only county between Tulare and the Pacific Ocean. Tulare County contains 5,500 square miles of land, of which about 75,000 acres are under cultivation. The population is 22,000. About one-fifth of the county is mountainous, the Sierra Nevada Mountains being its eastern border. Tulare Lake, in the southwestern part of the county, is sixty miles long and thirty miles in width, at its widest place, and is shaped something like a pear. The remainder of the county is a fertile plain, and in those parts where a fair system of irrigation has been organized the crops are unfailing and are prolific to a remarkable degree. Wheat, barley, corn, potatoes and hay are the chief agricultural products, and of these immense quantities are annually harvested and shipped, even from the comparatively small acreage now tilled. The shipments of wheat last season were about 18,000,000 pounds, and of barley, about 5,000,000 pounds. Wool is grown very extensively, nearly 3,000,000 pounds being the annual product. Cattle and hogs are also extensively raised. The fruit product comprises all the semi-tropical fruits, with many of the varieties which pertain to the more temperate or tropical climates. The fig, lemon, lime, orange, pomegranate and grape flourish and yield abundantly. The pear and apple grow as large and plentiful as anywhere on the earth. Peaches do tolerably well, while all kinds of melons and garden vegetables grow in great strength and perfection. Flowers are wonderfully numerous and beautiful, and grow spontaneously. Alfalfa grows quickly and luxuriantly, and four crops a year may be harvested. The climate is of the most delightful character, except about three months in Summer, when the weather, for the most part, is uncomfortably warm, and yet not warmer than in the Gulf States. The mean temperature is 55 to 80 degrees. The mountain resorts, only forty or fifty miles from the centre of the county, afford, during the Summer, delightful escapes from the heat, as well as most pleasing recreation. Land in Tulare County is cheap, the average assessed value being about $3 per acre, and in the foothills, the pleasantest part of the county, the year round, there are thousands of acres of rich soil waiting for the sower and the reaper.

The gold and silver mines of the county are beginning to attract much attention, especially those of the Mineral King District, in the northwestern part of the county. Within the last six months immense deposits of rich silver-bearing ore have been discovered, and it is expected that when the weather opens in the mountains, large mining enterprises will be set on foot in that region. Indeed, mining operations have already begun on an extensive scale in the district, and arrangements have been made for the shipment of stamp mills early in the Spring. The people of Tulare have full faith that the development of these mines will be of exceeding advantage to the county in increasing its business within the present year. Gold mines on White and Tule rivers, in this county, are also being developed to the great satisfaction of their owners and all interested parties.

Tulare County contains a grove of big trees, which far surpasses in size those of other more celebrated groves in the State. More celebrated because easier of access, and because they have been, therefore, more frequently visited. This grove is on King's River, near Wagy's mills.

There are several live and growing towns in this county which are destined to be important places of traffic, as each one of them is surrounded by a fair agricultural region, and many of them have good railroad advantages.

Visalia, the county seat, is a thriving place of about 3,000 inhabitants, situated near the centre of the county, in an exceedingly fertile region, and is the terminus of a branch railroad which connects with the Central Pacific Railroad at Goshen, seven miles west. This branch road during the first eleven months of the year 1878 transported from Visalia the total number of pounds of each product mentioned as follows: Hogs, 2,800,000; cattle, 1,600,000; flour, 599,500; wood, 1,620,000; potatoes, 60,000; sheep, 620,000; brick, 21,600; wool, 360,000; lime, 40,0 0; mules, 24,000; lumber, 66,480; wheat, 3,813,500; barley, 978,600; merchandise, 998,843. The receipts at Visalia, in pounds, during the same time, by the same road, were as follows: Wheat, 914,598; coal oil, 63,075; salt, 60,215; lumber, 226,650; machinery, 129,050; ice, 291,950; merchandise, 3,014,971.

Visalia has a stable bank, two weekly newspapers—the *Delta* and *Times*—a flouring mill of the capacity of 100 barrels per day, water works, an efficient fire company with hand engine, Lodges of Free Masons, Odd Fellows, and Good Templars, a Lyceum for literary, musical and dramatic culture and development, six churches, a large and well-conducted public school, with several private schools and a Normal Academy. The town has many handsome public and private buildings, among them a Court House which was erected at a cost of $75,000. The people possess more than the average of cultivation for California towns, and are correspondingly public-minded and enterprising, and the place is growing rapidly.

Tulare City is situated at the southern terminus of the Central Pacific and the northern terminus of the Southern Pacific Railroads, in California; is twelve miles south of Visalia; has a population of about 900, and is the seat of the Southern Pacific Railroad shops for this division. It is also surrounded by a fine agricultural district. Hanford and Lemore are growing towns on another branch railroad running west from Goshen to Huron, through that part of Tulare County known as the Mussel Slough District. Hanford is about twelve miles from Goshen, and Lemore seven miles further on. Both are important depots for the shipment of agricultural products. Porterville, Farmersville and Plano are hamlets east of Visalia, containing a few stores each, and the necessary adjuncts of country villages. Tulare County has numerous sawmills, but not near enough to make any impression upon the vast forests of pine and redwood which the county contains. The Central Pacific Railroad traverses the county from North to South, running across it in such a manner as to split it in two equal parts; this and the two branch roads mentioned which run East and West from near the centre of the county are the extent of its present railroad facilities; good wagon roads are numerous, however. Nearly one-half of the county has a perfect and unfailing system of irrigation, where short crops have been unknown since the irrigating arrangements have been made. From any part of the county, a long range of the Sierras, with snow-capped peaks, are visible, and in the verdant season of the year the plains are covered with a luxuriant growth of nutritious grass, which lasts all Winter; and in the springtime wild flowers in endless variety, and of the most beautiful hues, lend great beauty to every landscape. In short, Tulare County is altogether a desirable country to live in. Its resources are great; its climate, for the most part, delightful, its products are of the best, its people hospitable and magnanimous, its scenery beautiful, its plains fertile, its mountains rich in timber, stone and precious metals. Delicious fruits, game and fish are abundant, and with the coming years, and the large increase of population they will bring, the prospects for its future are, to say the least, flattering.

SANTA CRUZ COUNTY.

By W. W. BROWNING.

Santa Cruz County, although one of the smallest counties in the State, is more celebrated for its manu actures than for its agricultural products, even though it embraces some of the richest land in the State, being the second in importance—San Francisco being first.

It is the second coast county south from San Francisco, San Mateo County lying between it and the city, and distant therefrom seventy miles by steamer—fare to Santa Cruz, $3; freight, from 50 cents to $1 50 per hundred pounds.

It comprises an area of 320,000 acres, of which 236,826 561-100 are on the Assessor's books as taxable property, outside of the towns. Present population, about 14,000. It is a narrow strip of land of some forty miles in extreme length from northwest to southeast, by some fifteen miles in extreme width from the bay of Monterey, on the north side of which it lays, to the summit of the Santa Cruz range of mountains that separates it from Santa Clara County on the north. San Benito and Monterey counties join it on the east.

Forty thousand acres are the richest bottom lands along the various streams (occupied principally as dairy farms), of which the principal are the Trancas, Waddle's, San Lorenzo, Soquel, Aptos, Valencia and Pajaro rivers. Fifty thousand acres of agricultural land that forms terraced plateaus, as the land rises from the Bay in benches, or steps as it were, back to the summit of the mountains. Loma Prieta, also called Mount Bache by first surveyors, lying northeast from the county seat, being a conspicuous land-mark, some eighteen or twenty miles distant, its highest point being about three thousand feet above the level of the sea. Snow is occasionally seen on its summit for a day or two in the rainy season.

The country is heavily timbered along the gulches and uplands, that sells readily from the stumpage at $3 and $3 50 per thousand. It contains one of the famous "big tree" resorts, that is noted in the historical reminiscences of the county as being the place where General Fremont pitched his camp in 1846-7, when engaged in the conquest of California from the Spanish-Mexican rule—his old tan vats, cut out of a giant sequoi, being yet well preserved. In them he tanned the hides of the Mission cattle, whose pasture ground was the plat now occupied by the county seat of Santa Cruz, where they roamed at will by the thousands. The old Mission Santa Cruz and town Branciforte, being one of the oldest established in the country, was also one of the wealthiest in flocks and herds, their pasture lands remaining green and fresh throughout the entire year. On the uplands, although the grasses wither in the Summer season, they lose none of their nutriment, and cattle thrive equally as well as on the fresh.

Some 20,500 acres are in cultivation, that averages of wheat, 27 bushels to the acre; barley, 38; corn, 48; potatoes, 3½ tons, and sugar beets, 9 tons; 215,000 acres of mountainous land produce fabulous growths of redwood, oak, fir, and the finest quality of all varieties of grapes. Through this mountainous region runs a thermal belt, within which frost is seldom seen, even in the coldest seasons. As a consequence of the mild climate within the limit mentioned, strawberries bloom and ripen in large quantities in the open air at all seasons of the year; orange trees wear a perpetual livery of golden fruit and blossoms, and the delicate almond dons its fragrant dress of blossoms in February, when other sections of the country are hibernating, waiting for the Spring.

The taxable property of the county aggregates $15,000,000, appearing on the Assessor's books only at $6,309,724. Tax levy for 1878-9, $136,281.

INTERNAL IMPROVEMENTS.

Two railroads have been built to the county seat. One, the S. P. C. R. R. narrow gauge, runs north through the Felton redwoods, and via San Jose to its terminus in Oakland, distance 80 miles, connecting at Alameda Point with boat for San Francisco, making the trip from Santa Cruz to the city in 4¼ hours. The other, S. C. R. R., also narrow gauge, runs east 22 miles, connecting at Pajaro with the S. P. R. R. broad gauge for San Francisco, Monterey, etc. The distance this way to the city is 121 miles, which is made by the express trains in 4 hours and the other passenger trains in 5¾ hours. A broad gauge road from a point in San Mateo county down through the redwoods, at some future day, will doubtless be built.

The San Lorenzo Flume, with a capacity for transporting 60,000,000 feet of lumber per season, connects the upper San Lorenzo mills and "tie" camps with the Felton Railroad, whence their productions are brought to tide water. There are five shipping points within the county limits; eleven saw mills, with a capacity of 36,000,000 feet of lumber annually; five lime kilns, employing, when running, over two hundred men, producing the finest quality of lime in the country, supplying seven-tenths of the demand therefor, and capable of unlimited extension; four large tanneries turn out immense quantities of leather; the California Powder Works, located one and a half miles above Santa Cruz, on the San Lorenzo River, with side track connecting with the Felton Railroad, manufactures 12,000 kegs of powder per month; a glue and chair factory are located within the county, as well as a fuse factory; also four large flour mills, all of which are constantly employed; also a large beet sugar manufactory, making the finest grade of white sugar.

There is ample room for other manufactures, such as a good paper mill, tons on tons of straw being annually burnt to get rid of it, while paper rags have no market and are thrown away. A woollen mill and cloth manufactory would also find a fair field, as also wood-turning—possessing some of the finest grained woods in the world for cabinet or veneered work. The raisin and wine culture has grown to be a large industry, while there are a few large ranches yet unoccupied in the foothills, the owners of which would be glad to dispose of in small farms, or lease at a nominal rental. Value of land from $10 to $300 per acre. The titles to land throughout the county have been generally settled, so there is not so much chance for endless litigation as in other parts of the State.

TOWNS AND HEALTH RESORTS.

The county seat, Santa Cruz, stands first and foremost, having a population of some 5,500 of as intelligent and enterprising people as any in the State, situated at the mouth of the San Lorenzo River. The business portion of the town lies in a basin completely shut in by the bluffs and surrounding hills, so as to be completely sheltered from the cold ocean breezes and the "Northers" that are so trying in other portions of the State, while the bluffs give ample space for those who like the invigorating breezes and magnificent panorama laid out before them. Here the tired denizens of the crowded city, or the fugitives from fever-stricken districts, can come and build their eyrie to enjoy our genial climate, or camp on the bluffs and bathe in the grand Pacific's bottle-green waters to their heart's content, while a Spaniard, Italian, or a Chinaman, will present you with the finest rock cod, salmon, herring, flounders, codfish, or any of the fancy frys so popular among the upper-tendom, if you are too listless to cast a line yourself. Highest average temperature throughout the year, 88°, lowest, 31° above zero. Santa Cruz has a municipal govern-

ment, fire department, and all the various secret and benevolent institutions of other places, graded schools and as fine school edifices as any other town in California. Supports three newspapers, the *Sentinel*, *Item* and *Courier*, all weekly. Within a radius of eight miles there are at least three

MINERAL SPRINGS,

Whose waters have secured a wide celebrity for their medicinal properties. One of them, the Aptos, iron and magnesia spring, being a specific for all bladder and kidney diseases, has a powerful cathartic and tonic effect combined, that makes it valuable where diaphoretic effects are required. The others are magnetic in their properties, and tonic principally. The attractions for health and pleasure-seekers in Santa Cruz and vicinity are unequalled in any other part of the world. Its chaotic gorges, lovely valleys, towering gigantic redwood redolent of resinous balsams, and the fragrant world renowned bay tree, whose leaves constantly distill their camphorated aromatic fragrance, stretches of voluptuous landscape that invites one to repose, sand and pebbly beaches on which the swelling surf chants its perpetual and mighty refrain, incomparable picnic groves furnish the tourist continual pleasure and amusement, while interesting historic legends fill each vacant hour with unflagging interest. The bathing season lasts from May 1st to September; but did our Eastern tourists who lie away to the everglades of Florida and West Indies but know of the unrivalled magnificence of our Winter climate, would turn their steps hitherward and avoid the miasma of the Southern clime. Value of city lots from $10 to $1,500.

Watsonville, the next larger town of the county, is situated on the Pajaro River, at the junction of the Corrallitos, five miles from the bay, in the heart of the agricultural section of the county, east. It has a population of some 2,500, is a lovely, level, enterprising town, having two weekly newspapers, the *Pajaronian* and *Transcript*, a full Board of municipal officers, fire department, etc., with churches, secret and benevolent societies, and junction of the Santa Cruz Railroad with the Southern Pacific Railroad, that, during the bathing season, run extra trains to and from San Francisco daily. Value of town lots, same as Santa Cruz, nearly.

Soquel and Aptos each have their admirers as bathing and health resorts, being provided with facilities therefor, and a magnificent stretch of sandy beach for either walking or driving. Value of lots, $10 to $250.

Felton, on the San Lorenzo River, seven miles north of Santa Cruz, is the central point and depot of the extensive lime works in its immediate vicinity, and is an important and valuable station on the Southern Pacific Coast Railroad. This road traverses six tunnels in a distance of twelve miles from the Syanta Creek to the Los Gatos, in Santa Clara County. Tunnels Nos. 3 and 4 are together over twelve thousand feet in length, and are splendid specimens of engineering ability.

Felton has free water. A magnificent mountain spring has been generously donated to the town, on condition that they erect and maintain their own reservoir and mains. It is also the terminus of the San Lorenzo Flume, that brings down the lumber from the mills above. Value of town lots from $5 to $300.

Lorenzo, some eight miles above Felton, near the summit of the mountains and the head waters of the river, is a delightful mountain town and great Summer resort; hundreds of camps being established amid the redwoods, whose white tents present a picturesque and weird aspect amid the balsamic evergreens, while the jocund laugh and merry prattle of lovely women and happy childhood mingles with the music of the dancing rills, transforming the mountain solitude into a very Eden of happiness and enjoyment.

Turn then, ye anchorites, who are soured by the follies and vexations of life, the uncertainty and exasperation of stocks; lay your cares aside and recuperate in our genial clime. Santa Cruz County presents more inducements to eastern and foreign manufacturers to locate within its limits than any other part of the West, with its cheap lumber, cheap fuel, unlimited water-power running to waste, cheap and convenient transportation, and proximity to the markets of the coast.

LOS ANGELES COUNTY.

By RICHARD MELROSE,

Editor of the Anaheim Gazette.

Anaheim, February 6.—Ten years ago Southern California was a *terra incognita* to all, other than residents of the Pacific Coast, and the writer has met many persons of more than ordinary intelligence who frankly confessed that, previous to their coming here, Southern and Lower California had been to them synonymous terms, and that they had pictured to us an American Sahara, devoid of all agricultural possibilities. And notwithstanding the avalanche of newspaper correspondence, pamphlets, etc., which have been showered upon the Eastern people the past few years, descriptive of this part of the State, there are yet many who have but a faint perception of the true situation of this country, and are still athirst for every item of information written concerning it.

The southern portion of Los Angeles County, which I shall attempt to describe as fully as possible in the space allotted to me, contains an area of about six thousand square miles. In the Legislature of 1869-70, a bill was introduced to create the County of Orange out of this area. It passed the Assembly but was defeated in the Senate, and although nearly every subsequent Legislature has been importuned on the subject, the bill has never succeeded in getting beyond the Committee to whom it was referred. The matter will probably be dropped for some years, but that there must be a segregation of this county in the future there is no room for doubt.

A comparison between the present condition of things in this section, and the state of affairs ten years ago, presents a record of wonderful growth and progress. In 1869 the population in the area of which we write was 4,000; now it is 11,000. There were then four school districts and 800 census children; now there are twenty-two school districts and 2,215 census children. Then, the trade of almost this entire section centred in Anaheim. Now, there are half a dozen flourishing towns, each indispensable to the communities surrounding them. Then, one could ride on the plains for hours without descrying a human habitation, or seeing aught but vast herds of semi-wild cattle. Now, these herds have disappeared, the rich soil pays tribute to the husbandman, and substantial, cosey homes dot the plains. In this area there are five millions of taxable property—one-third of the entire county. And when it is

considered that there is very little waste land in this section—that nearly the entire area is susceptible of cultivation—one can get an idea of the greatness awaiting us in futurity, when the plains are peopled by a thrifty and industrious class of immigrants.

The colony of Anaheim is one of the most noted in the history of the State, and its founding and subsequent career are themes upon which a score or more of writers have exercised their pens. But it is a story which cannot too often be told, as it is a record of a successful struggle against adverse circumstances and discouraging obstacles, and contains many a useful lesson for future colonial experiments. There are bodies of land contiguous to Anaheim in every way suited for colonies, and it is not without the hope of encouraging a coöperative settlement of these lands that I briefly sketch the origin and progress of the colony of Anaheim.

In 1857 a number of German residents of San Francisco purchased a tract of 1,165 acres, twenty-seven miles southeast of Los Angeles, for which they paid $2 per acre. The tract was divided into fifty twenty-acre lots and fifty house lots, 140x181½ feet. A superintendent was engaged, and under his supervision eight acres of each lot was planted in vines, the lots were fenced with willow trees and an irrigating canal made from the Santa Ana River to the colony. While all this was being done, the stockholders pursued their usual avocations in San Francisco, and the distribution of the lots was not made until 1859. Each stockholder had at that time paid assessments to the amount of $1,400. The lots were viewed and assessed at prices varying from $1,840 to $475—the location, quality of soil and relative growth of vines determining the value of each particular lot. The average cost of the lots was $1,300.

It was, then, in 1859 that the first colonial experiment in the State was fairly inaugurated. "Campo Aleman" (German camp) it was called by the native population—an appellation it retains to the present day. After providing themselves with suitable residences, the first work of the colonists was to plant the balance of their lots in vines. About two acres surrounding their houses were planted in fruit trees and in garden truck and flowers.

A history of the trials and difficulties which beset the colonists in these pioneer days would make an interesting chapter by itself. The obstacles which they encountered and overcome will never present themselves to any colony which may be hereafter organized; and it is sufficient to note the results of these struggles against adverse circumstances. Nordhoff, in the chapter which he devotes to Anaheim in his book on California, sums up these results quite fully and truthfully. He says in substance: Only one of the original settlers has moved away; the property which cost $1,300 is now worth from $5,000 to $10,000; there are no poor in Anaheim; there is little intemperance. And he might have added that all these pioneers—at least those who have remained on their vineyards and embarked in outside business—are possessed of a competence, and in some instances may be classed as wealthy.

The wine product of Anaheim, in 1872, was 800,000 gallons, and it is estimated that in a good season the yield will fall little short of one million gallons. There are vineyards here which have produced over one thousand gallons per acre, although I suppose that five hundred gallons per acre would be a big average. Under the stimulus of an increased and presumedly permanent demand for California wines, the area devoted to vines is being increased steadily.

Anaheim wine has long been favorably known, not only in this State but in the East. The grapes grown here are incomparable for the manufacture of sweet wines and brandy, and a leading vineyardist informs me that the gravelly lands of Orange, six miles from here, produce a grape from which a dry wine has been made superior to any he had ever seen in Napa or Sonoma Counties.

Anaheim is an incorporated town and a thriving business centre. The by-streets, bordered with willow and sycamore, form, according to one writer, "green lanes that cannot be excelled even in Merry England, for picturesque and rural beauty." There are numerous substantial brick buildings in the business quarter, two large hotels, planing and grist mills, tannery, two banks, a sanatorium, of which a distinguished English physician is proprietor, and in fact every business is well represented. The public buildings comprise a school house, completed last month at a cost of $10,000; an Odd Fellows' Hall, costing $9,000; a Masonic Hall, costing $4,000; and an Episcopal and a Presbyterian Church, which cost respectively $3,600 and $3,500. The railroad buildings at the depot are the largest in the county, excepting, of course, those at the county seat, and an immense amount of exports and imports are handled there, notwithstanding that the bulk of the grain is shipped via Anaheim Landing, a roadstead twelve miles from town, operated by an incorporation known as the Anaheim Lighter Company.

In the Spring of 1868, a company of San Francisco capitalists purchased 200,000 acres of land, known as the Stearns Ranchos—140,000 acres in Los Angeles County and 60,000 acres in San Bernardino County—for which they paid $1 50 per acre. It is on the principal of these ranchos—the San Juan Cajon de Santa Ana—that Anaheim is located. Previous to their purchase by the company, these lands were used solely for grazing purposes, and, as before remarked, vast herds of semi-wild cattle roamed over them undisturbed. In 1869 the company began selling the land in small farms, and there now remain in their possession only 80,000 acres in this county, and 50,000 acres in San Bernardino County.

I venture to say that there is not another tract of land in the world that can compare with this in agricultural possibilities. On the greater portion of it grain can be grown and fruit raised in almost entire independence of the season. The great Cajon Ditch, which was completed a few months ago, at a cost of about $50,000, can distribute the waters of the Santa Ana River over 10,000 acres of fertile land in this immediate neighborhood. Artesian wells furnish an inexhaustible and inexpensive supply of water for irrigation. In short, I do not believe that there is any other section in the whole State in which a man of moderate means and abundant energy can do as well, or get himself as comfortable and cosey a home in a few years. It is really astonishing to see what a few years of well-directed energy will accomplish in this wonderful country. There are places here in which are orange trees bending beneath the weight of the golden fruit, bearing vines and every variety of northern fruit trees, tall evergreen trees and shrubs, and myriads of flowers—all growing on land which, five years ago, was barren plain, and as devoid of vegetation as a barn floor. It would take fifteen years of unremitting toil to accomplish in the older States what can be done here in five, in the way of surrounding one's home with trees and flowers.

For the cultivation of the orange, lemon and lime the land about here is unsurpassed. There are many young orchards here of exceeding thrift, showing the adaptability of the soil for the growth of semi-tropical fruits. Not only that, but this is one of the few places in the county where the heavy frosts of January did not injure the young orange trees; the shelter given by a range of low hills east of here is the cause of our immunity from the unwelcome visitation.

All kinds of Northern and semi-tropical fruit do well here. The agricultural products are: Corn, barley, rye, potatoes, beans, onions, hops, flax, castor beans, etc. Oats are raised to some extent, and wheat also. Odessa wheat is receiving an extensive trial this year, and it is believed that it will successfully withstand the "rust," which has heretofore made wheat growing a risky experiment.

The price of good farming land in this valley varies from $25 to $100 per acre, according to location. There are many thousands of acres which can be purchased at the first-named figure, upon which can be grown any of the crops mentioned in the preceding paragraph. On a great deal of this land artesian wells can be had at a depth of from 100 to 200 feet.

The other towns in the southern portion of the county are Westminster, Garden Grove, Santa Ana, Tustin City, Orange, San Juan Capistrano

and Norwalk. Westminster is six miles west of Anaheim, and is one of the most thrifty and desirable places in the county. It was started as a Presbyterian Temperance Colony in 1870 by Rev. L. P. Webber (since deceased), and its success is another strong argument in favor of the colony system. It still retains its temperance features, but is no longer exclusively Presbyterian. There are three fine church edifices—Presbyterian, Congregational and Methodist. A more orderly, law-abiding, sociable and intelligent community does not exist, and their prosperity is as much due to their industry as to the advantage of location. Westminster is especially noted for the number and volume of its artesian wells, of which there are nearly 400 in the colony. There is scarcely a farm on which there are not one or more of these wells spouting forth their saving waters. In the dryest years, the farmer who has an artesian well on his place can raise a good crop, as a well of ordinary volume can be made to irrigate forty acres.

Much attention has been paid in Westminster to the raising of Northern fruits, and it is generally conceded that they will take the palm in this respect. At the last exhibition of the Southern California Horticultural Society, the display of apples from Westminster took the first premium, although the competition was brisk and embraced displays from San Buenaventura and other counties. There are as yet but few bearing trees in the colony, but in a couple of years there will be a large amount for export.

Garden Grove is about three miles from Westminster, and is surrounded by land that produces immense crops of corn. It is also in the artesian belt, and there are a great number of flowing wells. Its population is analogous to that of Westminster, being steady, temperate, industrious and prosperous. A handsome church building has just been completed, and, something remarkable, it is all paid for.

Santa Ana is seven miles southeast of Anaheim, and is the terminus of the San Diego branch of the Southern Pacific Railroad. It is the centre of as rich an agricultural country as there is on the face of the globe, and it is an undisputed fact that its prospects for some day becoming an interior city of great commercial importance are assured. It already enjoys the trade of a thickly-settled country, but, as in nearly all other California towns, the business is divided up among a plethora of merchants. The famous corn-producing section, Gospel Swamp, is only a few miles from Santa Ana. That is the place where from 80 to 120 bushels of corn is raised to the acre, and a Swamper who tells you that he has raised a pumpkin which weighed 500 pounds is not required to make an affidavit in support of his statement. Such instances are by no means rare.

Tustin City is two miles east from Santa Ana, and is a charming place. It is thickly settled, and there are numerous young orange plantations scattered about. The land is much the same as at Santa Ana, being rich, easily worked and very prolific. Tustin's latest achievement was the production of a sweet potato which weighed twenty-two pounds.

Just beyond Tustin City lies the famous San Joaquin Rancho, on whose broad acres are pastured thousands of sheep. The rancho has a large amount of valuable farming land, which will find a ready sale when the owners see fit to place it on the market.

Orange is very aptly named. Orange groves cluster thickly all around the settlement, and the trees grow with surprising thrift and vigor. Many of the orchards are bearing for the first time this year, and it is estimated 50,000 oranges will be shipped this season. In a year or two the production will be immense. Raisins of a very superior quality are also made here; indeed, the soil is adapted in a high degree to the culture of grapes. Wine-making is not carried on to any extent, most of the grapes grown being of a variety adapted for raisins. Besides, it is a temperance settlement, and the attempt to establish a saloon there some years ago was resisted so vigorously that there is little danger of a renewal of the attempt.

San Juan Capistrano, thirty-three miles from South of Anaheim, is famous chiefly for its possession of a picturesque old Mission, built in 1776, and partially destroyed by an earthquake in 1812. There is some very good farming and grazing land in the vicinity of the town.

There is one thing in which the people of this section feel a great pride, and that is the salubrity and healthfulness of the climate. In fact, Anaheim is known far and wide as a health resort second to none on the coast. The first writer to bring it into notice in this respect was Charles Nordhoff, who devoted several pages of his book to giving thermometrical comparisons between Anaheim and other noted health resorts in this country and in Europe. That consumptive and asthmatic persons find this climate highly beneficial is attested by the fact that there are a large number of residents here, who came to this country a few years ago suffering from the ailments alluded to, who are now strong and hearty men and women.

One very peculiar feature of this county is that there are half a dozen different climates within its borders, each beneficial to some class of complaint. For instance, there are some persons with asthmatic or consumptive tendencies who find the climate of Westminster best suited to them; others, again, find that the dryer climate of Anaheim gives them the needed relief; while others prefer the still dryer atmosphere of the mountains east of Anaheim, and so on.

I give below the average temperature of Anaheim, as recorded by a self-registering thermometer:

	1877.	1878.		1877.	1878.
January	61⅞	51⅜	July	72½	67¼
February	56	62⅛	August	70½	69
March	58	54	September	69	65¼
April	57¼	56	October	63	61⅞
May	61⅜	60⅛	November	59⅛	56
June	70	64	December	54½	50¾

I must briefly allude to the mining interest which last year sprung into existence in the mountains, twenty-three miles east of Anaheim. During last Summer, about 800 locations were recorded; several mining districts were established, and there is a well-grounded belief here among miners of experience that the coming Summer will witness developments beyond the expectations of the most sanguine. The discoveries are mostly silver ledges, but there are also gold and tin mines of great promise.

The celebrated Black Star coal mine is twelve miles east of Anaheim. The coal from this mine is in use all over the county, and is rapidly superseding imported coal. It is sold in Anaheim at $8 per ton. A large force of men are constantly employed, and the Directors are men of capital and enterprise.

The bee-keeping business is an industry which has of late years attracted a great many people. The cañons are crowded with bee ranches, and the honey yield is immense. Notwithstanding the very low price at which honey has stood for some time, the business is reasonably profitable, as the natural advantages of the country do away with the necessity of any great expense.

In concluding my letter, it must not be supposed that I have done aught but touch briefly upon facts mostly sought after by those who contemplate a removal to this part of the State. It would take several columns of THE CALL to treat this section and its industries with the fullness the subject warrants.

NEVADA COUNTY.

By LEONARD S. CALKINS,
Editor of the NEVADA DAILY TRANSCRIPT.

Nevada County is bounded on the north by Yuba and Sierra, east by the State of Nevada, south and east by Placer, and west by Yuba. Its area is 1,026 miles, or about the size of the State of Rhode Island. There are few parts of the world that can compare with it for variety of scenery or climate. While some portions of it have an elevation of 8,000 feet, and are covered with snow the greater portion of the year, the lower districts are scarcely above the ocean's level, and are seldom visited with snow-storms or frosts. A number of clearly-defined channels extend lengthwise of the county, and along their beds proceed the streams that find head in the Sierras. They are crossed by several high ridges at intervals, the main ones running at right angles with the mountain chain that extends along the eastern boundary. Of course there could not exist in a section like this, which is so diversified by cañons, and mountains, and streams, any extensive valleys of arable land. Only a few hundred acres here and there are found. The entire soil is of a reddish ferruginous ochre, or gray color, and consists of side-hill or table land. All of this land is highly productive when properly tilled, however. The sheltered depressions, especially, hold forth strong attractions to the husbandman. All the productions of the temperate zone can be grown; the grape and fig are found in a state bordering on perfection; other fruit, such as apples, pears, peaches, plums, nectarines, etc., attains a size and flavor that the products of but few other sections equal. But little attention has been paid to farming in Nevada County. Since its organization in 1851, the prime industry has been that of mining. The attention of the population has been directed to extracting gold from the hillsides and ravines, and still there is every reason to believe that the deposits have been but partially worked out. When the

GRAVEL MINES

Were first discovered in 1849, and for a number of years thereafter, their working was an easy and simple process. Men in a few weeks were known to return to the Eastern States carrying from ten to fifty, and an occasional one as high as 150 pounds of gold dust each. The discovery of the ancient river bed near Nevada City, opened a new class of mines that required a larger outlay and more risk to work than the river or ravine claims that engaged the attention of the pioneers. The ridge between the Middle and South Yubas is distinguished for its vast and almost continuous lines of gravel hills extending from the summit to the foothills near Smartsville. The deposit of gravel is from 100 to 300 feet in depth, and heavy expense is entailed in developing its riches. Among the most extensive companies engaged in gravel mining are the following, whose respective properties are assessed at the sums set forth: Milton Company, $374,400; North Bloomfield Company, $312,000; Blue Tent Company, $60,400; Omega Company, $55,000; Birdseye Creek Company, $36,695; and besides these are scores of other incorporations and private enterprises, calling into requisition an immense amount of capital and energy in the aggregate. Last year the Milton Company took from its claim, above the expense of working, the sum of $306,961. Nine dividends, amounting to $21 50 per share, were paid during the season. The gross amount of gold produced by this company was $537,760, leaving the expense of working $230,799. Special reference is made to this case for the purpose of showing the immense profits to be derived from gravel mining in Nevada County where an adequate amount of capital is employed. The scores of other hydraulic claims pay about in the same proportion as the Milton.

The Derbec mine, near North Bloomfield, is the leading claim in the county where the drifting process is employed. Although the machinery has been running but a few months, eleven shipments of gold have been made to the San Francisco office, and it is confidently expected that before long the company will commence paying dividends. Mons. E. Derbec, the President, and Superintendent Mein, devoted their closest personal attention to the working of the property, and this whole section is watching their course with the keenest interest. If they succeed (and there is no doubt but they will) in developing the North Bloomfield channel profitably at that point, millions of dollars will be added to the county's wealth. The Watt, a prospecting mine that has good prospects, situated but a short distance from the Derbec, is now engaged in trying to find the pay channel, with a good chance of attaining that end.

Another important gravel mining district, with indications of being as rich as any in Nevada County, is being opened in Washington Township. It is believed that within a year that section will be agog with miners at work. Mons. Derbec is at the head of the enterprise, and it has been fairly established that he is thoroughly conversant with this class of mining. The running of a tunnel has already been commenced on one of the claims, and their development at an early day is likely.

Still another new gravel mining district is being opened up at Round Mountain, a short distance from Nevada City. One company has been working there for some time, and has recently struck a large channel of such superior richness as to warrant the district's success.

It was some two years after the discovery of gold in this county that

QUARTZ MINING

Came in for a share of attention, and several years more elapsed before there was any extensive prospecting done in that direction. In 1851 the first excitement regarding quartz became manifest. A number of mills were erected at Nevada City and Grass Valley, but inside of two years, owing to a lack of knowledge of proper amalgamating processes, the most of them were declared failures. The industry received a check from which it was several years in recovering. Gradually confidence was restored, and new mines were opened at both towns. Grass Valley took the lead, and to-day is entitled to being reckoned the best quartz district in the State. The permanency as well as profitableness of its lodes, like those of Nevada City district, have been established for years. The latter town depends to a great extent on the placer mines surrounding it. The Meadow Lake district, which has stood in bad repute for a number of years, on account of the refractory nature of the ores found there, is again looming up. The attention of capitalists and scientists has been called to it recently, and it is now being practically demonstrated that the rock can be profitably worked. There are scattered all through the county quartz mines that yield steady incomes to their owners, and new strikes of a satisfactory nature are being made daily. The Idaho mine, in Grass Valley District, under the honest and efficient management of John C. and Edward Coleman, is worthy of special mention, as it is the leading quartz mine in the county. The property has just paid its 114th regular monthly dividend of $7 50 per share, aggregating $23,250. The entire amount of dividends declared is $2,650,000, out of a total yield of $5,302,204. Nevada City districts quartz mining outlook has not been so

bright as now in fifteen or twenty years, and in the course of a few months several more important enterprises will be in successful operation.

The fact is, that mining of all kinds in Nevada County has assumed the character of a legitimate enterprise. Like any other business, capital, pluck and sound common sense are requisite to success in this line, the same as in any other.

The system of

CANALS AND DITCHES

Upon which both the mining and farming population depend for the water necessary to develop or cultivate their respective operations, is something worthy of more attention than can be given any one topic in a general article like this. There are in Nevada County six wealthy corporations engaged in this branch of business, viz: The Eureka Lake and Yuba Canal Company, Consolidated; the South Yuba Canal Company; and the following who are extensive mine owners as well as proprietors of ditches: Milton Water and Mining Company, North Bloomfield W. and M. Co., Blue Tent W. and M. Co., and the Omega W. and M. Co. The first two companies devote their attention entirely to the supplying of water, while the others are in addition conducting mines of their own. The Eureka Lake and S. Y. Canal Co., Consolidated, is acting under a charter granted by the State of New York in 1865. Its main canal extends from some small lake near the summit of the Sierras to San Juan, a distance of sixty-five miles or so. Besides this main ditch there is a network of smaller ones, aggregating many miles in length, owned by the same corporation. The South Yuba Canal Company's line of ditches is one of the most extensive in this State. The feeders of the main ditch, which has a capacity of 7,500 miners' inches, consist of seven lakes located near Cisco. This company distributes water to some parts of Placer County, over that region in Nevada County that lies between the South Yuba and Bear rivers, and as far down the western slope of the Sierras as Grass Valley. During the Winter 10,000 miners' inches are distributed through its ditches, the aggregate length of which is 139 miles. Perhaps a clearer idea of the magnitude of the South Yuba Canal Company's operations can be realized from this simple comparison. The daily supply is 10,000 inches. An inch is 2,250 cubic feet in twenty-four hours, or the entire amount, 22,300,000 cubic feet in twenty-four hours; or at 7.05 gallons to the cubic foot, it gives 167,250,000 gallons. Assuming the capacity of the Spring Valley Water Works to be 12,000,000 gallons in twenty-four hours, it gives nearly fourteen times the quantity sold by that Company. The above represents about one-third of the ditches in Nevada County.

After the exhaustion of the shallow placers, in 1851-2, it was conceded that some new system must be introduced, and it was about 1853 that the hydraulic process came into use, necessitating the procural of more water than could be obtained from the small streams that were dry in Summer. Then commenced construction of the present system of ditches. The large rivers supplied water until late in the Summer, but mining by the hydraulic process had become so expensive that it could not be prosecuted with profit unless the season could be extended. This necessity led to the construction of large reservoirs in which the water could be stored during the Winter months. One of the first was Faucherie, or French Lake, the property of the Eureka Lake Co. Next, the English Lake, about four miles northeast; then Meadow Lake; and later, Fordyce and Bowman. These are the finest specimens in the county. They vary from sixty to ninety feet in height, and flow from 350 to 600 acres.

Federal and State legislation has generally been favorable to this industry, recognizing the fact that by no other means could the gold be extracted from the deep deposits, and well knowing from the exceptional character of the industry that every encouragement must be offered by the capitalist to induce the investment.

The business is one requiring extraordinary powers of endurance from the various companies' employés. Generally from December until May the snow is deep in the upper country, the only means of locomotion being the snow-shoe. For months at a time every familiar landmark is obliterated, and the great lines of ditches require constant attention. The safety of the property depends entirely upon the fidelity of the employés.

THE LUMBER TRADE

Of the county is an extensive one, and involves the use of an immense amount of capital in its prosecution. The timber consists of pine, fir, spruce and cedar, the latter being considered the most durable when placed in contact with the ground. Of the pine there are two varieties, the most valuable for commerce being the sugar pine, which, in the upper part of the county, grows to a very large size. The common yellow pine grows in nearly every part of the county. The V Flume Lumber Company, whose mill is about twelve miles from Nevada City, with a heavy timbered section surrounding it, is the leading one in the lower part of the county. The company has a capacity for producing 5,000,000 feet of lumber a year. Water power is relied on for doing all of the labor. The saw-mill is run by a mammoth hurdy wheel, the logs are transported from the dam to the mill by the same power, and the boards are finally carried in a flume from the mill to the main yard, just on the outskirts of Nevada City. Messrs. L. and D. Marsh, whose headquarters are at Nevada City, are likewise extensively engaged in the manufacture and sale of lumber. In the neighborhood of Truckee, however, lies the principal lumber section of the county, and one of the most extensive in the State. Many years will elapse before the supply of building material in the forests there will be exhausted. At the mill of Towle Brós. the logs are hauled from Bear River to the mill by a narrow-gauge train of cars, making the cost something less than $5 per M.. This company cuts from 12,000,000 to 14,000,000 feet per year, their market being from Sacramento to Ogden—shipment being made at Alta, three miles east of Dutch Flat, on the C. P. R. R. About fifty men are employed during the lumbering season, which extends from May until November.

One of the most important lumber camps is that of Louis Voss, situated about fifteen miles northeast of Nevada City. His production, which is sugar-pine of fine quality, finds its market entirely in San Francisco. It is shipped by teams to a point on the Nevada County Narrow-gauge Railroad, six miles from Colfax, and at the latter place is reshipped on the Central Pacific Railroad. The first and second quality will leave a handsome profit above cost of transportation, although the quantity is limited. This system is wasteful, as the upper part of the tree is left in the woods to decay, the cost of transportation precluding its use for fuel.

Among the towns of Nevada County,

GRASS VALLEY

Is the largest, containing a population of some 7,000 people. It is situated in a valley 2,500 feet above the sea level. The narrow-gauge railroad connects it with Colfax, and the C. P. R. R., thirteen miles distant, and Nevada City, four miles northwest. It is perpaps the best quartz mining section in the State. The majority of the mines in its vicinity are paying ones, while substantial business blocks and residences and well-kept streets betoken the community's large measure of prosperity. The *Union* is published daily and the *Tidings* weekly.

NEVADA CITY,

The present terminus of the local railroad, is seventy miles distant from Sacramento, and is one of the handsomest towns in this part of the State. It is the county seat, although having a smaller population by several hundred than Grass Valley. It relies for support upon the rich gravel and quartz mines surrounding it. The climate is noted for its health-giving qualities, and the social character of the town is such as to induce a desirable population. The *Transcript* is published daily and the *Herald* tri-weekly. This town has sent out into the world many prominent men. Among them might be mentioned Gen. Oglesby,

Senator Sargent, ex-Senator Wm. M. Stewart, Gen. McCook, Chief Justice Hawley, Judge Niles of the Supreme Court, Gen. J. R. McConnell, and a host of others of like stamp, who have made their marks as public men.

TRUCKEE,

On the C. P. R. R., is a flourishing town, distant from Sacramento 120 miles. As stated before, it is in the centre of the principal lumber section of the county. Donner Lake, two miles away, is becoming a popular resort, as is also Lake Tahoe, fifteen miles from there. The *Republican* is published semi-weekly.

NORTH SAN JUAN

Is thirteen miles north of Nevada City, and has a population of 800 souls. It is a good town, both socially and commercially, and has bright prospects for the future, when the mining section in which it is located becomes more thoroughly developed. The *Independent* is published weekly.

North Bloomfield, Moore's Flat and a large number of other smaller towns are scattered here and there about the county.

MARIN COUNTY.

By W. I. CLARK.

The above-named county is north from San Francisco, from which it is separated by the Golden Gate, distant at the nearest point one and one-half miles. It takes its name from an Indian Chief, an opponent of the early Spaniards, and was first settled in 1824 by the establishment of the Mission San Rafael.

DESCRIPTION.

In shape, it is a parallelogram, northwest and southeast, about forty miles in length and twenty miles in width. The coast, both sea and bay, is indented by numerous lagunas and inlets, in some cases extending many miles inland, furnishing good water communication to the surrounding country. The most prominent are Tomales Bay, eighteen miles in length and one and one-half in width, Bolinas, Limantown, and Richardson's Bays, besides several inlets at the mouths of the creeks. The land around these bays is either well wooded or of great fertility, and capable of high cultivation; in many places, that which was tide land in '49 has been reclaimed, and produces large crops. The tide rises from five to seven feet, and at low tide the mud flats extend to deep water, leaving bare thousands of acres, which will eventually be reclaimed. At points, the channel approaches the shore, and these places are utilized as embarcaderos; at high water vessels drawing five feet can approach near the shore.

The county contains 330,000 acres, many being salt marsh; it is sixth on the State assessment roll, the value per acre being $4 44.

Though many of the farmers own their land in tracts containing from 160 to 2,000 or 3,000 acres, yet there are some who own large tracts, which they rent in "ranches," containing from 1,000 to 3,000 acres each. Among the most prominent of these great land-owners are J. McM. Shafter, 29,672 acres; estate of O. L. Shafter, 17,911 acres; C. W. Howard, 17,584 acres; S. W. Throckmorton, 16,740 acres; Black estate, about 37,000 acres; and Sweetser and De Long, about 15,000 acres. Some of these owners are endeavoring to dispose of their land to actual settlers, who would then add to the wealth of the county by taking an interest in improvements not generally manifested by renters.

The land is generally hilly, though not mountainous, Mount Tamalpais (2,800 feet) being the most elevated. The numerous creeks form valleys containing a large amount of arable land, utilized by the production of hay.

CLIMATE.

The fogs and moisture from the ocean, driven by the westerly winds, keep the grasses green for months after the easterly lands are dried and parched by the burning heats of Spring and Summer; the temperature is equable, and the scorching heats of the interior unknown. Nutritive grass grows on the summits of the highest hills, and before the advent of the Americans, the land was used for grazing for the great numbers of cattle and sheep owned by the San Rafael Mission.

RESOURCES—DAIRYING.

The principal occupation of the people is dairying, for which this county is better adapted than any other portion of the State; the fogs from the ocean, the low temperature in Summer, the absence of snow in the Winter, and the numerous localities where feed can be raised, all combined, give the dairymen of Marin an advantage which they fail not to appreciate. The county roads are kept in good repair. Two railroads extend through, and sea transportation is cheap. Grass grows on the summits of the hills; the valleys furnish abundance of Winter feed, and springs are plentiful and never-failing.

Soon after the "'49" excitement, those who noticed the advantageous situation, reaped an abundant harvest; cows were cheap, and butter high in price. These were halcyon days for butter-makers, many of whom, "making hay while the sun shone," amassed a competency, and buying land at a low figure, are now enjoying the fruits of their industry.

The usual practice is to rent the cows with the land, say one cow to eight acres, charging from $20 to $32 50 per cow each year, beginning in October; the former price is given in very hilly districts and the latter in the most favored localities; a fair average would be from $25 to $27 50. The tenant is required to raise a certain number of calves and a specified quantity of hay.

The raising of pigs is an important factor in the dairyman's calculation. They are fed altogether on skim milk, and bring from 5c. to 6½c. per pound at the ranch. Calves are not allowed to run with the cows, as it is said they are more gentle when brought up by hand.

There is a cheese factory at Tomales, the milk being supplied by the adjoining dairies, but a great many have their own vats and presses, making cheese when butter is low in price; others pickle their butter for the same reason.

The dairy season lasts from November till May, the height being in February and March; during the first part, butter sometimes commands 50c., but when great quantities are thrown on the market it falls to 20c. or 25c.

Point Reyes butter commands from one to two cents per pound more than any other; it is said that a peculiar flavor is imparted by the grass.

The principal shipping points are Petaluma, San Rafael, Bolinas, and the N. P. C. R. R.

A few dairymen supply hotels and groceries in the city, but the great majority consign their butter and cheese to commission houses, who charge five per cent and retain the money thirty days; these houses also advance money, charging one and one-half per cent for the use. This business has been very remunerative to the commission men. Wages to milkers are from $25 to $35 per month, and generally one man attends to twenty cows, making himself otherwise useful.

According to the Assessor's report there are in Marin County 24,291 cows, and 7,488 hogs.

FISH.

The bays and inlets have been very remunerative to fishermen, who, mostly Italians, have been so eager in the pursuit that fish have become scarce. In Tomales Bay there are nineteen boats, each manned by from two to four men. On the other bays there are many boats, all using nets. On the ocean coast the fishing is carried on outside the kelp and breakers with great success. In the Fall, just before the rains, salmon congre-

gate at the mouth of creeks, giving a harvest to the fishermen, who capture great numbers in violation of the law. The fish caught comprise black and white perch, halibut, cod, rockfish, salmon, sea trout, sardines, sea bass, etc. About 400 Chinese are engaged at Point San Pedro, California City and Angel Island, catching shrimp; their nets cover the flats.

The quohog, or hard-shell clam, is abundant in Tomales Bay; the soft-shell clam is more abundant in Richardson's and San Quentin Bays.

Three establishments for canning codfish are located on Reed Peninsula—Lynde & Hough, below California City; Israel Kashow, on Raccoon Strait, and one on Kashow Island. The codfish are brought from the Aleutian Islands and Ochotsk Sea in bulk, then cured for market. The genial climate of Marin seems suitable for that business. Kashow has from 300 to 700 tons every year, mostly from the firm of Bichard & Co., who dispatch a fleet to the north every Spring. The fishermen are found in everything, and are paid $25 per 1,000 for their catch.

BRICKS.

This business is not so good as in former days, the price having been so much reduced. The principal firms are the Patent Brick Company, at Point San Pedro, who make about 8,000,000; Remillard, who makes 6,000,000 or 7,000,000; Prenty & Biggins, at Ross Landing, 4,000,000 or 5,000,000; and Callot, 2,000,000, employing about 400 men. The Patent Brick Company employ Chinese, the others white men. With an increased demand the resources of Marin could supply all the cities of California. The brick kilns are located near the water, to be convenient for vessels to take them away.

POTATOES.

The soil and climate of Tomales is favorable to the growth of that esculent. Eighty sacks per acre is no uncommon yield, and Bodega, in the vicinity, has been noted for years. The soil is a light sandy loam, and the sea fogs promote the growth, while it would be injurious to cereals. Wheat and barley flourish farther east, in the Chileno Valley, but in the northwestern portion they are liable to rust and smut.

Peaches and grapes do not flourish, the late frosts being injurious. Sweetser and De Long have, in a sheltered place at Novato, one of the largest orchards in the State.

FOWLS.

Many of the little bays, nooks and lagunas, where there are springs of fresh water, are occupied as duck and chicken ranches; some have several thousand fowls, finding them very remunerative. Great care has to be exercised, as they are liable to disease.

MANUFACTORIES.

S. P. Taylor, on San Geronimo Creek, has a paper-mill, established in 1855. He runs it to its full capacity day and night.

OTHER INDUSTRIES.

Most of the magnificent redwood forests have disappeared and the saw-mills moved north. A new growth is progressing, which eventually will prove a source of wealth.

Many thousand cords of fire wood are cut annually, and the land devoted to pasture.

Several attempts at mining have been made, and flattering indications encouraged prospectors. A company at Nicasio Station has sunk a shaft, and find at one hundred feet depth ten dollars per ton. C. Murray, at Nicasio, run a tunnel and sunk a shaft on good indications for coal; he found petroleum gas and lignite.

The country rock is mostly sandstone, and the soil a sandy loam.

TOWNS.

San Rafael, the county seat, is a town of about 2,000 inhabitants, beautifully situated in a basin east from Tamalpais; it is fifteen miles from San Francisco, with which it is connected by a railroad of three miles, and ferry of twelve miles by way of San Quentin; fare round trip, 75 cents. In Winter four trips a day are made, and in Summer six or seven.

The climate is unequalled for health, and it is the resort for invalids, as well as business people of San Francisco, who desire to escape the winds and fogs prevalent there.

Two weekly papers are published, the *Marin County Journal* and the *San Rafael Herald*.

There is a large school of six classes and an attendance of 300 children; also several private and one Catholic school.

There are four churches, many hotels and boarding houses, and free library.

During the Summer many thousand people resort to the vicinity for picnics. Two railroads connect it with the upper country, the North Pacific Coast to Russian River, and the North Pacific to Petaluma. Is supplied with water from Lagunitas Springs seven miles distant, and the water conveyed to every house by pipes. A gas company furnishes illumination. The city is rapidly increasing, property having doubled in value in six years.

SAUCELITO

Is six miles from San Francisco, connected by ferry; making four trips per day; fare fifteen cents. It is built at the base and on the slope of steep hills, and struggles along Richardson's Bay for two miles. It is the principal depot of the Narrow Gauge Railroad, who have wharves built to deep water. It contains about 700 inhabitants, one church, several hotels, and good school; this place is also a great resort for picnic parties from San Francisco.

San Quentin is twelve miles from San Francisco, and derives its chief importance from it being the location of the State Prison and the embarcadero of San Rafael; one branch of the Narrow Gauge terminates here, and the company have a splendid wharf and buildings; population, exclusive of convicts, about 300.

Tomales, fifty-five miles from San Francisco, on the Narrow Gauge Railroad, is the centre of a farming country, and contains, with the district, about 400 inhabitants.

Bolinas, on a bay of the same name near the coast, communicates with San Francisco by sailing vessels, and stage to Saucelito; it is a thriving village, and is much visited in Summer by camping and fishing parties. It has four churches, two schools, and about 400 inhabitants.

Nicasio, Novato and Olema, are small towns in valleys of the same name, reached by rail and short staging, and are centres of dairy farms.

During the Spring months the hotels are crowded with visitors from the city, attracted by the salubrity of the climate and beauty of the scenery. The streams abound in fish, the hills with game, from quail to grizzly, though but few of the latter have been seen of late years.

SCHOOLS.

School facilities are excellent, there being schools for thirty-eight teachers. In many places in the country the people have not yet awoke from the old idea that quantity is better than quality; therefore cheap teachers are in demand. The people do not like to pay a little themselves, and they are content to eke out with the allowance from State and county.

LAND

Can be bought at all prices. A good dairy ranch, combining hill and flat land, might be bought for from $25 to $40 per acre; in places difficult of access, from $10 to $15. Farming land, $50 to $100, and the same of the land near towns.

RAILROADS,

There are two—the narrow-gauge from Saucelito and San Rafael to Russian River, on the coast, and the Donahue road to Petaluma, on the east side. These roads have brought people nearer to market, developed the resources of the county, and increased the value of land.

During the Spring and Summer the county is especially lively. Employment is abundant at wood-chopping, dairying and brick-making, and the woods and creeks teem with camping parties who desire the delights of country life unburdened with the discomforts of hotels. The bracing climate, cheap living and lovely scenery make Marin a paradise for pleasure seekers, workers, or for those who desire a permanent home.

LAKE COUNTY.

By R. W. CRUMP,
Editor of the Lake County Bee.

Lake County is bounded on the north by Mendocino and Colusa, south by Napa and Sonoma, east by Yolo and Colusa and west by Sierra and Mendocino Counties. Its southern extremity is about seventy or seventy-five miles from San Francisco, and nearly due north of that city. Its length north and south is seventy or seventy-five miles, and it is from ten to twenty-five miles in width, containing an area of 600,000 or 700,000 acres. Of this the greater part consists of mountains and foot-hills. It is estimated that the area of valley, or first-class agricultural land, is from 80,000 to 100,000 acres, though some claim that 125,000 acres is not too large an estimate. Thousands of acres of the foot-hills are not only finely adapted to the growth of fruits of all kinds, but with proper cultivation, produce fine crops of grain.

RESOURCES.

The resources of this county are mostly derived from the crops of wheat, barley, oats, corn and potatoes, from sheep and hogs, and from our pineries and quicksilver mines. All the valleys produce remunerative crops of grain, and some of them grow large crops of corn and potatoes. The average crop of wheat may not be monstrous—twenty bushels per acre—but many farmers make an average of twenty-five to thirty bushels for a term of years. Barley, oats and corn average considerably more, and in some of our valleys potatoes yield as fair crops as can be grown in the State. Vegetables, also, of all kinds, grow to great size and perfection.

Sheep raising is also one of the industries of the county, and the extensive range afforded by the mountains and foothills makes it a profitable business. Owing to the pleasantness of the climate, sheep are very healthy, and, as a consequence, Lake County wools are sought after by buyers. A large number of hogs are raised annually. Oaks abound in most portions of the county, and the acorn crop, which scarcely ever fails, affords fine feed for them. There is one pork-packing establishment in the county, and a large number of hogs are slaughtered and packed here, but very many are taken to San Francisco and sold.

There are five or six saw mills in the county, and in certain locations pine timber is very plentiful. We do not know how much lumber is sawed yearly, but enough to supply the local demand. Most of this is sugar pine, though there is some fir and yellow pine. In the northern part of the county there are thousands of acres of magnificent sugar pine—at least two or three townships—and all this yet belongs to the Government, and is subject to purchase under the timber law.

In the southern portion of the county are several quicksilver mines. Two of these, the Sulphur Bank and Great Western, are extremely rich, and a large quantity of quicksilver is annually shipped from them. We suppose the two average from 1,000 to 1,500 flasks per month. The Sulphur Bank also ships a large quantity of sulphur every year. The Great Eastern is also a very promising mine, and there are several others now being developed. These mines employ a large number of men, and contribute largely to the revenue of the county.

TOWNS.

Lakeport, the county seat, is a town of nearly a thousand inhabitants, and is located near the centre of the county, on the margin of Clear Lake. The ascent from the lake is very gradual for two blocks, when a succession of mound-shaped hills begin and continue for a distance of half a mile, one rising above the other, until a height of 200 or 250 feet is attained above the waters of the lake. These hills are magnificent sites for residences, commanding, as they do, a splendid view of the lake and surrounding mountains. We do not believe there is a prettier location for a town on the coast. Lakeport has three hotels, one college, two banks, one public school building, three church buildings, one large flouring mill, one brewery and twenty-five or thirty business houses, nearly every business being represented. The Masons, Odd Fellows, Good Templars and A. O. U. W. all have Lodge , and are well represented. There are also two weekly newspapers—the Lake County *Bee* and the Lake *Democrat*—both Democratic in politics. Many of the business houses are brick structures, and some of the residences quite handsome ones. It is destined to be quite a little city in the near future.

Upper Lake is a town of 300 or 400 inhabitants, and is situated about a mile from the upper or northern portion of Clear Lake. It has three hotels, one public school building, two church buildings, an Odd Fellows' hall, and quite a number of business houses. It is in the midst of a fine agricultural country and is a thriving place.

Lower Lake is situated about two miles from the southern extremity of Clear Lake, and is a place of considerable trade. It is the market town for the Sulphur Bank mine, is in the immediate vicinity of several very fine valleys, and must continue to grow and prosper for years to come. It now contains about 700 inhabitants. In it there are two hotels, one church building, a Masonic and Odd Fellows' hall, quite a number of business houses and a fine two-story brick public school building—one that would be a credit to a much larger town or a far more wealthy county. This school building was erected by the enterprise of the people of Lower Lake and vicinity, and shows that they are endowed with much public spirit. The Lower Lake *Bulletin* is puolished here by J. B. Fitch.

Kelseyville is situated in Big Valley—the largest valley in the county—and is about seven miles distant from Lakeport. It contains about 600 inhabitants, has one hotel, three church buildings, a public school building, and ten or fifteen business houses. In the vicinity of Kelseyville are the Kelsey Flouring Mills, and the pork packing establishment of William Stonebraker. The country around is thickly settled with well-to-do farmers, and they do most of their trading in Kelseyville, which will always make it a place of considerable trade. Just outside of town is a small hill, from which natural gas is constantly issuing from several holes in the ground. These gas jets, when lighted, burn very freely, and it is thought may be utilized if proper steps are taken.

Middletown, a town of 600 inhabitants, is situated in the southern portion of the county, on the Lakeport and Calistoga road. It is in Loconoma Valley, and within three or four miles of the Great Western and several other quicksilver mines, and is a place of considerable trade. It has one brick hotel, one church building, Odd Fellows' hall, public school building, and fifteen or twenty business houses. Middletown is known far and wide for its excellent drinking water. It is as clear as crystal and so cold that ice is a nuisance.

Guenoc is a small village five miles from Middletown, in Coyote Valley. It has one church building, and several business houses and dwellings, but at present, we believe, no business is done there, and the people of the vicinity trade in Middletown and Lower Lake.

The price of land is reasonable and even low compared with that in some other counties. The best valley land—as good as there is in the State—can be bought for $30 to $75 per acre, according to location and improvements. The hill lands, improved, range from $10 to $25 per acre. There are hundreds of thousands of acres in the county still subject to pre-emption and homestead. A great deal of this is covered with fine timber, but the great bulk of it is ordinary mountain land with scrubby timber. Much of this is as good as any land for fruits and grapes, and the day is coming when it will be in demand.

FRUITS.

All the ordinary fruits do well here. Apples, pears, plums, apricots, peaches and prunes mature finely and are of excellent flavor, and though no oranges or lemons are yet in bearing, a number of trees have been set out, and there is scarcely a doubt that they will mature well and prove a profitable crop. The past Winter was an unusually cold one; there were more freezes, and the cold weather continued longer than was ever known, and yet orange and lemon trees were not injured. All the small fruits grow well, and there is no county where the soil and climate suit the growth of strawberries better.

MEANS OF TRANSPORTATION.

We have no railroad touching our borders, but we have in all parts of the county finely-kept county and toll-roads. The middle and northern portions of this county send produce to and receive freights at Cloverdale, on the San Francisco and North Pacific Railroad, that point being about thirty miles from Lakeport. The southern portion of the county teams to and from Calistoga, which is about sixteen miles from Middleton and thirty from Lower Lake. There are regular lines of stages between Lakeport and Cloverdale, via Kelseyville, Lakeport and Calistoga, via Kelseyville and Middleton, Lakeport and Ukiah, Lakeport and Colusa, via Upper Lake and Bartlett Springs, and between Lower Lake and Calistoga. These stages pass over splendid mountain roads, and are all managed by careful drivers. The day is not far distant, however, when Lake will be connected with other parts of the State by railroad, either from Lakeport to connect with the San Francisco and North Pacific Railroad at Sanel, which is only twelve or fourteen miles distant, or from Lakeport or Lower Lake to Napa, or both. If Colonel Donahue will extend his road to Ukiah, as he surely will, Lakeport will at once connect with it at Sanel by a railroad or a splendid turnpike. This will be of vast benefit to this county, and will also largely benefit the San Francisco and North Pacific road.

CLEAR LAKE.

A sketch of Lake County that does not say something about Clear Lake is a very incomplete one. This splendid body of clear, pure water is about twenty-five miles long, and from four to twelve miles in width. It is in the very heart of the county, and is one of its principal features. In Winter it abounds with wild fowl, and in the Spring and Summer with fish. Catfish and whitefish have been placed in it, and in a few years they may be abundant; but the pike, perch and blackfish are to the manor born, and the quantities that are caught are almost incredible, out of Lake County. Several small steamers, steam scows and yachts, ply upon the placid bosom of the lake, and pleasure parties are the order of the day in Summer and Fall. The Blue Lakes are several miles northeast of Clear Lake, and altogether—there being three of them—are three miles long by half a mile wide. They, too, are clear and pellucid, and abound with fish and fowl. The mountains rise out of their very depths, and reflect their image in the sparkling waters.

MINERAL SPRINGS.

Lake County abounds with mineral springs, the waters of which possess great medicinal virtues. Bartlett's, Highland, Harbin's, Pearson's, Seigler, and Anderson's, are best known abroad; but there are a dozen others whose waters are very fine, and that will become famous. A large number of invalids and health seekers visit them annually, and the number will continue to increase as they become better known. It is estimated that from 15,000 to 25,000 persons visit the county annually in search of health or pleasure.

CLIMATE.

But the great charm of this county is its pleasant and healthful climate. The Winters are never severely cold, and the Summers never oppressively warm. From November to April much rain usually falls, and ice occasionally forms, but during this period we have days and weeks at a time when the sun shines brightly, and the weather is perfectly delightful. Flours usually bloom all Winter, which is sufficient evidence of mildness. From May until November, the weather is always fine. But little rain falls, and though the Summer days are warm, they are not sultry. A gentle breeze nearly always springs up in the afternoon, and though the evenings are sufficiently pleasant for even invalids to sit out of doors until bed time, the nights are usually cool enough to make a light blanket or quilt comfortable as a bed-covering. Fogs rarely ever visit our county, and harsh sea breezes are absolutely unknown here.

HEALTHFULNESS.

There is not a place on this coast or on this continent more healthful than Lake County. Many persons are now living here who came with their lungs seriously affected, and who are now stout and robust. For asthmatic complaints our county has no equal. There are dozens of persons here who have suffered for years with this distressing disease in other States and other portions of this State, who were at once relieved upon coming to this county. We have never known a case where relief was not afforded almost immediately. Of course we have sickness, but it generally yields readily to treatment, and the old-fashioned chills and fever are unknown to our people, except from hearsay or experience elsewhere. This healthfulness and adaptability to arrest diseases of the lungs are due to the altitude above the sea level, to the distance from the ocean, and to the dryness and equability of the climate. Clear Lake and the valleys are about 1,500 feet above the sea, and our mountains rise from 500 to 2,500 feet higher. This is about the altitude for consumptives, and is far enough from the ocean—being forty to sixty miles—to be free from all its fogs or winds.

The population of this county is about 7,000, made up of people from nearly every State in the Union and many of the European States. As a rule, they are clever and hospitable, orderly and law abiding. Of course there are some turbulent characters and violations of the law occasionally occur, but the fact that our jail is often without a single occupant shows the general good character of our citizens. In justice to Lakeport, I must say it is one of the most orderly and quiet towns of its size that can be found anywhere. It has plenty of saloons, and they all appear to do a good business, but our liquors are either better than elsewhere, or our citizens know better how to gauge their drinks and when they have enough, than others. Certain it is that drunkenness is rare and broils are almost unknown.

We have well conducted public schools in every neighborhood, and churches are found in all parts of the county.

Game is plentiful in the mountains. Bears are becoming somewhat scarce, but there are smart hunters who kill some every Winter. Deer are still plentiful, and quail can be found everywhere. The immense Jack Rabbit and the little Cotton Tail are very numerous. Besides the lake fish already spoken of, our mountain streams abound with trout. So it will be seen that the lovers of the rod and gun can find sport to their heart's content.

We have thus given an imperfect sketch of some of the main features of this little mountain-locked county. It is somewhat isolated and comparatively unknown abroad, but its attractions are too great for it to remain so long. It has no extensive valleys like some other portions of the State, but it has enough fine land, when all shall be cultivated, to support a population of 20,000, and export a million and a quarter bushels of grain, besides fruits and wines. It has no large rivers flowing through its borders, but it has beautiful and expansive lakes and hundreds of sparkling mountain brooks. It has no grand and imposing scenery like Yosemite, but its beautiful Clear Lake, nestled in its centre, surrounded by mountains and reflecting the image of the clouds as they flit across its placid bosom, is a picture of rare loveliness, and one sufficient to fill the eye and heart with beauty. To those who want health, a pleasant climate, and small farms of fertile and productive land, we know of no county that offers greater inducements, and to all such we say "Come," and you will meet a people who will extend the cordial hand of welcome.

AMADOR COUNTY.

By W. D. HALEY,
Editor of the Amador Times.

Peculiarly shaped, and wedged in between ElDorado, Alpine, Calaveras, San Joaquin and Sacramento Counties, Amador possesses a remarkable diversity of wealth-producing resources, which have made it already prosperous, and seem to justify the belief of its residents that it is destined to become one of the most important and among the richest counties in the State of California. This faith is based upon the following facts: The immense timber resources of the upper part of the county; the varieties of the soil, which are, in different localities, and sometimes united in one district, suited to the growth of the cereals, grasses, vegetables and fruits of the temperate and semi-tropical zones; a climate exceptionally salubrious and healthy, even as compared with other portions of California; abundant deposits of gold, copper and coal; nearness and accessibility to the markets of San Francisco and Sacramento, and a natural water-shed from an altitude, in the northeastern corner of the county, of over 8,000 feet above the sea level, gradually descending to 335 feet at Ione City, the terminus of railroad communication.

Supposing a person in search of a desirable location for settlement, or an invalid or lover of the picturesque seeking a life-giving atmosphere and a region of marvellous beauty, to leave San Francisco or Sacramento on the morning train, he will, on arriving at Galt, find a train awaiting him at the junction of the Central Pacific and the Amador Branch, which will land him in Ione City at four o'clock in the afternoon. Before reaching the terminus of the railroad, however, he will have passed through a rolling and gradually ascending country, and will have seen the evidence of the existence of the coal formation, which underlies the Ione Valley, in the coal mines in active operation, a short distance below the station at Ione City. Awaiting him are stages which will carry him directly to Jackson, Sutter Creek, Drytown, Amador City, Plymouth, Volcano and the intermediate points within the county, or to Mokelumne Hill, in the adjoining county of Calaveras, where conveyance can be obtained to San Andreas and the Calaveras grove of "Big Trees."

But our traveller, whether intent upon business or health and pleasure seeking, will do well to take a seat in the accommodation stage, which, at a cost of twenty-five cents and a few minutes of time, will deposit him at either of the well-kept hotels in Ione City. He has now passed the developed coal belt of the county, and has arrived at a belt of gold-bearing gravel, which, when he continues his journey toward Jackson, the county seat, he will, at a distance of less than four miles from Ione City, find intersected by the copper belt, upon the development of which the Newton Copper Mine is doing faithful and encouraging work; beyond this are the quartz leads, of which more will be said hereafter.

THE VICINITY OF IONE CITY.

At Ione City, 133 miles from San Francisco, the traveller enters the southwestern corner of Amador County, and finds himself in a pleasant and thriving town of about 600 white population, situated in one of the most beautiful and fertile valleys in the State, which would long ago have been settled by a dense and prosperous population but for the curse of a Spanish grant, which, in 1854, robbed the settlers of their farms and houses, and laid 40,000 acres of rich agricultural and mineral land under the blight of a monopoly composed of speculators whose history has been a counterpart of Æsop's fable of the dog in the manger. Happily the people are beginning to feel a greater degree of energy, and those who lost their all have either secured a fresh title from the grant proprietors or have moved away and been succeeded by those who, having purchased directly from the grant, have only paid once for their land, and consequently are on equal footing with settlers in other localities. A few days can be profitably spent in this part of the county, and the Ione, Jackson, Dry Creek and Buckeye Valleys should be visited for the purpose of examining the unusual combination of lands rich in gold, copper and coal, surrounded by large tracts of exceeding fertility.

MINERALS.

At Irish Hill, three and a half miles from Ione City, large and profitable deposits of auriferous gravel are being worked by the hydraulic process; at Muletown, where much profitable placer digging was done at an early day, there is abundance of cement, awaiting the energy and capital to establish stamp mills and extract larger returns of gold than have ever yet been obtained. The surface of this region has been scratched over, but not a tithe of its gold has been obtained; and the same is true of the whole county, and includes the quartz mining in the neighborhood of Jackson, Sutter Creek, Volcano, Amador and Plymouth. If Amador County was away off in Arizona, or in some bleak, inhospitable and rugged region, like portions of Nevada, the rush of capital and labor to it would be one of the marvels of the age. But within easy railroad ride of San Francisco, it lies awaiting the open sesame of some far-seeing operators to reveal and rifle its Aladdin-like caves of wealth.

Mark this prediction. Within twenty-five years, possibly within ten, there will be developed in this county quartz mines which will equal in extent and productiveness any that have ever been developed in the same superficial area anywhere in California or Nevada. This prediction is based upon the established fact that in various parts of the country, and especially upon the "Mother lode," quartz claims have been profitably worked by the windlass process and then abandoned for want of means to erect the necessary machinery for sinking them to a sufficient depth to strike the richest veins. In some instances tunnelling has been resorted to, and with rich results. Whenever practical miners and capitalists can be induced to believe that untold bonanzas are lying here, right under their noses, the mineral developments of Amador County will be one of the sensations of this sensational age and country.

AGRICULTURE, FRUITS, ETC.

Unlike many mining regions, Amador County has an extraordinarily productive soil, increasing quantities of which are yearly being improved. At present, out of 428,000 acres of land contained within the county limits, a mere fraction—between 20,000 and 25,000 acres—are cultivated. Wheat and barley are the principal grains, and their yield is large; of potatoes, two crops is the rule; and of alfalfa, seven crops is not very unusual. The foothills, and especially the valleys of the lower portion of the county, have proved very favorable localities for the growth of the semi-tropical fruits. The exceptionally severe Winter through which we have just passed has not seriously injured the orange and lemon trees. This article is written in the latter part of February, and in Ione Valley the almond, peach, pear and apple trees are in full blossom; the atmosphere is balmy and fragrant, and the hillsides are clothed with an emerald verdure. The possibilities of the soil and climate are as yet unknown, for the reason that no fruits, grain, grass or

flower has been experimented with unsuccessfully.

Travelling from Ione to the county-seat, at Jackson, twelve miles of a good toll-road passes through a region now covered in the chaparral, but almost every foot of it capable of becoming

AN UNLIMITED VINEYARD.

Grapes grow in profusion, and were last season sold for $20 a ton, to be manufactured into wine. The orange and peach are perishable fruits, but it has been demonstrated that dried and pressed raisins can be raised in California at a good profit, and right here, where land suited to the culture of the raisin grape can be readily obtained, at a moderate price, there is abundant opportunity for practical grape-growers to develop an unsurpassed region of vineyards, on hillsides that are now profitless, except for grazing purposes.

THE MINING REGION.

Although one can hardly put a shovel down in any part of the county without the possibility of unearthing gold, yet the quartz mining region, in which the largest developments have been made, surrounds the towns of Jackson, Sutter Creek, Plymouth, Amador and Volcano. Extensive and profitable quartz mines are in operation in the neighborhood of these places; but, as before stated, the search for the precious metal has so far been comparatively superficial. Enough, however, has been done to warrant the investment of tenfold the capital now employed—a fact to which the attention of men of means and mining experts cannot be too frequently or emphatically directed.

MANUFACTURES.

Very little has been done towards the creation of manufacturing interests, although the upper portion of the county has an almost inexhaustible supply of timber. With water facilities from the mountains clear down to Sutter Creek, there ought to be more manufacturing, especially in the way of sash, door and planing mills, chair, pail, furniture and carriage factories, and a dozen other trades depending upon wood as the raw material. At present, a few saw mills and grist mills in various parts of the county, and an iron foundry at Sutter Creek, embrace about the whole of our manufactures. Local consumption and the facility of shipment to market afforded by the railroad terminating at Ione City will no doubt induce the establishment of a variety of manufactures in the course of time. Those who are looking for suitable locations for manufacturing enterprises will do well to visit and thoroughly examine all parts of Amador County.

THE TOWNS

Are all growing with greater or less rapidity. During the past year there has been a marked increase in the number of buildings in Volcano and Amador. The latter is fairly outstripping all the other towns in growth. A year ago there was only one store in Amador City, now there are six. Jackson, the county seat, 145 miles from San Francisco, has a population of probably 1,000 people; Sutter Creek, 1,200; Amador City, 600; Plymouth, 600; Volcano, 300; Drytown and Oleta, 200 each, and Ione City, 660. These figures are mere estimates, and if the immediate neighborhoods of the towns were counted, would be largely increased—Jackson, for instance, to 2,500, Sutter Creek 2,000, Ione City to 1,000, and the others in like proportion.

WHAT AMADOR NEEDS.

Amador County needs and deserves an increase of permanent settlers. Families from the Eastern States, with means enough to purchase farms or unimproved lands, and intending to settle down to a steady and patient life work for a moderate competency, can find here all reasonable inducements. In the valleys of the lower part of the county competencies are awaiting energetic and industrious men who will devote themselves to the raisin grape culture, supplemented by market gardening. For this industry, which has so far been neglected, comparatively small tracts of land are needed. On Long Island, the writer has known many comfortable fortunes made by the cultivation of vegetables for the New York market, distant forty or fifty miles from the producer; and the poorest land in Amador County will compare favorably with the best on Long Island; to which is to be added a climate in which gardening operations can be carried on nearly throughout the whole year. From the county line it is but little more than thirty miles to the city of Sacramento, over a good road, so that it would be quite practicable for a farmer in that portion of the county to load up with fruit and vegetables in the afternoon, and dispose of his load in Sacramento the next morning. With the present arrangement of one train a day on the railroad, the products of market gardens could be conveyed to San Francisco in good order; and should there be an influx of the right kind of people to take hold of this form of industry, an amount of traffic could soon be created to justify the running of a night train—like the peach and milk trains of the Eastern roads—which would take the garden and dairy produce from the farm on one afternoon and land it in San Francisco market early the next morning. I wish I could impress the agricultural reader who may be looking for a new home, with my own strong conviction of the adaptability of this region to the successful prosecution of market gardening—one of the most remunerative forms of agricultural labor. The soil, climate, and means of transportation are all here, and even where water is needed, it is obtainable by a moderate outlay in connection with the natural streams or the numerous ditches. It is emphatically a region to demonstrate the value of small farms managed with intelligence and industry.

There is no inducement for the immigration of idlers, speculators, or men who propose to grow suddenly rich by the employment of the capital of other people. The professions, school teaching, store keeping and most of the mechanical trades are fully supplied, but there are many inducements for the establishment of manufactures and the settlement of a large, industrious, agricultural population.

SCHOOLS, CHURCHES, ETC.

If the intelligence and morality of a people is to be judged by the existence of schools and churches, Amador has no reason to fear the test. In every town there are churches—Ione City has four, three Protestant and one Catholic—and good school houses and competent and well-paid teachers are abundant enough to ensure a good education for every one of the 2,659 children of school ago which are now on the school census. Good roads extend in every direction. Taxes are not more burdensome than in other counties. County buildings are erected, the county indebtedness is small, and the county officials are paid by salary and not by fees.

NEWSPAPERS.

There are three newspapers in the county; two of them published at the county seat. The Amador *Ledger*, published by Richard Webb, is a thorough-going Republican organ, vigorously edited and well printed. The Amador *Dispatch* is the Democratic organ, uncompromising and zealous in the defence of its party, published by W. M. Penry. The claims and interests of their respective parties are faithfully advocated by both these gentlemen. The third newspaper, the Amador *Times*, is published at Ione City, and of it it is proper for the writer only to say that it endeavors to live up to its motto of "Independent in Everything; Neutral in Nothing."

VALUE OF LANDS.

One of the points of inquiry to which THE CALL has directed the attention of the writers of this series of articles, relates to the value of lands in different parts of the State. So far as Amador is concerned, and I presume the same rule will apply to other sections, it would be impossible to

approximate to any general average of value. In this county land ranges in value, according to quality, location, improvements, etc., all the way from $1 25 to $100 per acre. There is still some Government land open for entry at the lower price, and occasionally a piece of rich, alluvial lowland is held at the higher figures. But between these extremes good land, with or without improvements, can be bought at reasonable prices. In this, as in many other respects, reliable and full information can be gathered only by personal investigation.

HYDROGRAPHY OF AMADOR.

In estimating the resources of California lands, the average rainfall and the natural facilities for irrigation are important factors. On the first point, the rainfall, the county of Amador is usually blest with sufficient rain to ensure good crops. Taking the record of the last and the present seasons, and selecting the county seat as a central point for observation, we get the following results: In the season of 1877–8, which was noted for an extraordinary flood throughout the State, the rainfall was 33.69 inches; for the present season, up to March 1, it has been 13.54 inches. Usually there is a sufficient rainfall for agricultural purposes, unless a drouth prevails throughout the State.

The hydrography of the county, as can be ascertained from an examination of a good map, is peculiarly favorable to the thorough irrigation of almost every acre of land within its borders. In the northeast corner of the county, at an altitude of nearly ten thousand feet above the sea level, there are numerous lakes, which are as important for their immense reservoirs of water as they are attractive by their wonderful beauty. From this point, the water-shed descends down through every part of the county, to its southwest and northwest corners. An almost perfect outline of the principal water courses can be seen in the following simple way: Let the reader hold the palm of his hand toward him, the top of the thumb pointing toward his left shoulder, and he will have in the three larger lines of the hand, a map of the Cosumne River running along the whole northern boundary of the county; Sutter Creek, which drains a larger portion of the centre, and the Mokelumne, which sweeps along the southern border. These are three main water arteries, into which a number of tributaries are discharged. The minor, but still important, streams are: Bear River, Panther, Deer, Tiger, Mill, Antelope, Dry, Jackson, Stony and Indian Creeks, and other small streams, but these are enumerated to indicate that there is a a water system which is capable of being made the basis of a complete system of irrigation. Already there are several important ditches traversing the whole length of the county, and supply water for miners at the lower end of the county. No region is better adapted for irrigation, and in few can it be secured on a larger scale with less outlay of money.

As the descriptions of the topography and resources of the State are intended to furnish information to intending immigrants, the writer, in concluding this hastily-written sketch, may be permitted to suggest that after a full examination of many countries, and being a native and long resident of the Atlantic States, he can conscientiously recommend this region as worthy of examination by that class of hard-working farmers who have made Long Island and Connecticut fertile in spite of their barren soil. With one-half the labor and skill which is expended upon the small farms of the East, equal amounts of land can here be made to yield double the income derived from the former. Small farms, well cultivated—fruit-raising and drying—the cultivation of vegetables for the city markets, as that industry is pursued in the neighborhood of Norfolk, Va., and within 100 miles of New York; dairy farms, the raising of sheep and hogs, are all profitably open to Eastern energy. Manufactures and the development of quartz, copper and coal mines will amply reward the investment of large capital.

There is one thing in favor of emigration to California which has not been stated. The newcomer finds himself at once on an equal footing with those who have preceded him. There are no class, society or traditionary barriers to exclude him from society, as in all the Eastern and Southern States. California has not been settled long enough to give rise to a local exclusiveness on the ground of long residence. No man here can claim local distinction on the ground that his great grandfather belonged to "one of the leading families in the county;" and we all feel, being "carpet-baggers" ourselves, on a footing of social equality with the incoming strangers who join us in the work of developing the inestimable riches and the poteutial civilization of the fairest corner of the American Union.

TRINITY COUNTY.

By T. E. JONES.

This is one of the northern counties of the State, there being but one county (Siskiyou) between its northern boundary and the Oregon line. In shape, it is long and comparatively narrow, its widest breadth not exceeding fifty-five miles, while its length, north and south, is nearly one hundred and fifty miles. With the exception of the south part, lying next to Mendocino County, it lies in such shape as to include within its boundaries all the territory drained by the Trinity River and its branches. In the south and southwestern parts of the county, we pass out of the watershed of the Trinity, upon the heads of streams which empty into the ocean. Trinity County was named after its principal river. In the Summer of 1845, the late Major Pearson B. Reading, with a mixed company of whites and Indians, visited the head waters of Trinity, and was quite successful in trapping. He gave the name it has since borne, in the belief that it emptied directly into Trinidad Bay. Such is not, however, the case. The Trinity forms a junction with Klamath River about twenty miles from the county line. In 1848, after the discovery of gold by Marshal, at Sutter's Mill (or Coloma), the Major, who then owned and was settled upon the Reading Grant, in the Sacramento Valley, organized a company of men, chiefly domesticated Indians, and in July crossed the Trinity range of mountains, by a different route from any now travelled, and reached Trinity River near the point where Weaver Creek empties. Here he found very rich surface mines, and the party worked with great success for a time. Some Oregonians, on their way to the mines by land, heard of the whereabouts of Reading and his party, and coming to the place he was working (since called Reading's Bar), objected to the Major's Indian help. Reading thereupon disbanded his company and returned to the Sacramento Valley. Other prospectors began now to come in, but it was not until the following year that Weaver Basin was discovered and settled.

As the gold miners were the cause of the first settlement of the county, so mining has continued the chief industry of the population from that time until the present. The earlier workings were confined mainly to the beds and bars of the numerous streams, but with the introduction of hydraulics, operations were carried on upon a more extended scale. Two causes, in the meanwhile, combined to keep this county from advancing in population and consequent development to the same degree enjoyed by other counties whose natural resources were no greater than ours. One was the distance which all kinds of mining supplies had to be transported; another, the fact that the greater portion of the county lay away from any direct line of travel, which prevented the ingress and retention of chance population. Other points much nearer a base of supplies and more accessible to the mining brotherhood, offered as inviting a field of labor, and it thus followed that during those years when the mines were in the flush of success, counties of far less area possess three and four times the population. The result is that at the present time there are openings for successful mining here that, had the country been more favorably and conveniently situated, would have been worked out years ago. One thing, however, should be borne in mind—that to mine successfully in the manner now in use requires organization. With each year that passes, the miner requires more water for working as the deposits are followed back. It is not now so easy a matter for three or four men to combine together and, by putting a ditch on some place they have found, secure themselves in the possession of a claim which will furnish labor for years, although even those opportunities are not entirely gone. There are many places to which the attention of capital could be directed for safe and profitable investment, though perhaps the best association for that purpose would be that of a number of men, each possessed of some means, who could combine their labor and money together in developing a gravel range.

Beginning with the southern portion of the county, we find a broken, mountainous region, but highly adapted for grazing and pasturage; and a great deal of land has been taken up within a few years past for these purposes. The south line of the county is in the fortieth parallel of latitude, and this is the narrowest part of it, the width next to Mendocino County being about twenty-six miles. For the first fifteen years after the organization of the State Government, this section was unsettled by whites, the Indians being numerous and hostile. They were finally brought to terms by the six companies of mounted rangers organized in 1863 for the purpose of subduing them, though detached bands made occasional forays into the settlements, bent on pillage and murder. The last of these bands killed a man named Burke, who lived in the upper part of Hay Fork Valley, in the Fall of 1868. Half a dozen determined men took their trail at the house of Burke (which was burned by the Indians), and followed it day after day until they overtook the savages, killing or capturing the entire party. This was the last of our Indian troubles, and when it became safe, it was not long in becoming better known, and rapid settlement followed. Though this was the last settled part of the county, it has been nearly all brought under the Government survey, and many of the settlers have patents for their land. The local Land Office is at Eureka, Humboldt County. There are two polling places, but the vote cast is light, the inhabitants being scattered over a wide extent of territory, thinly peopled.

Hay Fork Valley is of importance as a farming region, there being a number of good farms in the valley, and on the smaller streams emptying into the Hay Fork of Trinity River. The chief productions are hay and wheat, which find a ready sale at home or at Weaverville. The valley has been settled and farmed to some extent since 1851. On Hay Fork, above the valley, are good mines, the gold, however, not being of so good a quality as that obtained in other parts of the county. There are two precincts, polling generally from seventy to eighty votes.

Indian Creek is a mining camp and precinct, polling from thirty-five to fifty votes. It has paid very richly in former years, and there are still some good claims worked. On the dividing ridge at the head of Indian Creek, near the boundary line between Shasta and Trinity, excellent quartz prospects have been found and a mill erected. The company owning the Bullychoop and the Occidental ledges have taken out considerable rich rock, and last week contracted to have a tunnel run into the mountain to tap the ledge at a greater depth. The mine is in the hands of enterprising men and will doubtless prove a source of wealth to its owners. Other parties have also struck quartz prospects both on the Shasta and Trinity side of the mountain. There is a store, hotel and blacksmith shop at Indian Creek and several fine farms in the precinct.

Douglas City is on Trinity River, at the crossing of the wagon road from Hay Fork to Weaverville, and is the central point of a good mining region. It has a store, and the other adjuncts of a mining camp, the precinct polling from sixty to ninety votes.

Lewiston is also on Trinity River, eleven miles above Douglas City. There are about ninety voters in this precinct, the majority of whom are miners, though there are several good farms cultivated. Two bridges, one at Lewiston, and one at Grass Valley, span Trinity River on the two roads leading from Weaverville out of the county. The Deadwood Quartz District is in Lewiston Precinct. Some very rich quartz has been found

there, and mills erected. If the ledges prove permanent, they will be good property.

Minersville is a mining camp on the East Fork of Stewart's Fork of Trinity. The gold is coarse and of very fine quality. The precinct polls from forty to fifty votes.

Trinity Centre is on the road from Shasta to Yreka, and is the second place of importance in the county. The valley has a number of good farms, the produce of which finds ready sale right at home to teamsters and travellers, while there are excellent mines in the hills lining the valley. This is the only place in the county which has telegraphic communication with other places. The town is thirty-two miles from Weaverville, and forty miles from Shasta, with which last named place it has daily stage line communication. There is a Lodge of Odd Fellows, Comet No. 84, at this place. The precinct polls from eighty to ninety votes.

Cinnabar, or Altoona, is the most northern settlement, and owes its life to the Altoona Quicksilver mines. It is a small place at present, the company having but few hands in their employ. We shall speak more of the quicksilver interest in another place.

Junction City is west and south of Weaverville, nine miles distant. The vicinity offers one of the best fields for the prospecter of any in the county. The claims now worked are in the bars and banks of the river, and pay well in the working season. A scarcity of water for hydraulic mining is the worst thing the miners have to contend with. There are also several good ranches in the vicinity. The town has two stores, a hotel, Post Office, and other conveniences, and the precinct polls from eighty to one hundred votes.

North Fork, eight miles below Junction, is at the junction of the main river with its North Fork. It is now a small place, but the mines in the vicinity have been very rich. The McGillivray Mining Company own some good ground and water rights in this precinct, and I am told intend bringing on a ditch 200 feet higher than their present one. The precinct polls from twenty to thirty votes.

Cox's Bar is ten miles below North Fork, and is almost exclusively peopled by miners. There are some very rich claims in this section, and I believe San Francisco capital is being used to some extent to develop others. The precinct polls about thirty votes.

Martinville precinct is the most westerly of the county joining Humboldt. There are only twenty-five or thirty men there, who are engaged in farming. This I regard as one of the most promising sections of the country for mining, though very little has been done thus far. There are deep gravel bars and banks which prospect well for sluicing, and when worked with good advantage cannot fail to pay well. To put on water will, however, require an outlay of capital which will be followed with good results.

New River and Rattlesnake are small settlements, only accessible by pack trains. They are difficult of access, and in the Winter season comparatively shut out from the world. The people are mostly miners.

Cañon City is on Cañon Creek, and is a mining camp of some importance. It is nine miles from Junction City and eighteen from Weaverville. Cañon Creek is one of the best water rights in the county, and by taking a ditch out of it high up, it could be made to cover a great extent of mining ground. The precinct polls forty to sixty votes.

Weaverville, the county seat, is one of the prettiest little towns in the mines. The business houses are mostly built of brick, while the residences of the citizens are surrounded with tasteful grounds and orchards. The town and vicinity contains about 750 inhabitants, exclusive of Chinese. It has the Court House, Catholic Church, a fine school-house, erected last Summer at an expense of about $7,000, which are the only buildings of importance. There is also a Masonic Lodge, Trinity, No. 27; a Chapter of Royal Arch Masons, North Star Lodge, No. 61; Stella Encampment, No. 12, I. O. O. F., and Beacon Lodge, No. 300, I. O. G. T. The Masonic Lodge has a membership of seventy, the Odd Fellows' and Good Templars' Lodges a membership of about sixty each. Five grocery and general merchandise and three clothing stores are maintained here, and do a good business, drawing a good deal of trade from other portions of the county. The town is built on good mining ground; some of the lots were worked to the bedrock before the buildings were erected. Before the invention of "giants" the mines in the immediate vicinity were generally worked by the old plan of "gouging" and sluicing, there not being enough pressure in the basin to work with the hydraulic. Most of the companies now use large pipe and the largest size of "giants," and clear a great deal more bedrock in the course of a season than formerly, and at much less expense for labor. The town is situated in a circular basin of four or five miles diameter, the gold deposits being found upon the "false" bedrock. The true bedrock lies at a great depth below the workings, and has only been found once. In 1854 a shaft was sunk, by subscription, to find the bedrock, which passed through several layers of false rock, and reached true bedrock only at a depth of more than six hundred feet. Gold was found whenever the shaft passed through gravel, but not enough to justify working, or even further prospecting. The heavy debris deposited in Weaver Creek has filled that stream so deep as to ruin a great deal of rich ground. The Weaver Creek Fluming Company have a flume in at the outlet of the basin, commencing three miles below town, a fine piece of work, each box being twenty feet wide by ten feet deep, set at a grade of two inches to twelve feet. The company have laid about a mile of flume, the head of which is in bed-rock, and it carries off a large amount of debris, but in a season of floods the flume is sometimes clogged by the logs and brush set free by the washing away of piles of tailings. It is an enterprise which should pay its projectors. West of Weaverville the W. D. and H. M. Company have conveyed water on to Oregon Mountain, and are opening a magnificent claim. This was the first company to open this character of mines, and on the success which shall attend its efforts doubtless rests the prosecution of other enterprises of a similar character.

Trinity County is about one hundred miles in length north and south, and from twenty-six to seventy miles in width. The published maps do not give a correct delineation of its boundaries. It contains over 3,000 square miles of territory, and only about 2,300 inhabitants, excluding the Chinese, who probably number two-thirds as many more.

Gold mining is, as we have said, the chief industry of our people, and it is followed to some extent in all the places we have named with the exception of that part of the county next Mendocino. The presence of cinnabar was noticed by the miners of Trinity River at an early day, but there was no search made for the mines of that mineral until 1871. Miners working upon one of the upper branches of the river noticed the presence of cinnabar in such quantities as indicated the close proximity of the place from which it came. The lead was followed up and the mines of Altoona discovered. At the time quicksilver was worth more than a dollar a pound, and preparations were at once made to turn the discovery to account. The first ore was packed out in sacks and retorted near the road to Yreka, and when the character and permanency of the mine was demonstrated a wagon road to the mine was built and machinery for reducing the ore carried on to the ground. There are other locations near the Altoona, but being in the hands of private individuals have not been so fully developed. From indications found it is thought that there are mines of cinnabar in the southern and western part of the county, in that portion of the Coast Range near the Humboldt line, but no organized effort has yet been made to test the truth of this belief.

The price of farming land varies according to location. Small improved places near a market are higher proportionally than large farms. Aside from the two valleys (Hay Fork and Trinity) the farming land is generally in small patches, which are used for the production of fruit and vegetables mainly. All the fruits grow to perfection in this region, and in flavor are much superior to the fruit grown in the Sacramento Valley.

It is, however, in the gold production that the county excels. From the books of Wells, Fargo & Co's Express Agency, at Weaverville, I find that the amount of gold dust shipped during the year 1878, by that Company, was $648,062 26. This does not include the dust sent from Trinity Centre and Lewiston, most of which is shipped direct from those points, which M. F. Griffin, banker at Weaverville, estimates at at least $100,000 more. Added to this is the amount taken below by individual mining firms, a number of the heaviest miners in the county taking the yield of their claims direct to the Mint. What with the amount we can figure upon to a certainty, and an approximate estimate of that taken below in private hands, it is safe to say that the gold yield of 1878 was very close upon one million of dollars. The Trinity gold bears a high standard of fineness—all the camps, with two or three exceptions, producing dust that assays over 900 fine.

Weaverville is distant from Sacramento City 218 miles. The route is by the California and Oregon Railroad to Redding, 170 miles; thence by stage nearly due west through the town of Shasta to the Tower House. At this point the stage road divides, one route leading through French Gulch, in Shasta County, to Trinity Centre, and thence on to Fort Jones and Yreka; the other crossing the mountains by way of Lewiston to Weaverville, the terminus. The distance from Redding to Weaverville, forty-eight miles, is made by stage. Passengers leaving Weaverville at nine A. M. reach San Francisco the next evening.

SAN BERNARDINO COUNTY.

By JOHN ISAAC.

San Bernardino, one of the largest, if not *the* largest, county in the Union, is bounded on the north by Inyo County and Nevada, on the east by Arizona, on the south by San Diego, and on the west by Los Angeles and Kern Counties, and contains 23,472 square miles, of which the larger portion is desert and mountains. The principal agricultural section is in the valley of San Bernardino, immediately surrounding the town of the same name. The valley was originally covered by Mexican grants, the principal one of which—the San Bernardino Rancho—contained 35,509.41 acres, and was granted by Juan B. Alvarado, Governor of California, in 1842, to Jose del Carmen Lugo, Vicente Lugo and Diego Sepulveda. His title was confirmed by the Commissioners to settle private land claims in California in 1853, and was afterwards covered by U. S. patent, which gives a clear title to lands on this rancho. In 1851 the title was transferred by the Lugos to the Mormons, who settled the rancho under the leadership of Amasa Lyman, Charles C. Rich and Ebenezer Hanks. It was subdivided into farms and sold to actual settlers. The present town was laid out and a thriving Mormon colony established. It was said to have been Brigham Young's plan to bring all the Mormon emigration to this coast and use San Bernardino as an outfitting depot for those en route to the promised land. The Mormon war of 1857, however, caused him to change his programme, and, to centralize his powers in Utah, he called in all his outstanding settlements, and San Bernardino was abandoned to the wicked. After the departure of the Mormons it became, owing to its isolation, a refuge for the worst classes of the country, and for years a state of affairs bordering on barbarism prevailed. A better class has for years been coming in, and the advent of the railroad and a large influx of Eastern population consequent thereon, has steadily and permanently changed the face of affairs, until San Bernardino to-day boasts as peaceable and orderly population as can be found in any county on the coast. This change is especially noticeable in the surroundings. The old box houses have given place to tasty modern cottages, the uncultured fields to neatly kept farms and thriving orchards, and a demand, constantly increasing, has sprung up for those modern civilizers, music, books, etc.

The climate of the county is as varied as are its physical features. The valley, owing to its inland position, possesses a climate differing from the seaboard towns, the dryness of its atmosphere constituting a marked difference. The Spring and Fall months are the most enjoyable, the weather then being all perfection. The temperature is steady, the nights cool, the days cloudless, and a pleasant sea breeze which reaches the valley every day from eleven to two o'clock and continuing until sunset, greatly modifies the heat, even of midsummer. In midsummer the days are hotter than in the coast towns, the thermometer ranging from 95 degrees to 105 degrees. The heat, however, is dry and not at all enervating or oppressive, and work can be carried on in the sun with more pleasure than when the thermometer records 75 degrees to 80 degrees in the East. Sunstroke is a thing utterly unknown in this valley. The regular sea breeze which reaches the valley daily, while it does not affect the thermometer, greatly modifies the heat which would otherwise be oppressive. The nights are always cool, and a pair of blankets will be found desirable almost every night through the Summer months.

Winter is the rainy season, and, when not raining, the days are usually clear, warm and pleasant. There is not a day in the year when men cannot work out of doors in comfort in their shirt sleeves. In the valley occasional frosts might occur in the Winter season, but from this visitation the foothills surrounding the valley are always exempt, and the most tender plants flourish in the open air without injury. The most disagreeable features of the Winter are the "northers," which usually come in the early part of the season. They are hot, parching winds from the desert, which, though seldom boisterous, are depressive and destructive, as they evaporate all moisture from vegetable and animal life, leaving everything scorched and parched up. They are, however, of infrequent occurrence. A change of climate may be had by a drive up the mountains, requiring but a few hours' time, where cool and refreshing valleys are found, abounding in forests and streams, and where the weather, even in the hottest season of the year, is Spring-like and balmy.

One of the great advantages enjoyed by San Bernardino is its abundance of water. Almost surrounded by mountains, numerous streams pour into it from all directions, while artesian water can be obtained almost anywhere in the valley by sinking from 30 to 300 feet. There are now several hundred flowing wells in the valley, affording pure water for the household, as well as for purposes of irrigation. Owing to this abundance of water the farmers have less dread of a dry season than is experienced in other parts of the South, while a failure of crops is a thing wholly unknown.

In resources, this county can boast as great variety as it can of climate and physical features. The principal ones are agricultural products, semi-tropical and deciduous fruits, lumber, wool, cattle, gold, silver, lead, and honey. The staple cereal is barley, which is a Winter crop, and in ordinarily good seasons yields very heavily. After the barley is harvested, on damp or irrigable lands, it is succeeded by a crop of corn; alfalfa, which is the principal hay crop, yields very heavily, and is cut from four to seven times in the season, yielding at each cutting about two tons per acre. Vegetables of all kinds attain here an enormous growth, as do all other agricultural products. The cultivation of semi-tropical fruits has, of late years, received a large share of attention, and immense tracts of land have been devoted to their culture. The principal fruit section is in and around

Riverside, where there is a stretch of country some twelve miles in length, devoted entirely to semi-tropical fruits, and already the owners are receiving handsome incomes from their orchards. Riverside is now boxing and shipping large quantities of raisins, which are pronounced by judges the best in California and unequalled in the world. Besides semi-tropical fruits, all those of more northern latitudes can be raised, and apples and berries raised in the mountains are unsurpassed for size or flavor. Although these fruits grow in the valley, they do not attain that degree of excellence which those grown in the mountains do. Figs, almonds, walnuts, and, in short, all kinds of fruits and nuts do well here.

Another important industry of the country is agriculture, to which, of late years, a great deal of attention has been devoted. Large quantities of honey have been, and are continually being, shipped from this county to the East and Europe. The abundance of water, and, in consequence, of bee feed, renders this business less risky and more profitable here than in those sections where a season of drouth may carry away the profits of several good years. San Bernardino honey ranks with that of San Diego, unequal in quality, flavor and clearness.

The mountains surrounding the valley are filled with magnificent forests of pine, cedar, oak, and other timbers. There are now four saw mills engaged in lumbering, and their supply of timber is practically exhaustless.

Another of the great industries of the county is that of wine growing. It is here that the Cucamunga vineyard is situated, the wines of which have a national reputation. Another large vineyard, the Barton, is located at old San Buenaventura. In addition to these there are numbers of smaller patches devoted to vines, which aggregate a very important item in the exports of the county.

Wool is also a great article of export, the uncultivated tracts outside of the valley affording excellent pasturage for sheep, of which large herds are kept, their wool finding a ready market in the East, where it is mostly sent.

Several very rich mines are found in this county, the best known being the Ivanpah, which for years past has been paying largely, and sending regularly its quota of fine bullion to increase the wealth of the county. Clark District, in which this mine is located, has also numerous other claims more or less developed, and, with better facilities for transportation, will become a camp of great importance. Resting Spring, although not in this county, being just over the boundary, is a contributor to the resources of San Bernardino, as a great portion of its business is done at the latter place. Ord District has some very promising mining claims, and actual work is being prosecuted there with good results. The Holcombe and Bear Valley gold mines are situated about forty miles by trail from the town, and are well known for their vast deposits of auriferous quartz. Within twelve miles from town are the Lytle Creek hydraulic mining workings, which have been in operation for some years, and are now being worked with good results. Placer diggings are found in many parts of the county, especially around Holcombe Valley, and a great many are engaged in this class of mining. There are several other districts of minor importance in the county, producing lead and silver ores. One of the largest deposits of tin in the world is found at Temescal, while vast quantities of asbestos, borax and other minerals are found in different parts of the county.

The principal town and county seat is San Bernardino, containing some 3,000 inhabitants. It was located and settled by the Mormons, and covers one square mile. Like all their towns, it is regularly laid out, with broad streets running north and south, east and west, intersecting each other at right angles. The blocks, each containing eight acres, are subdivided into lots of one acre each. It is thickly studded with trees, as is indeed the whole valley, which, with the bright green of the gardens and surrounding fields, give it more the appearance of a New England village than a California town. A large number of the lots have artesian wells on them, which are here sunk at a small cost. It contains a number of very creditable houses, business blocks, has good hotel accommodations, and is in all respects a modern American town. During the past year it has been visited by several heavy fires, which nearly destroyed the entire business portion; but it is now rebuilt, and a better class of buildings have taken the place of those destroyed. The buildings are mainly of brick, of which an excellent article is procurable at low figures. It has several good public buildings—Court House, school houses, theatre, etc.

The second place of importance is Riverside, twelve miles from San Bernardino, which, although quite youthful, is a thriving settlement. It is almost entirely settled by Eastern people, mostly of some means, many of whom have located there for their health; some for the pleasures of its mild climate, and some for the purpose of raising semi-tropical fruits to which the entire surrounding country is devoted. It has an air of newness; the houses are all neat and clean, gardens well kept, and everything indicative of enterprise and thrift. It has several churches, public school houses, town hall, and other public buildings.

Colton, which has sprung into existence since the advent of the Southern Pacific Railroad, derives its importance from being the depot of San Bernardino, from which place it is distant about two and a half miles. It has some very creditable buildings, the principal of which are owned by the railroad and the Colton Land and Water Company.

Old San Bernardino derives its name from the old Mission, which is located here, and which is now but a heap of ruins, is distant from San Bernardino some five miles. It is a farming settlement, and has the oldest orange groves in the county. It is more favorably located for fruit growing than any other point, being at the mouth of a cañon, from which a gentle breeze blows every night, rendering frost an almost unheard of occurrence. Its oranges are noted for their size, beauty and flavor. Like all the trees of the county the orange trees here are not affected with scale-bug or other diseases to which those nearer the coast are liable.

The land of the valley is mainly black sandy loam, getting more and more sandy as we advance toward the mountains, while the foot-hills are of a gravelly nature. This variety of soils affords opportunity for the variety of products to which they are adapted, the low damp lands of the valley being especially adapted to the cultivation of corn, which attains an enormous growth. The higher lands are the better for fruit, while the mesa lands are unsurpassed for semi-tropical fruits. The soil of Riverside is a heavy red clay, with a light admixture of sand, formed evidently from the washes of the mountains. It is especially adapted to fruit, and trees of all kinds make an astonishing growth in it. In the mountains are found many ranches, the soil of which is a heavy black loam and is used mainly for potato and apple growing, for both of which it is unsurpassed, and the potatoes and apples raised in these mountain ranches are unsurpassed in the world, and always command a much higher price than those produced in the valleys.

In price, lands vary according to location, improvements and other advantages. Good lands can be had, with water for irrigation, at $25 to $100 per acre. Upon such land two crops a year can be raised. Land without water is comparatively worthless; although in an ordinary season a crop of grain can be raised on dry land.

The Southern Pacific Railroad passes through the valley, and the Utah Southern, as projected, will in all probability intersect the S. P. R. R. near San Bernardino when completed.

This county affords good opportunities for a safe investment of capital. It has unlimited resources now lying idle for lack of means to develop them. Labor, provisions, building material and all the necessaries of life are cheap, and while it would not be wise for men entirely dependent upon their daily toil for a living to come here, those who have some means can here make a home and a living as well and as easily as in any part of the world.

SAN MATEO COUNTY.

By H. N. NUTTING, Esq.

This trig little political sub-division of the State, occupying, as it does, most of the peninsula which separates the ocean from San Francisco Bay, possesses a variety of soil, climate, productions and commercial advantages enjoyed by few localities. It is bounded on the north by San Francisco, east by the bay and Santa Clara County, south by Santa Cruz County, and west by the Pacific Ocean. It is sometimes said to be only a "big mountain," the fact that the Gabilan, Sierra Moreno, or Santa Cruz range runs the entire length of the county, giving rise to the expression. But the title is not deserved. While the mountains occupy a very important portion of the surface of the county, there is a large area of level or comparatively level land. On the eastern side, between the hills and the bay, there are the Burri Burri, San Mateo, Pulgas and El Corte Madera ranchos or grants, containing in the aggregate 69,000 acres, and of this broad area at least 40,000 acres are level or so gently rolling as to be easily cultivated through the use of all machinery employed on level lands. On the ocean side there are the Corral de Tierra, San Pedro, Miramontes, Canada Verdi, San Gregorio, Pescadero, Butano and New Year Point ranchos, containing a total of 73,000 acres, of which amount 17,000 acres are level land. Besides this there are several valleys of importance, especially the Canada Raymundo, Upper San Gregoria, Pomponia and others, containing considerable areas of excellent land comparatively level. Of the mountainous sections a very large portion is tillable, much of the surface being gently rolling, and grain growing well even to the summit of the range. A careful estimate puts one half of the mountain surface under cultivation, including the foothill region.

The county is five miles wide at the northern boundary line, where it adjoins San Francisco, but rapidly widens southerly and attains a breadth of eighteen miles at the middle. The length is 42 miles on a straight centre line, and contains an area of 292,500 acres. The shore lines on both ocean and bay are exceedingly irregular, and following all their sinuosities are about 65 miles on the ocean and 35 on the bay, or 100 miles in all.

One of the principal advantages of the county is its

WATER SUPPLY AND STREAMS,

Which are unsurpassed. As is well-known, San Francisco draws her water supply from San Mateo territory, and the excellent facilities for water, of which the Spring Valley Company have availed themselves in the northern part, exist the entire length of the mountain range in the county. Springs of excellent quality and quantity abound everywhere. The streams are numerous, and most of them run with a liberal volume of the aqueous fluid throughout the year. On the ocean side the more important are Pillarcitos, Purissima, Lobitos, Tunitas, San Gregorio, Pomponia, Pescadero, Butano, Gazos and New Year creeks, all of which carry a considerable stream, even in the dryest season, and in whose valleys are large quantities of the choicest farming lands. On the bay side streams are less numerous, the San Mateo and San Francisquita being the only ones of much importance, although there are many small ones, the heads of which are well supplied with water.

THE CLIMATE

Is quite as varied and diversified as the surface. It has been truly said that in California one may find every variety of climate, from frigid to torrid, from Sahara dryness to perpetual humidity. This assertion is well illustrated in San Mateo County, except that the extremes are not so great as above expressed. The thermal condition of the atmosphere has a remarkable equability throughout the year, but there is much difference of climate in the different localities. In the northern portion it bears some resemblance to that of the adjoining county of San Francisco, fogs and cold winds prevailing to a considerable extent during the six months from April to October. From the neighborhood of Mt. San Bruno it grows milder, and the severity of the winds is rapidly diminished until, south of Belmont, they become mild, and refreshing breezes just sufficient to prevent the interior heat known over a large area of California, rendering the climate healthy, bracing and delightful. On the ocean coast the thermometer ranges slightly lower than on the bay coast, but the climate is rather more equable, owing to oceanic influences and the fogs which prevail in Summer. Here again, the climate is very healthy, as much so as on the eastern side of the mountains, while the fogs render agriculture a more certain and reliable pursuit than along the bay, because of the consequent moisture of the atmosphere. The mountain climate differs again from that of both sections mentioned. In the Summer, dense fogs at times drench the summit in moisture nearly equal to a rain, and snow falls at intervals during most Winters, but seldom remains long upon the ground more than a few hours. Yet the climate is not unpleasant, and as healthy as anywhere in the county. There is found a belt of territory along the sides of the mountains and midway up, that is milder than above or below, where frosts in Winter and extreme heat in Summer are more rare than at a less or greater elevation, a fact that few persons have observed, and which is likely to be taken into consideration in the future by those selecting locations for country homes. The equability of the climate may be illustrated by the range of the thermometer in two localities for the various months of 1878, which must serve as samples.

AT PIGEON POINT:	Max.	Min.
January	59	44
February	59	45
March	67	47
April	68	49
May	68	53
June	67	53
July	74	55
August	68	56
September	69	57
October	66	51
November	68	50
December	64	45

AT SAN. MATEO:	Max.	Min.
January	60	41
February	54	38
March	62	44
April	63	46
May	73	50
June	76	54
July	76	53
August	77	51
September	74	55
October	75	50
November	64	40
December	59	37

These two instances, one taken at a prominent point on the ocean shore and the other at a place in the valley bordering on the bay, illustrate very clearly the character of the average temperature of the county.

THE RAINFALL

Varies about the same as the temperature, there being about the same in amount in each year as falls at other points along the middle portion of the California coast. The deposit of moisture each season is a little heavier on the ocean side of the mountains than on the other, while on the bay side it varies somewhat with each locality, as the figures of the storm of February 13th and of this season to date will show:

Place.	Feb. storm. Inches.	Total to date. Inches.
San Mateo	1.12	11.20
Menlo Park	.67	9.90

These figures were made up on the morning of the 8th ult.

In the matter of moisture for the growth of crops, the fogs along the coast cut an important figure. Heavy mists prevail a considerable portion of the time from the 1st of April until the Winter rains set in. These aid in preventing the surface from drying, and add materially to the amount of moisture deposited for the year.

THE PRODUCTIONS,

As will readily be surmised, are exceedingly varied, according to location, soil and climate. Wheat, barley and oats have always been staple crops. Of late years wheat and oats have rusted occasionally on the ocean side, while the same products have in rarer instances yielded to the same enemy on the bay shore; but they still continue to be three of the principal factors in every harvest. Potatoes have been extensively grown in the northern portion of the county, and also about Half-Moon Bay and in the San Gregorio and Pescadero Valleys. During the last four years this crop has been badly injured by blight; but whether this destruction will continue or not, remains in doubt, judging from the history of it in other sections of the country. Beans have been extensively grown, and at Pescadero the cultivation of flax has been extensively prosecuted for three years with lucrative results, the fiber not being utilized, but the seed being sold for the manufacture of oil. Corn flourishes in many parts, and most fruits do well except in those parts where the cold winds from the ocean prevail, as in a portion of the northern end of the county. Yet with all these facilities, San Mateo cannot claim distinction as a grain- or fruit-producing county. While her production of these articles might be largely increased, her proximity to San Francisco and some other reasons have caused greater attention to be paid to other pursuits. The chief of these is dairying. Extensive tracts of land are employed exclusively in this industry—lands that could be profitably devoted to grain—at Visitacion, San Bruno, Millbrae, San Mateo, Belmont and all the coast south of Pescadero Creek. Convenience of shipping along the Southern Pacific Railroad, and the excellence of the grazing resulting from the fogs along the ocean, render this a profitable business, and one of prominence in the county. These agricultural and kindred interests are in a very flourishing condition. The statistics of the County Assessor for 1878 make the following showing: Wheat, 12,000 acres, 165,000 bushels: barley, 11,000 acres, 85,000 bushels; oats, 7,000 acres, 140,000 bushels; corn, 600 acres, 12,000 bushels; beans, 500 acres, 6,500 bushels: onions, 150 acres, 6,000 bushels; potatoes, 14,000 acres, 140,000 tons; wool, 10,000 pounds; cheese, 1,000,000 pounds; butter, 250,000 pounds. The estimate of milk sold is not made, although nearly all dairies along the railroad are engaged exclusively in selling milk in the metropolis. The above figures are compiled from official sources, and aim at approximate accuracy, but will fall below the actual amounts. Beyond these agricultural productions and the lands on which they are harvested,

THE RESOURCES

Of the county are not inconsiderable. Wood is liberally supplied, and a large force and capital have been long engaged in the mountains in cutting and shipping fuel. Timber of the best quality for the purpose is abundant and in liberal quantity. The most accessible belts of timber have been nearly all cut off, but there remains a large area of fine forest awaiting improved means of shipment to render it valuable. Lumber has always been, and is now, an important industry, there being along the southern creeks some of the best redwood forests on the coast. The mining interests, although possessing indications of a promising character, have never developed any paying leads. Throughout the entire length of the mountains within the county cinnibar croppings abound, and a few limited attempts at prospecting have been made, the most extensive being the work done at the Bellevue mine, on the San Gregorio Creek. Silver ore has been found near Searsville, and the Larco and Redwood Companies have sunk shafts therefor near that town, but no success worth mentioning has been achieved, although many are still hopeful of eventually making the mines pay. Petroleum has been discovered at several points, and a well-organized and equipped company, the Alpine Oil Company, are now boring for it at Alpine, with good prospects. Iron ore is known to exist, and indications of coal abound, but neither has received any attention. Beach gold was found at various points along the coast in 1878, and was mined in paying quantities in a few places.

THE SOIL

Is mostly a light loam. In the north, it is sandy, giving that portion the local title of the "Sand Hills;" but it is, nevertheless, productive, and about Redwood City there are some 3,000 acres of adobe, which also are rich and productive lands, the balance of the cultivable lands being loam.

Shipping facilities are good, although somewhat better on the eastern than on the western side. Along the ocean the products pass over two chutes, one at Pigeon Point and one near Tunitas Creek, and over two wharves at Half-Moon Bay. Vessels find little difficulty in loading at any of those places during the dry season, but in Winter the south winds make it dangerous to approach them. Such of the products as are not sent to the metropolis by water, reach the railroad at San Mateo, an excellent road over the mountains greatly facilitating the handling of freight. Along the bay, people are highly favored with convenient methods of sending their products to market. They may take the railroad or water. The various creeks and inlets connecting with the bay afford good opportunities for landings where small craft may load. These landings occur along the entire eastern line of the county, at distances of but a few miles. This makes freights low and shipping easy.

ONE DRAWBACK,

And one which afflicts nearly every county in the State, is the ownership of large tracts of land that ought to be divided up among many persons. Along the eastern side this evil does not prevail to so great an extent as in other parts; but even here there are three owners with over 3,000 acres each, two with more than 2,000, six with 1,000 to 1,500, while about twenty own from 400 to 800 acres each. In the mountainous parts and along the coast it is even worse. Yet there are lands everywhere for sale on reasonable terms, and those seeking homes and small farms find no difficulty in obtaining what they want.

SMALL TOWNS

Are scattered throughout the county. Redwood City, the largest, contains 1,400 inhabitants; Half-Moon Bay, or Spanishtown, 900; San Mateo, 600; Pescadero, 300; Menlo Park, 200; and Colusa. Millbrae, Bellmont, Searsville, Woodside, La Honda, Purissima and San Gregorio are small hamlets. Good churches, an excellent system of public schools, good private schools, numerous societies for benevolent and other similar objects, Post Offices within easy distances, and a well-kept system of roads, all combine to give residents every convenience and advantage of civilized life. Of course the situation of the county makes it but a

SUBURB

Of San Francisco. During the last fifteen years the successful business men of the city have been making country residences here, the climate, soil, scenery, and easy access, rendering it a desirable place for such homes. Menlo Park and San Mateo have been the leading centres for such residences, but they are also found here and there along the railroad the entire length of the county.

HUMBOLDT COUNTY.

By MARSHALL FULL, Jr.

Humboldt is a coast county, situated in the northwestern part of California. It is bounded on the north by Del Norte County, which separates it from Oregon, on the east by Trinity and Siskiyou, on the south by Mendocino, and on the west by the Pacific Ocean. The area thus embraced is 2,800 square miles; the estimated population, 20,000; the assessed value of property in 1877, $5,118,757. For general small farming, dairying, stock raising and lumbering, it is not excelled by any county in the State. Its inexhaustible river bottom lands produce enormous crops of all the cereals and fruits common to the temperate zone, while its natural prairies in Mattole Valley, on Bear River Ridge and the Bald Hills abound in rich pastures for cattle and sheep. The average annual rainfall is 32 inches; the mean temperature of January, 40°; of July, 58°. Drouths and failure of crops are unknown. Pastures remain green by the influence of heavy fogs long after the Winter rains have ceased and the Southern counties scorched brown. Humboldt County has only one short railroad, and no connection of this kind with San Francisco. Communication is had by steamers plying every five days to Eureka; distance 246 miles, passage $10; or by overland stage route, opened with the metropolis in 1877; distance, 300 miles; time, three days; fare, $16.

The topographical features of Humboldt County are varied and picturesque. The surface is extremely rugged, numerous spurs of the Coast Range intersecting the county in all directions. The mountain scenery is magnificent, rising in many places to absolute grandeur. The crested peaks bristle with redwoods, spruce, fir and pine, but mainly redwood. Chestnut oak abounds in the eastern part of the county. On the bottoms willows, alder, cottonwood, maple, ash and bay wood or California laurel abound. Many of the redwoods approach nearly in size to the big trees of Calaveras Valley—one tree, near Arcata, measuring 61 feet in circumference. The rough and broken character of the county will be better appreciated when we state that of its 1,792,000 acres of area but 85,460 are enclosed, and of this only 21,016 are tilled. The farming land, with few exceptions, lies along the rivers, formed by sedimentary deposits, owing to the constant shifting of the water channel. Thousands of acres of useless river-bar thus made form a peculiar feature of Humboldt County. In short, the arable land seems more the result of chance than destiny.

The principal streams are Eel, Mad, Van Duzen, Bear, Trinity and Klamath—the latter forming the line on the north between Humboldt and Del Norte Counties. These streams are of but little utility for navigation. Eel River is navigable only a few miles from its mouth by small ocean steamers to Port Kenyon on Salt River. Frequent snoals render them all useless even for small craft, the major part of the year.

Humboldt Bay is the largest and finest on the coast save San Francisco Bay. It is twelve miles long, from two to five wide. The entrance is about a mile wide, but has breakers on either side; between them is a channel a quarter of a mile wide, with about eighteen feet of water at low tide. The entrance is dangerous, but when inside it affords secure shelter to vessels from all winds.

Trinidad Bay is seventeen miles north of Humboldt. It is a small harbor with deep water, good anchorage, and well protected from winds from all points of the compass.

The principal productions of the county are oats, potatoes, pease, butter and wool. Potatoes held the first rank until a few years ago, when the blight checked the prestige of Humboldt County for great yields of fine "spuds." In 1875 the export was 108,056 sacks, valued at $233,954 45, against 26,614 sacks, valued at $24,807 53, in 1876; later than this we have no data. The climatic conditions seem peculiarly adapted to oats, they forming our surest and most profitable crop. Yields of one hundred bushels and over to the acre are not at all uncommon on bottom land near the coast. Pease require a rich, heavy soil, and here they find the conditions to insure a good crop. This county nearly supplies the San Francisco market with pease for adulterating coffee, etc.; also fattens a large amount of pork. When ripe, the hogs are turned on the pease in the field, where they fatten quickly. It is said that one ton of pease will fatten four hogs. But little wheat is raised (nearly all her flour being imported), which did well last season, and a larger area has been sown this year. Barley yields enormous crops; the grain is plump, and the weight above an average. It is not sown for export, as prices seldom warrant it. Butter is rapidly becoming a leading article of production, it now being second to oats in value for export. Humboldt stands next to Marin as a butter producing county. The length of the dairy season, the low temperature of the Summers, the abundance of pasture, are all conducive to butter making. Cheese is manufactured to some extent. Bear River Ridge and Mattole Valley embrace the dairy region. Wool stands next to lumber in value of export. A sheep can be kept on one-fifth the ground that it requires in Southern California, and the wool brings from 30 to 50 per cent more than any on this coast, except Oregon. The wool is clear of burrs, has a fine fiber of good length. Great care has been taken in improving the stock by the importation of fine merino bucks.

Of lumber, Humboldt County has a supply of redwood, that its twelve steam saw-mills, cutting 100,000,000 feet annually, have made but little effect on as yet. In this line we also have six shingle mills and a large barrel manufactory. Pertinent to the lumber interest, we note the vast amount of chestnut oak found in the northern and eastern portions of the county. In the near future this may be developed into the proportions it has assumed near Santa Cruz. A start has been made in this direction by our two tanneries. The average of chestnut oak is roughly estimated at 15,000.

The fisheries of Humboldt County are assuming greater proportions each year. Salmon swarm in all our streams with the first winter rains. Last season a large amount of salmon were shipped fresh to San Francisco; halibut and flounders are also shipped. The Cutting Canning Company, of San Francisco, have a large cannery near the mouth of Eel River. In 1877 they shipped 3,000 cases of 4-doz. 3-lb. cans each. Sweet & Adams, in the same vicinity, salted and shipped 1,800 barrels. Dungan & Wells and others also put up and shipped large quantities. The fishing trade is but in its infancy here, and its value not fully appreciated until last year. Henceforth we may expect an increase of salmon canning in Humboldt County.

Below we give a tabulated statement of the exports of Humboldt County, taken from the *Times'*

pamphlet for the year 1876, ending June 30, 1877, this being the latest data we have at hand:

Pkgs.	Kind.	Weight.	Gross Proceeds.
26,614	sks. potatoes	3,189,620	$ 24,807 52
9,518	pkgs. wool	1,551,080	368,053 00
31,357	sks. oats	4,232,185	85,356 26
2,953	sks. peas	65,500	1,340 02
458	sks. wheat	65,580	1,350 03
713	bxs. fish	140,600	8,436 00
83	rolls leather	16,400	5,290 00
1,427	pkgs. butter	115,014	34,504 50
	Apples	Nominal.	
590	hgs	11,800	7,670 00
251	bxs. bacon	78,300	9,787 00
102	kgs. lard	15,810	1,976 25
	Pork	Nominal.	
234	pkgs. deer skins	14,040	3,088 80
43	bxs. hams	12,900	1,672 00
2,764	hf. bbls. salmon	276,300	10,662 00
55	bxs. eggs	1,650 dz.	495 00
15	bxs. furs	.....	1,500 00
77,795		10,170,870	$572,240 19

The important towns of Humboldt County are Eureka, Arcata, Ferndale, Rohnerville, Trinidad, Hydesville, Table Bluff, Petrolia, Springville, Blocksburg and Garberville. The first six in a descending scale are the largest.

Eureka, the county seat and seaport, is the principal town or city. It is situated on the eastern shore of Humboldt Bay, on an eligible site, and has plenty of room for expansion. The population is about 5,000. The city is regularly laid off; its inhabitants are noted for looking a long time before they leap. There are two good hotels and several not so high-priced, a library and public reading-room, seven public schools, Humboldt Young Ladies' Seminary (Protestant), St. Joseph's Institute (Catholic), five churches, and secret Orders of various kinds are well represented. The *Times*, *Signal* and *Standard* are published daily and weekly. There are some commodious business houses, which, with the schools, churches, halls, etc., display some architectural design. The material used is mainly wood, but brick is beginning to be used in building to some extent. Considerable mercantile business is done, but the main resource of the city is in manufacturing lumber, shingles, etc., there being seven steam sawmills and several shingle mills within the city limits. Quite a number of schooners have been built on the bay, which are engaged in carrying lumber to southern ports and the Pacific Islands. Humboldt Bay has as fine a location for shipyards as can be found on the coast, while the timber in the vicinity of the bay is well adapted for ship-building purposes, ranking next to oak, and superior to Oregon pine. Two steamers make weekly trips to San Francisco, placing her within twenty hours of the Capital. Telegraphic communication is also had to all points of the county and the world.

Arcata is situated at the northern end of the bay, seven miles by water and twelve by land from Eureka. Arcata is the second town in size, having over 1,000 population. It enjoys a large trade from a large farming community in the vicinity of the town, and is the depot of supplies for the gold diggings on Klamath and Trinity rivers. Among other establishments Arcata has a tannery, two steam saw-mills, a flouring mill, and a shingle mill. There are three churches, three public schools, a public reading-room and circulating library. The people of Arcata are enterprising and evince a lively interest in progress and advancement.

Ferndale and Rohnerville rank as third and fourth towns in importance. Ferndale has a weekly paper titled the *Enterprise*. Rohnerville has recently started a small sheet ycleped the *News*. These are both thriving little towns, have good locations, are supplied with water by water works, and each has a goodly number of stores, first-class schools, churches, etc. St. Joseph's College, in the suburbs of Rohnerville, stands on a high bluff overlooking Eel River Valley. Port Kenyon, near Ferndale, and Hookton, near Table Bluff, are the principal shipping points for produce, etc.

In this necessarily condensed article we have but given the outlines of Humboldt County and her resources, but it will suffice to exhibit her great natural advantages for small and profitable farming, dairying and stock-raising. The climate is equable and genial, with sufficient fog near the coast to prolong the green pasture; further inland, among the mountains, fogs are infrequent, the air is lighter, and the temperature higher in Summer and lower in Winter. Apples, pears, plums and cherries grow to remarkable size and perfection throughout the valleys a few miles from the coast. Peaches and melons of good flavor are raised at Camp Grant, about fifty miles from the sea. All small fruits and berries do well anywhere in the county. The vine is not planted, although it would thrive, we think, if placed in warm and sheltered situations in the mountains and foothills. Corn is raised in Mattole Valley and in the mountain valleys as a crop. Vegetables of all classes grow to a wonderful size in all portions of the county, but come to market later than in the southern counties. Well improved farms can be purchased for $50 and less an acre, stock and dairy ranges at very low figures. Large tracts of unsurveyed land still remain open, but about all eligible Government lands, except timber claims, have been entered. The principal farming lands are in the vicinity of Eureka, Arcata, Ferndale, Rohnerville and Hydesville, embracing Eel River Valley and the "Island"—a term applied to a portion of land surrounded by Eel and Salt Rivers, adjacent to the coast. Mattole Valley and Bear River Ridge constitute the dairying region mainly, the Bald Hills in the eastern part of the country being almost exclusively devoted to cattle and sheep.

In conclusion, without being enthusiastic, for the limited capitalist Humboldt County offers a home in proportion to his means and taste, where from the least land she will assure him the greatest range of products and a larger yield without irrigation than any other in the State.

Placer mining is followed with some degree of success on the Klamath and Trinity Rivers, but gold digging is of nominal importance in California now, and they keep the noiseless tenor of their way.

TUOLUMNE COUNTY.

By H. WOLFE.

Tuolumne County is situated on the western slope of the Sierra Nevada range of mountains, between the parallels of 37° 40′ and 38° 20′. A line drawn due east from San Francisco would cross the southernmost limit of that county, and is distant from that city 150 miles; means of conveyance, three miles by steamer, 119 by rail, and 28 by stage. Tuolumne, strictly speaking, is a mountain county. It is bounded on the north by Alpine, east by Mono County, south by Mariposa County, and west by Stanislaus and Calaveras counties. Its established boundary lines are of such varied angles and so great a divergence from the four cardinal points that the territory it embraces takes the form of an irregular polygon. Tracing its boundary lines, commencing with the eastern, at Mt. Lydell, it traverses the crest of the Sierra Mountains to Castle Peak, a distance of 40 miles; thence the northern boundary line, west 45 miles, to the north tributary of the Stanislaus River; thence its western line, 50 miles south, following the course of that stream to its junction with the main, and the main to a point five miles above Knight's Ferry; thence southerly 20 miles, to the Tuolumne River. Leaving this point its southern boundary corresponds nearly with the 37th parallel a distance of 60 miles east, though very irregular; thence in a southeasterly direction, 25 miles, to the place of beginning, which forms an arm extending south 20 miles, varying in width from eight to ten miles. The county has an area of about 2,000 square miles.

The character of the soil may be understood to be hilly and mountainous on the whole, which renders a variety of scenery the picturesqueness of which opens up a broad field for the admirers of the grand and sublime. The soil on the hillsides, mountain slopes, and the parallel chains of small valleys along the many water-courses throughout the county, is very productive; the valleys particularly produce a luxuriant growth of nutritious native grasses, and, together with the rich verdure of the gentle slopes and table lands, furnishes pasturage during the Summer and Fall months for 150,000 head of migratory stock—horned cattle, sheep and horses—which are driven from the lower or valley counties. This advantage, with many equally as promising, and the salubriousness of the climate, renders every condition favorable to those who seek permanent homes in the interior. The temperature is quite equable, considering the geographical bearings of the county, never falling below 20°, excepting in the more elevated portions, or rising above 95° Fahr., unless in exceptional seasons. Mining may be said to be the predominating interest, though many other enterprises are gradually springing up, a number of which bid fair at no distant day to assume gigantic proportions, such as the timbering, fruit and marble interests.

POPULATION—PRINCIPAL TOWNS; THEIR MANUFACTORIES, ETC.

According to United States census of 1880, Tuolumne County comprised a population of 7,848. This showed a falling off of a heavy percentage of the population from 1860. The leading interest being that of mining, the cause of so great a decrease in population during so short a period needs no explanation when it is known the mining class make up the rank and file of what is termed the floating population of the state.

The principal towns are Sonora, Columbia and Chinese Camp. Sonora, the county seat, is situated on the left bank of Woods Creek, in the southwestern part of the county, eight miles from the west boundary line and twenty miles from the south line, and is a thriving town of 1,400 inhabitants. It has one foundry, in which boilers, engines and machinery for quartz and saw-mills of a first-class grade are manufactured, supplying, to a great extent, the local demand; also, two planing-mills, one large fruit-preserving and canning establishment in connection with an "Alden Drier," and two flouring-mills. In a commercial point of view it is making rapid strides towards becoming a mountain city of considerable importance. Its mines, so far as relates to placers, may be classed with things of the eventful past, though Sonora mining district was one of the richest and most prosperous mining camps of the southern mines. There are a number of quartz mines in the vicinity in successful operation which yield largely, paying good dividends to the stockholders, and promising greater permanency as developments made from time to time prove.

Next in size and commercial importance is the town of Columbia, four miles north of the county seat, which is a prosperous town of 1,250 inhabitants. The town site embraces what was originally the richest mining camp of all the southern mines. Though placers are rapidly being exhausted, it still maintains place in the list of thriving mining camps. The yearly product of the mines in the district is of no inconsiderable amount. It forms the principle source of revenue, though not entirely dependent on its mines. As it may here be remarked that many of the industrious miners in later years having turned their attention to the opening out of new enterprises, add greatly thereby to the maintenance of a floating cash capital necessary to all the requirements of local trade. The manufactories are meager, literally speaking, yet gradually assuming shape. There is one planing mill and box factory, a flouring mill, a marble mill, and also one fruit-drying establishment. These may be said to comprise all the industries under the head of manufacturing. The undeveloped natural resources in the immediate vicinity of the town are immense. Marble, limestone, soapstone, plumbago, and other valuable minerals and stones, abound in inexhaustible quantities. With increased facilities for transportation, its productions would in time place it in the front rank as a commercial point with the leading mountain towns. Chinese Camp, eight miles southeasterly from the county seat, is a thrifty place of about 400 inhabitants, and is centrally located, relative to the placers embraced within the county.

Its mining interest, in a local sense, is of but little importance at this late day, though in the earlier period its mines were quite extensive and extremely rich, and contributed much to the wealth and prosperity of the county, Chinese camp, like all the large mining towns, has been compelled to seek other channels as a source of revenue other than its mines, which are in greater part or wholly exhausted of their wealth; consequently its people are engaged in a diversified system of farming, fruit raising, and the production of live stock, hogs, cattle, etc., to which every surrounding condition of climate, soil and other advantages necessary to the success of such enterprises, is admirably adapted. Easterly of Chinese Camp, and fifteen miles from the county seat, is Big Oak Flat and the Garote districts, which embraced in their limits rich and extensive mines, which yielded immensely in early days. Farming has become the predominating interest of the people of that section of the county.

As the principal towns within the county have been reviewed in the foregoing, all of which are

situated in the western part, throughout the mining districts, which districts embrace in the aggregate about one-fourth its area, and comprise nearly or quite the total population, I will pass to a general review of its principal interests in farming, horticulture, etc., its natural resources and the grandeur of its landscape sceneries, and many other attractions.

ITS LANDS CLASSIFIED.

To more fully describe, and also that the reader may be guided in comprehending the character of the land surface in general, it is proposed to divide the county into three grand divisions—mineral, agricultural and waste lands; yet the land throughout the county, strictly speaking, may be said to be more or less mineral in character. Let it be understood in this classifying that the vast forest lands which extend the entire breadth of the county is included in that classed as agricultural.

MINES AND MINING.

Its principal interest in mining is that branch of mining termed quartz mining. Of quartz there are a great number of valuable mines throughout the county, many of which have been continuously worked for the past twenty years, and continue to pay well—also indicate permanency. Of these we will name the principal mines, commencing with the celebrated mines at Sulsbyville—the Confidence mine, the Excelsior mine, the Riverside mine, the Buchanan mine, the Golden Gate mine, and Santa Monica mine. With these there are many valuable mines more recently discovered, which are being successfully worked, the product of which, on the whole, add greatly to the revenue of the county. A network of quartz veins thread the granite and slate ranges, hundreds of which remain to be prospected. And among those that are being worked, but few, if any, are fully developed; therefore, quartz mining in Tuolumne is yet in its infancy. There are ten quartz mills in the county which may be said to be in continuous operation.

PLACERS AND PLACER MINING.

What is termed by the miners surface or shallow diggings, those which were formed by surface work of a more recent period, wherein the gold-bearing sand and gravel were deposited in the bed of gulches, ravines, flats and small valleys, are quite exhausted, in consequence of which attention is directed to the development of the more extensive gravel deposits in the hill and along the water courses, called deep diggings. Also the exploration and development of the ancient river beds, the channels of which were filled up with volcanic deposits to the depth of 200 to 400 feet, during the period of volcanic disturbances. Of these ancient river beds, which lie beneath the basaltive rocks, there are a number of parallel chains which traverses the county from northeast to southwest, in their aggregate a hundred miles in length. In all there has not been more than ten miles of these channels worked, including in this estimate that which has or is being prospected. Some parts of these channels, which have already been opened out, have proved extremely rich. The great drawback to the rapid development of these extensive gold-bearing sands and gravel is, and always has been, a lack of capital, as the opening out of these mines necessitates a great outlay before realizing any returns therefrom. As evidence of the great importance the mining interest is to the county as its principal source of revenue, the following exhibit of the product of the mines for the year ending January 1, 1879, shows—which statement is derived from the aggregate amount from all the reliable sources—$1,019,361 84.

SLATE, LIMESTONE, MARBLE.

There abounds an inexhaustible quantity of marble, the character of which is found superior to the imported for monumental and building purposes. Limestone of a superior quality abounds in many localities in the western part of the county. Slate exists in unlimited quantities, which is quite extensively used for building purposes, flagstones, etc. There are a number of plumbago mines in process of development.

FRUIT AND FARMING.

Fruit raising, to which the soil is admirably adapted, is one of the growing interests of the county. Semi-tropical fruits of every variety and vines are cultivated, which yield abundance of highly flavored fruit. The almond and walnut are quite extensively cultivated, and with encouraging results. Among the vines the muscat or raisin grape is coming into favor with our viniculturists. They yield largely, and the fruit is of an extraordinary size. This branch of industry, the raising of fruit, will at no distant day stand first of the productions of the soil. There is a diversified system of farming carried on, which in every particular proves profitable. There being but a small part of the arable lands under cultivation, the farm products, therefore, are equal only to the demand for home consumption.

FORESTS AND LUMBERING INTEREST.

The timber belt of the Sierras is about centrally located with reference to the east and western boundary lines of the county, and extends the entire breadth—is consequently fifty miles in length and twenty-five miles wide, of the most valuable pine, fur and cedar timber, all of which can be made available through the V flume system of transporting lumber over an uneven country. In the western outskirts of this forest region there are four sawmills in operation during the Summer months, manufacturing in the aggregate 5,000,000 feet of merchantable lumber. The lumbering interest may be said to not have a commencement, comparatively speaking, in consideration of the enormity and almost unlimited extent of the great natural resource, which is within the reach of enterprising capitalists. The exports of the county are fruit, lumber, and marble.

LANDS OPEN TO SETTLEMENT.

There are over 500,000 acres of land which remain open to settlement, valuable for its timber and agricultural purposes.

This does not include the many rich alluvial valleys along the water-courses, containing 100 and upward of 1,000 acres each, which lands are comprised in that division classed as waste lands. Yet these waste lands are utilized in greater part for grazing purposes, furnishing Summer range for thousands of cattle, sheep and horses.

It is but a few years back that people commenced to make permanent settlement, and now elegant mansions and more substantial dwellings are fast taking the place of the rude structures of early days.

RIVERS AND CANALS.

Its rivers are the Stanislaus and Tuolumne, which form tributaries of the San Joaquin. The Tuolumne has its source entirely within the limits of the county, and may be justly termed the river of a thousand lakelets, although a number of which strictly come under the head of lakes, the larger being from one-half to two miles in length. The main or principal branch of the river flows through the Hatch Hatchee Valley, which is situated fifty miles east of the county seat. This branch, with its many tributaries, commands about three-fourths of the entire water-shed of the county, though its main sources are in the eastern part of the county, which the many lakes in that locality give rise to.

The Stanislaus River flows through the northwestern part of the county, and with one of its tributaries forming the west boundary line. From the south fork of this stream the Tuolumne County Water Company's canal receives its supply of water, which is conducted through a system of ditches, flumes and iron pipes a distance of twenty miles, and thence through the distributing ditches and flumes to all the important points in the county, for mining, manufacturing and irrigating purposes. This is one of the most important enterprises in the county, and is the crowning

results of perseverance, energy and capital combined. The construction of this aqueduct cost, in all its details, close to half a million of dollars; yet, notwithstanding this great outlay, it has proved in every instance a success. The benefits the county derives from this source is beyond computation. Its perpetual maintenance, therefore, is indispensable to the material interest and future prosperity of the country.

Lake Elnor, the largest of the group of lakes previously mentioned, and which forms one of the principal sources of the Tuolumne River, is situated in a valley four miles long and averaging one and a half miles in width. The land bordering on the lake is of a rich, sandy loam, producing a luxurious growth of native grasses.

A portion of this valley is well wooded, and the gentle slopes and ridges on both sides are covered with a giant growth of pines and firs. The valley, with its unequalled advantages, is rapidly gaining favor with the seekers of health and pleasure; also, for its varied sceneries, climate, etc. The waters of the lake were stocked, through private enterprise, with speckled trout, three years ago, and now it abounds with this excellent variety of fish—weighing from one to six pounds. The other lakes belonging to the group are entirely destitute of every variety of fish whatever, although their every condition is favorable to trout culture.

GRANDEUR OF ITS NATURAL SCENERY.

Tuolumne presents more rare and interesting landscape scenery, and a greater variety of natural wonders and objects of curiosity, than any one county in this State. In fact, its scenery compares favorably with that met with in Switzerland, as described by many writers. There are a number of lakes, with their crystal waters and surroundings, presenting sceneries that are extremely grand and romantic. Pyramid-like mountains, which rear their lofty peaks far above the lakes; its rivers, with their cascades and cataract, and their meanderings through the picturesque gorges and the many little valleys, make up a panorama worthy the study of the artist. The grandest of all its many natural wonders is Hatch Hatchee Valley. This valley, in most every particular, equals the far-famed Yo Semite Valley of Mariposa County. It stands at least second in point of importance in natural wonders of the Pacific States.

Next, its big trees, *"sequoia gigantia,"* of which it has two groves. The first, or larger, is situated on the Stanislaus River, in the northwestern part of the county, the other on the Tuolumne River, near the southern boundary. The former contains a greater number of big trees, of the species above named, than any known grove—and in fact contains as many as all the groves combined. Furthermore, are not excelled in respect to size and hight by those of any other grove. These, together with other great wonders, and lastly the mammoth cave lately discovered, entitle Tuolumne to a place first in the list of counties of wondrous wonders. The reason these important points of attraction have not become widely known, is because of their removed distances from the routes of travel, and so situated that they are not accessible through means of any conveyance, excepting on horseback, over a rough, mountainous trail, consequently but few sight-seers visit them, and those few are, generally speaking, residents of the county. Notwithstanding the unevenness of the country lying between these important places, wagon roads could be made with easy grades, and without encountering any obstacles but could be readily surmounted.

KERN COUNTY.

Kern is one of the largest counties in the State, and was formed in 1866 from a portion of Tulare on the north and a part of Los Angeles County on the south. A large portion of this county is adapted to agriculture, and the remainder to stock-raising and mining. The irrigating facilities are probably superior to any in the State, Kern River furnishing a never-failing supply of water, which is well distributed through the valley, and even in the dryest season there are no fears to be entertained.

KERN VALLEY,

Through which the river flows, is a large and excellent body of agricultural land. Here all kinds of grain is grown, and a great deal of attention is paid to the cultivation of alfalfa, one of the most profitable crops that can be planted. From four to eight tons of alfalfa hay per year is cut from the acre, and is readily sold at from six to twelve dollars per ton. Alfalfa is one of the greatest forage plants known. All kinds of stock and poultry feed on it, and bees are fond of the blossom. One acre of alfalfa will support, during the Summer, three cows, or twelve sheep. In the Eastern States about three acres of pasturage are required for pasturing one cow, but where alfalfa is grown, as in Kern, nine head of cows can be supported on the same amount of land. Alfalfa gives no trouble, after planting, needs very little water, and never dies out.

Wheat and barley are grown extensively in the valley, and fifty bushels of grain to the acre is about an average. Corn, potatoes, etc., are also profitable crops. The valley has made a reputation for products such as alfalfa, corn, wheat, barley, hops, apples, pears, peaches, grapes, figs, etc. Sweet potatoes grow to the largest size here. Dr. Stockton, who has a farm a few miles south of Bakersfield, often has specimens weighing fifteen pounds, and only a short time ago he had three weighing, respectively, twenty, twenty-two, and twenty-two and a half pounds. In one instance, 140 bushels of corn to the acre is said to have been produced.

Experiments in artesian wells have proved very successful, as quite a number of them go to show.

LARGE FARMS.

The largest farm in the valley is owned by Haggin & Carr, and the next in size is that of H. P. Livermore, of San Francisco. The Haggin & Carr property covers a large extent of country, and is highly improved and thoroughly cultivated. The

LIVERMORE FARM

Was commenced about four years ago, and contains about 7,200 acres of land, well fenced, and under a complete system of irrigation. It has about thirty-five miles of fencing, and about 100 miles of irrigating ditches. Two thousand five hundred acres are planted in alfalfa, fifty acres in orchard, about 2,000 acres are annually sown in grain, and the balance in miscellaneous grain. There are two artesian wells on this farm.

The semi-tropical fruits, including the orange, lemon, lime, banana, etc., have been tested here, and with the most satisfactory results, though the unprecedented cold of the present Winter has materially damaged the young trees.

Some Portuguese farmers who came into this valley last Spring have made an excellent showing. Most of them commenced with little or no capital, renting land from Haggin and Carr, who furnished them with teams and feed. One of these men raised 3,400 sacks of grain, besides a large crop of corn and beans. He accomplished all by his own unaided exertions.

CULTIVATION.

Every crop has its season. If planted the right time and properly cared for a full yield may be expected, not otherwise. The warm season is so long here that all ordinary crops mature planted over a space of several months. As one illustration, Indian corn is usually planted on ground from which a crop of barley or wheat has just

been removed, but the average yield is not more than sixty bushels to the acre. If planted in season, about the first of April, twice that may be looked for. Poor results follow the too prevalent practice of regulating the time of planting by the possibility of the ripening before the rainy season commences. The best part of the growing season is the early part. The sowings of wheat and barley should be complete by the first of December. No more irrigation will be required, and the yield will not be far from sixty bushels to the acre, more or less. Wheat is a profitable crop, and the grower is given special rates of transportation over the railroad to San Francisco. The best crop of barley raised last year was sown in November, fifteen pounds of seed used to the acre, and not irrigated either before or after sowing.

COLONIZATION.

Steps have been taken to colonize a tract of land south of Bakersfield, and special inducements are offered to immigrants. The lands offered are as good as the valley boasts. Pamphlets have been published, and any person desirous of learning of the proposed colony can get information by addressing C. Brower, Bakersfield.

THE MINING INTERESTS

Throughout the mining regions are in a flourishing condition, and some fine mines are paying handsomely. Kern County has some excellent quartz-bearing mines, the most valuable of which are located at Kernville, and the Sumner mine at that place has a large mill, one of the most costly in the State. Hon. J. P. Jones, of Nevada, owns some claims at Havilah, which are said to be valuable, but little or no work is being done by him at present. A few placer mines are being worked in different portions of the county, and some parties are making money on placer mines. The most important towns of the county are Bakersfield, Kernville, Tehachapi, Sumner and Havilah.

BAKERSFIELD,

The county seat, has a population of about 1,500, and is situated in Kern Valley, on the line of the S. P. R. R., and is about one mile from Kern River. There are in Bakersfield a beautiful Court House, which was built about two years ago, at a cost of about $40,000, and a school house, which was completed during the last year at a cost of about $10,000. There are two newspapers here, the *Courier-Californian* and the *Gazette*. There is talk of a narrow-gauge railroad or a navigable canal being built from Bakersfield to tide water, which would be a great convenience and assistance to the people who have produce to ship and freight to bring in. The railroad at present charges such rates for freight that there is very little margin for the farmer who sends grain to market.

The following extracts, taken from the *Courier-Californian*, will be of interest:

THE LUMBER INTERESTS

Of Kern County are not to be overlooked in this brief review of her resources. The immense sugar pine forests of the Greenhorn Mountains and other spurs of the Sierra are of vast importance, and the question of cheap and adequate transportation from the pinery to the valley is now engaging the thoughtful attention of capitalists. The construction of a flume down Kern River is a project that has long been contemplated, and seems to be not only practicable but easy, and certainly the inducements of pecuniary advantages to be derived from such an enterprise appear almost irresistible. Rough lumber, per rail, delivered at Bakersfield depot, costs $25 per M, while it is probable that the superior sugar pine could be flumed down for $18 to $20 per M, and a princely profit realized at that. There are two mills now running on the Greenhorn Mountain, supplying Kernville and the mountain settlements generally with lumber. These mills furnish nearly all the lumber for the Darwin mines, in Inyo County, nearly a hundred miles east. Another, on the other side, supplies Linn's Valley, and a fourth, in the San Emidio Mountains, furnishes the southern part of the county with lumber.

IMMIGRATION.

A table compiled and published a short time since contains some interesting facts in connection with the immigration to this State during the past five years. By that table it appears that the ratio of increase in population has been greater in the San Joaquin Valley than in any other portion of the State, and that of the four southern counties through which the valley extends, namely, Merced, Fresno, Tulare and Kern, by far the largest percentage of increase is apparent, in Kern County. The increase for the half decade ending now is represented as follows: Merced, 133; Fresno, 78; Tulare, 107; and Kern, 151 per cent. Aside from these, the two coast counties, Santa Barbara and Los Angeles, show gains respectively of 110 and 90 per cent. The remaining southern counties constituting the Fourth Congressional District, show an increase ranging from 6 to 49 per cent. The tide of immigration has been steadily pouring into Santa Barbara and Los Angeles Counties during the whole of that time, but has been on a diminished rather than an augmented scale for the last two years, while it is only during the latter period that it has ever reached Kern County at all. Virtually, then, the increase in Kern County for the last two years has been at the annual rate of 75 per cent. Remarkable as this is, we confidently expect to see it surpassed in the succeeding years. It took a long time to find us out, and it took much hardship, expense and time to reach us afterward till the railroad came and opened the gates of the valley. The coast counties were easily reached by sea, but Kern County, locked in the interior, was the "ultima thule," rarely heard of and never sought. But the blockade is raised and the Kern Valley is a great reservoir into which may roll the tide of population for years, and still there will be room. Ten thousand farms wait but for the hand of intelligent industry to blossom into as many charming homes. From the far and frozen North, from the depleted and fed-out East, from the devastated South, and from the locust-stricken plains of the West, they come to share our blessings and assist us in developing the richest of the inland empire which we call Kern County. And they will continue to come as long as we can sell them lands for $25 to $30 per acre superior in every point of view to those for which they must pay four times as much in the coast counties.

A SETTLER'S EXPERIENCE.

Three years ago Dr. J. Stockton, an intelligent agriculturist, came to the valley, after losing $12,000 in farming in Sonoma County on account of drouth, and located on a piece of Government land near Kern Lake. But though bankrupt in purse he still had a large balance in his favor in energy and industry. He soon established himself and made a home for his large family, and is now the possessor of three-quarters of section 30, township 27 south, range 21 east, as may be seen by consulting the map. He has some land in alfalfa which yields eight to nine tons of hay during the season besides pasturage. Wheat and barley gave him an average of forty bushels to the acre; sweet potatoes yield ten to fifteen tons to the acre. Some of these potatoes grow to prodigious size. A few specimens were brought to town a few days ago and may be seen at this office. There are six of them, and they resemble in appearance pumpkins more than anything else. The smallest weighs eighteen pounds and largest twenty-two and a half pounds. These are not yams, but thoroughbred sweet potatoes of the Ocean Queen variety. A manufactory for the purpose of making sugar from the sweet potato has been seriously contemplated, and there is no doubt it would prove a profitable investment. For fattening hogs also there is nothing that can excel the sweet potato. The doctor is full of resources, and this year himself possessed of an enormous quantity of water melons, he determined to reduce them to syrup. It took eight gallons of melon juice to make one gallon of syrup. He has made this year one hun-

dred and twenty-five gallons of excellent syrup. He regards this the best place to be found anywhere for raising poultry of all kinds. Fowls are free from the diseases

TEMPERATURE AND CLIMATE.

A reference to the geographical position of Kern County will indicate at once to the thoughtful the general character of the climate. The temperature of the valley in Winter rarely reaches the freezing point; in Summer the mercury not unfrequently marks a hundred degrees. It is universally remarked, however, especially by those recently from the Eastern States, that the heat does not appear to be nearly so great here at a hundred as it does there at eighty-five degrees. This is susceptible of easy explanation. One reason lies in the vast amount of evaporation that is constantly going on here, and another in the fact that a never-failing breeze prevails throughout the Summer. This breeze travels all the way up the valley from the sea, and no doubt the great body of water lying partly within our northern boundary, called Tulare Lake, and over which it directly passes, has much to do in equalizing its temperature by the time it reaches the lower and more central parts of the valley. Reference is here had especially to the valley of Kern River, as constituting the most flourishing and populous portion of the county. The nights, from the causes already cited, are deliciously cool and pleasant; no matter how great the heat of the day has been, it will always be found comfortable to sleep under one pair of blankets. In the foot-hills, at a slight elevation above the plains, there is what is known as the warm belt. Here the air is warm and dry to a remarkable degree, and such is the purity of the atmosphere that fresh meat upon exposure will dry up but will not putrefy. Being perfectly screened by the Coast Range from the sea-fogs that prevail along our sister coast counties, and also from harsh winds, the climate of Kern County is justly regarded as one of the finest in the world, especially for persons suffering from pulmonary and kindred affections. Numerous instances can be cited of persons who have come here in apparently the last stages of consumption, who can to-day testify to the efficacy of the climate in restoring them to the most robust and vigorous health. The air of the mountains is of course more bracing and invigorating, and is laden with the rich balsamic odors of the pine and fir that clothe their rugged sides.

CONTRA COSTA COUNTY.

By J. P. ABBOTT, *Editor of the* ANTIOCH LEDGER.

Perhaps the capabilities, resources and proable future developments of Contra Costa have been less written about, and are more imperfectly understood than most of the fifty-two counties comprising the State of California; certainly of those bordering on the bay, and so near San Francisco, the metropolis and great commercial centre. Until 1878 there was no communication by rail with adjoining counties. The traveller by river steamer caught no glimpses of our cosey valleys, teeming with the vine, the olive and the orange; our broad, fertile plains, rich with golden grain, or the wealth of coal imbedded in the foothills of old Diablo. Now hundreds of people daily pass over the seventy miles of road within the county limits.

ITS LOCATION.

Contra Costa is bounded on the north by San Joaquin River, Suisun Bay, Straits of Carquinez and San Pablo Bay; east by San Joaquin County; south by Alameda County; west by Alameda County and San Francisco Bay. It will thus be observed that our geographical position is a most desirable one, being about midway of the coast line of the State, fronting the Golden Gate, and with a water frontage of seventy miles on the western and northern border. The county was organized in 1850. It contains seven hundred and fifty square miles of territory, or 444,491 acres, of which about two hundred thousand are cultivated, the remainder being grazing and waste land. Across the county, extending in a southeasterly and northwesterly direction, parallel with the coast, the second great and distinct range of mountains, forms a natural dividing line between the eastern and western sections. The distinguishing features of this range is Mount Diablo, standing boldly 3,896 feet in height, towering above all the peaks and being very near the geographical centre of the county. Its prominence caused it to be selected by the Government as the initial point of base and meridian lines in the survey for nearly two-thirds of the State area. Two wagon roads of easy grade lead to its summit, visited annually by thousands of tourists. The panoramic view is grand and sweeping. Villages, towns, cities, bays, rivers and the blue waters of the Pacific are seen for a distance of one hundred miles. The streets of San Francisco, with the hurrying to and fro of its ceaseless throng, are plainly visible, while to the north and east, are seen the quiet valley-homes of the industrial classes.

CLIMATE.

As in most counties of our State, so here, one may find a diversity in climate. Generally speaking, it may be regarded as a happy medium between the chilling fogs of San Francisco and the enervating heat of the interior valleys. The afternoon westerly trade winds, blowing fresh from the ocean, are modulated by the warmer inland air currents, rendering our climate delightful, subject neither to the extremes of heat nor cold. In Summer the mercury ranges from 75 to 90 degrees; in Winter from 40 to 70, with a few exceptional warmer or colder days. The season is divided into the wet and dry. From May to November there is constant sunshine; but the gentle ocean breeze stimulates the out-door laborer, and invites the invalid to prolong his rambles even to a late evening hour. The hot, sultry nights of the Atlantic Coast are unknown, and Californians can justly boast of being the soundest sleepers on the globe. There is no healthier county in the State. Contagious diseases and the many ills of childhood find no abiding place here. A physician of thirty years' practice states, without fear of successful contradiction, that children born in this county are more vigorous, better developed physically, and freer from the pests of vermin, scabies and eruptions of babyhood than in any other part of the State.

FARMING LANDS.

The central valley of the county is about fifteen miles in length and six miles in width, extending from Suisun Bay southward to the Diablo foothills. The various names of Pacheco, Ygnacio, Diablo and Walnut Creek are applied to this fertile section, which yields bounteously of cereals and fruits. The soil is rich, and farmers rarely fail to fill their granaries. The little valley of San Ramon, extending from Walnut Creek to the Alameda line, is about ten miles long and from one to two miles wide. It contains some of the

pleasantest homes and wealthiest farmers of the county. Among the hills in the western part of the county are San Pablo, Pinole, Briones, Rodeo, Tajiar and Alhambra valleys, all dotted with happy homes surrounded with the vine and the orange, denoting evidence of thrift and industry. The farming lands in the eastern section of the county extend from Bay Point, a spur of Diablo, east, and between the foothills and San Joaquin River to the county line, being twenty-three miles in length by from three to six in width, and embracing about sixty thousand acres of arable land. In this tract are the well-known Los Medanos and Los Meganos Spanish grants, the former owned by L. L. Robinson, the latter, better known as the Marsh Grant, by the Clay Street Bank. This land is a rich, alluvial soil, and produces large crops of wheat and barley. To the northward, and between the upland and San Joaquin River, are some 50,000 acres of tule land. Vast sums of money have been expended in the work of reclamation, and corresponding benefits will be realized in coming years. This land is marvellously productive, the soil is practically inexhaustible, and when made secure from the effects of floods and freshets, by substantial levees, will become the most valuable farming district in the county. Thousands of acres have been leased to Chinamen the present season for a term of years, they paying an annual rental of from $12 to $20 per acre. Although yielding from thirty to eighty bushels of grain per acre, the Mongolian prefers to grow vegetables almost exclusively, and realizes a handsome margin from his patient industry over and above the extravagant price demanded for rent.

RESOURCES.

With the exception of coal mining Contra Costa is mainly an agricultural county. Her exports are wheat, barley, oats, rye, hay, vegetables, fruit and coal. All the valleys yield remunerative crops of cereals, and as stated above, the reclaimed land is peculiarly adapted to raising vegetables, especially potatoes, which grow to great size and perfection. But little corn is grown, though some of the smaller valleys in the western portion of the county produce average crops.

OUR COAL MINES.

The coal measures of the Diablo foothills are an important source of wealth to the county. The towns of Nortonville, Somersville and Judsonville have been built up from and are entirely dependent upon this interest. Antioch has also been largely benefited by the development of this industry. These mines were discovered in 1859 by William C. Israel, Francis Somers and James T. Cruikshank, the two latter having discovered the well-known Black Diamond vein, which, for nearly twenty years, has yielded of its treasure to the never-tiring pick of the miner, filling the coffers of the fortunate owners with gold, affording employment and support to hundreds of worthy citizens with their families, and adding to wealth of the county and State. A railroad extends from the mines to Black Diamond Landing, at the head of Suisun Bay, a distance of six miles from transportation of coal to deep water. The Pittsburg and Union mines, at Somersville, one mile east of Nortonville, also ship their coal products over a road of six miles in length, extending from Somersville to Pittsburg Landing. Two miles eastward is located the Central mine, profitably worked for several years, but which is at present idle. Next comes the Empire, owned by Judson, Belshan & Rouse. This mine was opened in 1876. A narrow gauge railroad was built in 1878, from the mine to the town of Antioch, five miles distant, and large quantities of coal are daily shipped to various parts of the State. Besides these, are the Brentwood, Corcoran, Teutonia and other mines, which have been only partially developed, but which will doubtless prove to be equally valuable, and will be opened to meet the demand for coal as the State engages more extensively in manufacturing enterprises. The aggregate annual shipments of coal from these mines is about one hundred and fifty thousand tons.

PRICE OF LAND.

No definite information can be given under this head, as very much depends upon the location, character of the soil, accessibility to market, extent of improvements, etc. Generally speaking, good wheat land ranges from $20 to $60 per acre. In the vicinity of San Pablo, land is rated at from $100 to $200 per acre—this being rather at its prospective value for private residences, being only a few miles from the growing city of Oakland, than its actual worth for agricultural purposes. Good grazing, vineyard and orchard land can be purchased from $3 to $10 per acre. One seeking a home must, in securing land, as in all other business transactions, make personal investigation, as surrounding circumstances to a great extent govern his action.

EDUCATION AND RELIGION.

The educational and religious principles will compare favorably with any county in the State. There are thirty-eight school districts, in each of which a public school is maintained at least eight months during the year, and in most of the larger towns ten months. From the early organization of the county its public schools have been fostered and zealously cared for. Many of the school buildings are handsome, commodious structures, supplied with all the conveniences of modern improvements and tastefully arranged grounds. Opportunities for religious instruction are not wanting. At Antioch, there are four churches—Congregational, Methodist, Advent and Catholic, each holding weekly service. Somersville, Nortonville, Clayton, Concord, Pacheco, Martinez, San Pablo, Walnut Creek and Danville, have each one or more churches, besides a number in agricultural districts remote from towns.

NEWSPAPERS.

There are three weekly newspapers in the county. The *Gazette*, published by Bunker & Porter, at Martinez, has completed its twentieth volume. It is an ably edited, well conducted journal, reliable in its statements, and ever has the best interests of the county in view. It is Republican in politics. The Contra Costa *News*, also published at Martinez, by William R. Crauna, completed its first volume. Its columns are devoted chiefly to local matters. In politics it professes to be an expounder of the principles of Democracy. The *Ledger*, published at Antioch, has entered upon its tenth year and volume. It is Republican in politics. Of its merits it would not be proper for the writer to speak.

TOWNS.

Danville, situated in San Ramon Valley, has the appearance of a quiet New England village. It contains two churches, of the Presbyterian and Christian denominations, a Grangers' hall, hotel, store, blacksmith shop and pretty cottages, embowered in moss and ornamental trees. There are few more inviting spots in the county than Danville, especially in the Spring and early Summer. It is distant some sixteen miles from Martinez, the county seat.

Alamo, also a small village, is situated on San Ramon Creek, two miles north from Danville. It has a hotel, store, school house and Presbyterian church. It is in the midst of a rich farming district, and most of the inhabitants are in independent circumstances.

Walnut Creek is a thriving little village, situated nearly in the centre of the valley at the junction of San Ramon Creek and that which bears the village name. It is a trade centre for surrounding districts, contains several stores, a good hotel, Methodist church, and during the past year has grown considerably.

Lafayette is the oldest village in the county, its first settler being Elam Brown, who located there in 1846, and is still a resident. It has a store, hotel, flouring mill, carriage shop and a few other business houses.

Pacheco is situated at the head of a slough bearing the same name. Owing to damage by

floods the population has somewhat decreased during the past five years, though it is a place of considerable business importance. It contains a population of about 500, has a number of stores of general merchandise, a Congregational and Catholic Church, an Odd Fellows' Hall—a handsome edifice—flour mill, plough factory, etc. Considerable grain is shipped from this point by way of Pacheco Slough, it being only four miles distant from Suisun Bay. A large scope of rich agricultural land is tributary to the town.

San Pablo is a small village in the southwestern portion of the county, twelve miles distant from Oakland. It contains two churches, Catholic and Baptist, a number of stores, hotels and business houses. It is pleasantly situated in the centre of a productive valley.

Martinez, situated on the Straits of Carquinez, is the county seat. It contains a population of about seven hundred and is one of the prettiest villages in the State. The overland railroad passes through the town, and the commerce of the Sacramento and San Joaquin rivers passes in full view. There is a Catholic, Congregational and Episcopal church, handsome school building, and a number of elegant private residences. The town contains a bank, several large grain warehouses, a flour-mill, four hotels, eight or ten stores, Court House, Hall of Records, and numerous business houses.

Concord is situate one and a half miles east of Pacheco. It is pleasantly located, contains a Catholic church, two hotels, several stores and shops, and receives its support from adjoining farming districts.

Clayton is a cosey, quiet village nestled at the foot of Diablo, eight miles east of Concord. It has an excellent school, a good hotel, Congregational church, several stores and business houses.

Nortonville, the most populous town in the county, is four miles east of Clayton. It is emphatically a coal-mining town, situated in a deep cañon, hedged on all sides by high hills. The town contains several stores, one or two public halls, hotels and numerous shops and business houses.

Somersville, also a mining town, is one mile east of Nortonville. The mines are still being worked, though not so extensively as in former years. Here there are two churches, Catholic and Methodist, a large hall, owned by the Red Men, a good hotel and several stores. Antioch is situate at the outlet of the San Joaquin Valley, a short distance above the confluence of the Sacramento and San Joaquin rivers. It contains 700 inhabitants. There are four churches, two hotels, ten stores, a fine hall, owned jointly by the Masons and Odd Fellows, a Grangers' Hall, distillery, the "California," etc. The town is pleasantly situated on the San Joaquin, is a shipping point for wheat, and commands the trade of a large scope of agricultural land.

Judsonville is a new mining town, five miles south of Antioch, having sprung up since the opening of the Empire Coal Mine. The growth of the town will be commensurate with and dependent upon the extent to which the mines are worked. The same is true of Somersville and Nortonville, which are dependent wholly upon the coal mining interest.

The little villages of Pittsburg and Black Diamond are landings on the San Joaquin River, and termini respectively of the railroads leading to Somersville and Nortonville, alluded to above.

MANUFACTURING AND SHIPPING.

Contra Costa ought to be and will some day become the leading manufacturing county in the State, and this for two reasons—first, on account of her cheap fuel for steam; and second, because she enjoys remarkable facilities for transportation, by rail or water, with every portion of the State. This is especially true of the eastern section of the county. Hundreds of tons of Diablo coal are daily brought by sail to the wharves at Black Diamond, Pittsburg and Antioch. It can here be purchased by manufacturers for three dollars per ton, being from one to two dollars per ton less than it now costs manufacturers at San Francisco, Vallejo, Stockton or Sacramento.

As a shipping and manufacturing point, the town of Antioch possesses peculiar facilities. Located near the confluence of the two large navigable rivers of the State, the San Joaquin extending in a southerly direction through the fertile valley which bears its name, a distance of 250 miles, and whose products are annually sent to market by water carriage afforded by this stream; and the Sacramento, running in an opposite direction a distance of 150 miles through an equally rich and productive country, whose products also are chiefly brought down the river, passing this point. Antioch is the head of navigation for sea-going vessels, and the only inland part of the State surrounded by a fertile, agricultural country, where the schooner, the barge, light-draught steamer and ship may meet. It is here the river enters Suisun Bay, whose channel at the shoalest point at low tide has a depth of twenty-two feet of water, and which was pronounced by the late General B. S. Alexander to be "free from all hidden dangers to navigation." It has been estimated that three-fourths of the export wheat products of the State are grown in these two valleys. Antioch is the natural outlet. It is the shipping point nearest to these grain regions, and when capacious warehouses are constructed, will become a leading port for the shipment of wheat to foreign markets. With her coal supplies, conveniences for transportation, and surrounded by extensive, productive farming lands, there cannot be found a more desirable location for manufacturing enterprises.

DEL NORTE COUNTY.

By W. H. WOODBURY, Esq.

Del Norte County is the most northerly county in the State; is bounded north by the State of Oregon, south by Humboldt County, east by Siskiyou County, and west by the ocean. This county was settled in the year 1853 as part of Klamath County; in 1857 it began its existence as Del Norte County. Crescent City, the county seat, is 280 miles from San Francisco, by water, and is situated on a little bay, the beach forming a crescent, and affording a pleasant drive of five miles. Black or gold-bearing sand is found here, and is worked now, and has been worked for several years with profit. Steamers and sail vessels run regularly between this place and San Francisco. Good wharfage can be obtained. A wharf runs from Battery Point to Flat Rock, a distance of 1,300 feet. Interior merchants have their supplies shipped to this point, to be forwarded by pack trains and wagons. The principal business of this place is lumbering and dairying. A fine belt of timber surrounds the town. The varieties of timber are spruce, fir, redwood, cedar, hemlock and myrtle. There are two sawmills in operation, which turn out 10,000,000 feet of lumber per annum, the most of which is shipped to San Francisco. The Crescent *Courier* is published here. There is also one job printing office, two churches,

three schools; Masonic, Odd Fellows' and Good Templar Lodges, all with good membership; stores, barber shops, hotels, etc. There are several dairies within a few miles of this place, and a great deal of land that can be bought reasonably, that would make either good farming or dairy farms. The climate is healthy. Very little sickness is found here, and no paupers.

Smith River, the next town of importance, is situated twelve miles from Crescent City. The principal business of this place is farming and dairying. There are several large dairies here, and room for more. The quality of the butter and cheese made is said to be equal to that of Marin County, and sells readily in the San Francisco market, where the most of it is shipped. There was over 100 tons of butter shipped during the last year, and dairying is in its infancy. Getting out and shipping railroad ties and fence posts is carried on to some extent here, there being fine forests of timber along the banks of the river. Salmon fishing is also carried on at the mouth of Smith River. There were over 4,000 cases of canned salmon, and 400 barrels were shipped from this point the last season. Small steamers and sail vessels enter the river.

There are three good schools, a church and three stores, and improvements going on all the time, which naturally shows prosperity. Land can be obtained from $2 to $30 per acre.

Altaville lies east of Smith River about eight miles. Here is a good opportunity for capital, as copper, iron, chrome and other minerals are found in large quantities.

Grasquet is situated eighteen miles from Crescent City, and is a mining locality, and would furnish plenty of room for those who desire a good place for prospecting, with good chances of success. Haynes Flat and Big Flat are now being mined extensively with good prospects, and plenty of room for prospectors.

Requa is situated at the mouth of the Klamath River. This place is at present claimed by the Government for a reservation, but why, it is hard to tell. A few settlers are located here, holding on in hopes that the Government will relinquish and throw it open for settlement; if such should be the case (and it ought to be), a fine farming country would furnish homes for a large number of families. The coast road between Del Norte County and Humboldt runs through this section.

Happy Camp, the last but not least of the towns in this county, is a thriving little village, to reach which we cross the Siskiyou Mountains, a pleasant and healthy place, where people die only of old age. Mining is the principal business done here. There are several large mines worked and all are doing well. Men can make a living almost anywhere on the river and creeks, at the same time with a prospect of doing better.

The total assessment of Del Norte County for the year 1878 was $695,950, and rate of 2⅓ per cent State and county taxes. The delinquent list will not foot up over $200.

SIERRA COUNTY.

By E. K. DOWNER, Junior Editor of the MOUNTAIN MESSENGER.

This county, most appropriately christened Sierra, Spanish term for mountainous, the lowest point within its jurisdiction being 2,000 feet above sea level, derives its name from the Sierra Nevada range of mountains, that cross from north to south, and is bounded on the north by Plumas and Lassen, east by the State of Nevada, south by Nevada County, and west by Yuba and Plumas. Most of the mining camps are far above snow line, at an elevation of 4,500 feet or more. Many of the cañons are 2,000 feet deep, through which flow, with the speed of a mill-race, the North and Middle Yubas, coursing westerly, the latter forming the southern boundary of Sierra. This county extends east and west about sixty miles, by thirty north and south, with an area of 830 square miles. Sierra is enriched with magnificent coniferous forests of red spruce, white or balsam fir, cedar, sugar and yellow pine, besides vast natural orchards of wild plum, gathered for preserving every year; and her beautiful romantic scenery and delightful climate is rarely equalled and unsurpassed in any part of the globe. There are a few isolated peaks in this county—Table Rock, Saddle Back, Mt. Fillmore, Fir Cap, 6,500 feet altitude; Sierra Buttes, near 9,000—only 200 feet lower than Mt. Lola. Sierra Buttes is one of the landmarks of the State, visible from a large area of the valley of the Sacramento, and most prominently conspicuous by the sharply-defined cone-shaped serrated basaltic lava in its formation. From the topmost ridges are obtained some of the grandest and most beautiful panoramic views of the country, from Mt. Shasta clear down to Diablo, and including a part of the State of Nevada. Some years snow falls to the depth of twenty feet on the high ridges, and people communicate with each other by means of tunnels. The abundance and long duration of the snow necessitate the use of snow shoes, and races with them are the popular amusement in Winter, which are "as good as a circus," especially, as is frequently the case, when much betting is therein indulged. The racing ground is usually on a long slope, down which the racers slide, sometimes at the fearful speed of a mile a minute. The shoes (Norwegian skate) consist of thin pine boards, turned up at the toe, four inches in width, twelve or sixteen feet long. Summer and Fall miners travel mule-back and afoot up and down the narrow, zigzag trails, as in the "auld lang syne," except in many places where good trails have been made. The chief industry of the county is mining, not one acre in fifty being suitable for the plough. Hardly a year passes without some unfortunate wanderer losing his way in the furious snow-storms in these mountains, many of whom never escape. During the warm season the temperature in the middle of the day is rather high, averaging from 80 degrees to 90 degrees in the shade; but nights are always refreshingly cool—sometimes chilling. Thunder is rarely heard at this altitude. Present annual snow-fall is much less than in former years, due in a measure, as accounted for by our scientists, to the thinning out of our forests. Sierra's geological features, like those of the central mining region of California, are: Eastern border, granite, forming the summits of the main range of the Sierra Nevadas; westward, basaltic lavas and volcanic breccia, overlying the slates, followed by slates in various degrees of metaphorphism, and belts of serpentine lower down toward the western side of the county.

STATISTICAL.

The following statistics for the fiscal years 1878-9, collated by County Assessor G. W. Hughes, will enlighten inquiring minds in regard to Sierra's resources:

Acres land inclosed, 2,932; cultivated, 2,695; wheat but little raised; barley, acres, 1,000; bushels, 20,000; oats, acres, 2,000; bushels, 40,000; potatoes, acres, 50; tons, 170; hay, acres, 12,600;

tons, 18,000; pounds butter made, 153,000; value fruit crop, $5,000; breweries, 6; horses, 1,192; mules, 63; total horned cattle, 3,452; sheep, 156; cashmere and Angora goats, 370; hogs, 308; grist-mills, waterpower, 1; barrels flour made, 100; sawmills, steam, 10; water, 8; quartz mills, 22; mining ditches (cost, near a million dollars), 55; miles in length, 228; irrigating ditches, 1; railroads, Central Pacific, 1; length, 2 15-100 miles; real estate, $778,700; improvements, $386,560; personal property, $323,905; total, $1,489,165; estimated population, 5,000; registered voters, 1,836; ballots polled last Presidential election, 1876, 1,428. Value agricultural land, Sierra Valley, $12 per acre.

Below are assessed values of the properties of some of our richest mines: Sierra Buttes, quartz, $140.000; Bald Mountain, drift claim, $70,000; Hickey & Co., hydraulic, $25,000; North America, do, $20,000; Arnott & Co., do., $7,500. Statement for March, 1879, finances Sierra County. John Scott, Treasurer: Cash on hand February 28, $26,299 65; received during the month, $3,515 05; disbursements, $6,803 93; balance in treasury, March 31, $23,010 77; outstanding indebtedness (road bonds bearing interest ten per cent per annum), $14,400 to be cancelled in two years, value county buildings, $11,250; tax levy per hundred, 1878, $2 60. To the able and economical administration of our Supervisors the past few years, is in a great measure due the credit of this favorable outcome for Sierra. County officers—Sheriff, N. B. Fish; Deputy Sheriff, H. H. Squire; County Clerk, H. Strange; Treasurer, John Scott; County and Probate Judge, A. J. Howe; District Attorney, F. D. Soward; Assessor, G. W. Hughes; Surveyor, I. G. Jones; Public Administrator and Coroner, A. Jump; Superintendent Schools, T. S. Wixson; Supervisors—D. T. Cole, George Wood, J. K. Walls.

DRIFT AND HYDRAULIC MINING.

Crossing Sierra in a northerly direction, is a continuation of the rich ancient river channels that pass through Nevada County. These have already yielded millions, but still insure profitable returns for centuries. At first the beds and shores of the Yuba and other streams were so rich in gold that fortunes easily came with the pan and rocker. But as these were soon exhausted, more costly modes of working had to be adopted to find the secreted treasure. It was discovered that under the mountains of volcanic lava existed channels of ancient rivers, in many cases richer than those of the present time. In Southern Sierra is the Golden Star, valuable drift claim, which gives steady employment to a large crew of men. The black sand, hitherto deemed of but little value, is being worked with a new process, by Superintendent Crane, yielding a far higher percentage of gold. Then comes the North Fork Company, incorporated September 5, 1870, since which time this mine has been continuously worked, completing thousands of feet of tunnel, gangways and air drifts. Over 300 feet of two compartment shafts have been sunk, and a large piece of ground excavated for dumping purposes, at a cost of nearly $10,000. Thus far, $175,000 have been expended in the development of this mine. While driving the main tunnel, a quartz ledge (supposed to be a pocket) was struck that yielded over $35,000. Samples of ore assayed $340,000 to the ton. The owners confidently believe they are on the eve of bringing to light one of the richest gravel leads ever discovered. The most successful company in this portion of the county is the Bald Mountain, whose lucky stockholders have realized, within the past seven years, more than $600,000 in dividends. Last year was netted $120,000. Channel steadily increases in richness. Main tunnel is now in a little more than a mile, and the train of cars, loaded with precious gravel, drawn out by a novel mouse-shaped engine, specially constructed for service here, in Massachusetts. The lead runs in a northeasterly direction. Some mining experts question its being the main blue lead channel. Usually one hundred and fifty, or more, men are employed during water season. The Bald Mountain Extension Company is pushing in a tunnel, 3,600 feet, to tap the supposed continuation of the channel, of which over 600 are completed. A shaft was sunk at Galloway Ranch, three miles up the ridge, prospecting for this gravel bed; but the great amount of water encountered caused a cessation of work, after a depth of 267 feet had been reached, through bowlders, pipe-clay and hard cement. The Pliocene Company now talk of running a tunnel to connect with the shaft for future operations.

Five miles eastward is the American Hill Hydraulic Mine, that has been in process of development for twenty-five years, and the prospects of which, at present, are very bright. It has excellent water privileges, and is owned in Downieville. A few miles distant is the Savage Mine. Beyond here gravel mining is mainly prosecuted on a small scale, until we reach

NORTHERN SIERRA,

Where, commencing at the lower end of the gravel range, between Slate and Cañon Creeks, and then following the channel northward or up stream, notably the first mine of consequence is the Fair Play claim, owned by Boyce Bros., worked by hydraulic process, with good water right. The bank is 100 to 400 feet in depth. Above the bedrock, forty to sixty feet, is quartz gravel, intermixed with large quartz and lava bowlders, where sections of petrified trees, various sizes and lengths, are often found. From this gravel to the surface the composition is lava, which breaks readily by bank blasting. The mine has been in operation for twenty years, yielding its fortunate owners a handsome competency, though the expenses have been large; and its great extent insures at least twenty-five or thirty years' princely revenues. Next above this location is the Union Hill, McChesney & Boyce, who also have acquired exclusive water privileges, and work by hydraulics. The mine is composed of a heavy gravel wash, thirty to eighty feet in depth, without overlying cement or lava. The bank carries gold from top to bottom; but the best pay, as in all gold mines, is the first twenty feet above bedrock. Petrifications or trees turned to stone, clearly showing the knots, bark and grain of the wood, are often discovered. These diggings have been in operation since the days of the "long tom," with all the varied changes and improvements to date, always yielding good returns, but paid far better since hydraulic mining has been reduced to a science by improved methods of handling the water with Little Giants, and swinging the bowlders out of the way with water derricks. Extent of rich deposit unknown; enough in sight to hold out for a lifetime. Adjoining and third in rotation is the Cleveland and Sierra, controlled by a corporation whose office and principal place of business is in Cleveland, Ohio, where the stock is mainly owned. This mine so far has been a failure, owing to poor management. No undertaking like this can be successfully prosecuted by a Board of Directors, separated by half a Continent from the field of operations, who, while sitting around coal stoves, smoking "club-house cigars," dictate its working. If a competent, practical mining superintendent were clothed with ample powers to develop the ground, in accordance with his own judgment, larger returns would accrue from the investment. There is a good water right; depth, 100 to 300 feet; best pay from bedrock up, about forty feet, composed of quartz gravel closely packed with massive lava and quartz bowlders. Above to the surface is fine quartz gravel and sand, containing but little gold. These rich gravel leads, already enumerated, appear to be inexhaustible; and when two or three generations shall have passed away, the outcome may prove (as is the sincere belief of many) that they have merely been prospected. Thence by the old river bed, three miles, is an extensive tract, owned by parties unable to develop it, and who would sell for a reasonable sum, commensurate with the merits of the property, affording an excellent opportunity for men of capital to invest and create fortunes. This brings us to the Iowa, where deep shafts have been sunk

and vast amounts of drifting been done, at an outlay, in the aggregate, of mints of coin. But now, after years of tireless perseverance, dividends have taken the place of heavy assessments, and a lively and prosperous mining burg created in this quarter. For seven miles beyond lies unprospected land, belonging to "Uncle Sam," who is willing to give a quit-claim to venturesome fortune hunters desirous of undertaking its development; and also a patent by compliance with his regular forms of application. Port Wine is next reached, where hundreds of thousands of dollars have been drifted from the bedrock, and still the yield continues unabated. This camp has furnished many lucky prospectors their "pile" (in mining parlance), now scattered to the four-quarters of the globe. Passing Grass Flat, where much coin has been expended running a bedrock tunnel, constructing ditches, etc., we arrive at Gardner's Point, where mines have miraculously risen from lack of credit for a fifty-pound sack of flour to be worth a "cool hundred thousand." Then follows Cedar Grove and Greenwood, where tunnel mining has been in operation since our earliest history. Average pay, three to five dollars per day, working short hours. Abundance of ground here unprospected for sale at low figures. Next on the roll comes St. Louis, or Sears' Dry Diggings, where Sears was accidentally directed when the Gold Lake excitement ended in a fiasco, and rocked out, in a few weeks, enough nuggets to load two mules, and then—started off in search of better diggings. This is now a hydraulic mining camp, with gravel 60 to 100 feet deep, easy to wash, with no large bowlders or heavy deposits, and principally owned by Donahue, Morgan & Stahl, who have a good water privilege. It is steadily yielding dividends, with sure prospect of lasting for many years. Thence, for one mile, the channel is worked out, where once stood the thriving little village of Chandlerville, with well-filled stores of merchandise, hotels and saloons, where all the alluring games of chance were played, and tempting piles of eight-square slugs lost and won. So, within a quarter of a century, on the site that was built a prosperous town, now nothing remains to tell where it stood. Pine Grove, one time the most populous village of northern Sierra, by fires, removals, etc., has been reduced to a few houses. Here Sears' Union Water Company are largely interested in hydraulic mining, possess their own water right (best in the county), each season realizing fair profits (frequently thirty-five cents per cubic yard) on capital invested, with pay-ground sufficient to last for years. At Howland Flat, where over two million dollars have been taken out by four companies the last few years, Chittenden & Co. are engaged in hydraulic mining, who own and use a good water privilege. In most sections of this county hydraulic claims are of little value, unless with them is controlled the water necessary for their working. This company obtain fair yields each season, and have a large body of ground, which will require years to wash away. Now, still following up the channel, so deeply covered with lava as to render hydraulicking impossible, we find drift mining has been resorted to: First, Union; second, Hawkeye; third, Pittsburgh; fourth, Monumental; fifth, Empire. All these have paid well, and the profits derived from them depended entirely upon the scientific manner in which they were worked. Many of the owners were enriched by their claims. As years progressed, tunnel mining improved, until now dirt can be taken out at one-half the expense per cubic yard that it cost a few years ago. The Empire has divided amongst its stockholders one-half a million dollars, with no assessments. North, or up-stream from the Empire, is the Bonanza, now being opened, which promises dividends of millions. Beyond this point the channel is capped with lava, and there are no surface indications to show where it runs.

In the extreme northern part of Sierra, a large, gold-bearing, ancient river channel emerges from the vast lava bed, which at one time overflowed all the great blue lead rivers, enveloping their sources in mystery. That the extensive quartz veins containing the gold, and from whence has come all the precious metal found in the channels, as also the quartz bowlders, little to big, rounded and smoothed by the action of water, are covered by this lava-cap, is a question of no doubt; and after such vast numbers of gold nuggets, many ounces in weight, have been driven down the channels hundreds of miles, I leave to the imagination of the reader the large quantities of heavy gold which will one day be found nearest to and at the original source—this fabulous, subterranean treasure-vault. Gibsonville is the first town of note below the deep lava flow, where gravel is in sight from top to bottom. The channel here has been tapped by tunnels only in places, about three miles—North America to Bootjack. This has been a prosperous mining camp for over a quarter of a century. The mines have amassed fortunes to many, and competency for thousands, but been poorly managed, due to a lack of knowledge, both of tunnel and hydraulic mining. The water supply, besides large bodies of valuable ground, is owned by Cox, Gourley and Lang. Numerous companies are working with profitable returns. Channel continues southward; is being located and in progress of development. The old towns of Poker Flat, Morristown and Eureka contain some of the richest hydraulic and drift mines in the State, which still yield princely revenues. Near little Grizzly is Bunker Hill claim, 800 acres; length of pay channel, 7,000 feet; estimated width, 500 feet: gross yield, one year, $90,000; total to date, over $100,000; number acres washed, five. Volcanic eruptions seriously interfere with the continuity of these ancient river channels.

The greatest drawback to Sierra has been that most of those who realized fortunes here emigrated to the valleys and lower counties of California, or Oregon, or the Eastern States, draining this section of capital; while others sunk their suddenly acquired riches in that maelstrom—the San Francisco Stock Exchange, and in Savings Banks, with little better success, leaving the wherewithal financially to develop new mines most discouragingly scarce. One peculiarity connected with drift mining is what is termed "swelling bedrock," a source of constant annoyance, running tunnels, frequently crushing heavy timbers and the cause of much other damage. Average wages paid miners, three dollars a day; blacksmiths, four. This is a desirable county for immigrants, willing to put their shoulder to the wheel and assist in developing some of the richest mineral land on any of the continents.

QUARTZ MINING,

A few years later, became one of our leading industries. The richest and most permanent ore bodies are those of the Sierra Buttes, located in 1857, since which time stamps have been used in their working. Previously, gold was extracted with arastras. For the first twelve years after their discovery the gross yield was $1,706,000; net profits, $1,069,000, while 130,000 of tons ore were crushed, averaging $13 per ton. Insufficiency of water for mill power then necessitated the construction of a flume, at a cost of $40,000. Present average gross yield, $30,000 per month, milling 5,000 tons of ore; expense of working, per ton, $4. There are 96 stamps, three mills run by water-power, and 250 men employed. The mine is operated by mills and tunnels; there are eight levels, the seventh being in over 2,000 feet. No sinking or pumping is required. It is the oldest and most extensively worked mine of the kind in this State. The ore now being of very low grade, it is necessary to put through a large quantity to make it remunerative. Four Knight's wheels are used at a pressure of 500 feet. Water is carried in flumes from Sardine and other lakes, on the north side of the Sierra Buttes, altitude 6,200 feet—region of perpetual snow. Possession has recently been acquired of the noted Independence ledges, and the water, for years so troublesome there, drained through the sixth level, and good paying rock has been found. The ravine below is favorable for operating arastras, of which there are thirty-

eight that grind the tailings from the mills, paying monthly rental for the privilege. Sierra Buttes, Plumas-Eureka and other Pacific Coast mines are controlled by English capitalists, whose head office is in London. The Sierra Buttes and Plumas-Eureka are connected by a telegraph line, and under the general supervision of William Johns, Esq., formerly of Amador County; Thomas Preston, assistant superintendent; Wm. James, underground foreman; J. E. Carney, head amalgamator—one of the most successful in the State. Gross yield, 1878, $312,000; net receipts, $97,000. The mine was sold by Ferd. Reis, original owner, 1870, for $750,000, and our venturesome friends over the waters have never regretted their purchase. Altitude of Superintendent's office, 5,400 feet.

A few miles down the Yuba, on the other side of the stream, up near the old Emigrant road, is located the famous Keystone Mine. The walls are of black slate, and the quartz is a yellow ribbon rock. The gold is fine and evenly distributed through the pay chimney, except one streak in the middle—the richest. The quartz seams cross at an angle, instead of being parallel with the direction of the vein. This ledge has paid largely, but the vast body of water struck at the great depth of the underground workings has rendered H. Scamman and his partners (some of your leading citizens) unwilling to venture the heavy outlay necessary for the further development of this mine, believing that some of the leading magnates of California street should and will eventually seek therein a profitable investment for their surplus cash.

There are numerous other valuable quartz ledges throughout the county—Good Hope, Oro, Brush Creek, Oriental, Hope, Gold Bluff and Phœnix, besides many others. There is a good prospect that this lucrative branch of mining will be extensively prosecuted in the future, as the vast mineral resources of Sierra become more thoroughly developed.

SIERRA VALLEY

Is located in the eastern part of the county, altitude of 5,000 feet, containing 45,897 acres of good farming land. Assessed value real estate, 1878, $103,485; improvements, $81,570; personal property, $118,274; total, $303,329. Tons of delicious marketable butter are annually churned (in places by water power), and shipped away, even as far as Virginia City. The hay, oats and barley crop is usually good. Many of the farmers are well-to-do, owning handsome residences with beautiful gardens and orchards. The land is watered by numerous streams, alive with mountain trout. Stock-raising is one of the leading industries. The waters of Webber Lake are now brought into the valley by means of ditches and flumes, miles in length, furnishing ample facilities for irrigation. In Winter snow falls to the depth of several feet, when there is as good sleighing as in the New England States. One and a half miles east of Sierraville, are a group of hot springs, known as

CAMPBELL'S SULPHUR BATHS,

Noted for their curative qualities for rheumatic and numerous other complaints. Their proprietor, John Campbell (our ex-Sheriff), has built a large hotel for visitors, which is crowded during the warm months every year. Near by are a dancing hall and croquet ground.

There are three towns in the valley—Randolph, Sierraville and Loyalton. C. C. Darling's stage line affords easy and rapid communication with Truckee, and Q. Buxton's, Jamison and Plumas Eureka Mine. It is intended to put up a telephone line this year between Sierraville and Truckee, which will, in time, be followed by a narrow-gauge railroad. This section is an excellent country for immigrants of limited capital. Far above in the clouds, 7,000 feet above the sea, lies a beautiful sheet of water—Independence Lake—three miles long by three-quarters of a mile in width—a lovely pleasure resort, much frequented during the Summer, where the thermometer is only 78 degrees, while it is over 100 degrees in the foothills and valleys. Three distinct echoes can be heard from the centre of the lake in the evening. The summit of Mount Lola, over 9,000 feet elevation, is only three miles distant. There is good fishing and abundance of game. Webber Lake, further north, is also much frequented, where eight echoes are clearly audible over the waters. The intention is to soon build a carriage-road up to the summit of Mount Lola, which will, on completion, afford one of the grandest drives in the world.

Downieville, county seat of Sierra, was first settled in 1849. The legal distance to San Francisco is 203 miles; State Capital, 119; Marysville, 65; Nevada City, 50. There is a tri-weekly stage communication with the latter two places. Summer and Fall the trip to the metropolis can be made in twenty-four hours. Population, 1,000 (it numbered over 5,000, with 1,500 voters, in 1851); registered voters, 250. The town was named after Major Wm. Downie, now a resident of Nevada County, where he is interested in valuable mining property. With an altitude of 3,000 feet, the climate is very similar to that of San Rafael, and flowers, almond and other fruit trees thrive. Downieville lies in a deep cañon, inclosed on all sides by mountainous ridges, fully 2,000 feet high, and was once the busy centre of the richest gravel region of California. Near as can be estimated, $15,000,000 was the aggregate yield of the river beds, cañons and flats. On Durgan Flat alone was extracted more than $8,000,000, and from Jersey Flat at least $2,000,000. One claim 60 feet square, located by Frank Anderson (now one of our practising attorneys), yielded in five months $80,000, and four miners with their Long Tom, took out $12,900. One Sexton, nicknamed "Sykky" (a little Irishman), realized, with a rocker, in five months $15,000. Sixteen dollars an hour was paid for putting in a wing dam, January, 1850; average wages, an ounce per day. There being no coin, gold dust was the medium of exchange, measured out with the top of a yeast powder can (Preston & Merrill's)—even full reckoned as worth $100. The town was incorporated in 1863, but a disastrous tie in the election for Marshal bursted things generally in 1865. This place is memorable in history on account of the woman that was hung (1851) by an infuriated mob. About five miles of flumes and ditches supply the drinking and irrigating water, sold by the month. Two fire companies, 500 feet of hose, and a reservoir containing 80,000 gallons of water, at an elevation of 150 feet, up the side of the mountain, and connecting pipe and hydrants, afford ample protection against fire. The Odd Fellows' Lodge numbers 74 members; Masonic, 44. Total shipment gold dust (Wells, Fargo & Co.), 1878, $162,385. Average rate paid at banking house of H. Scammon, for gold dust, $17 25 per ounce. Oro quartz ledge, Slug Cañon, worked with arastras, has yielded $14,000. More desirable fishing streams than those at and in the vicinity of Downieville cannot be found on the coast. Grouse, quail, deer, brown bears, woodchucks, coons, fishers and martens are abundant the year round. The natural scenery of the swift-flowing streams, deep gorges, lofty peaks—besides the innumerable geological curiosities on all sides, render this one of the most desirable and favored resorts of the scientist and admirer of the grand and beautiful. Forbes & Taylor's foundry has a fair run of trade, principally from the outside mines. The official organ of Sierra, the *Mountain Messenger* (Republican), established in 1852, third oldest weekly in the State, Vaughn & Downer, proprietors, is published at the county seat. The new bridge, connecting Durgan Flat with the main portion of the town, recently built by A. J. McGuire, one of our oldest and most respected citizens, is a substantial and enduring structure, and cost the county $4,000. Jersey Flat bridge, by the same party, cost three-fourths of that sum. A local telegraph line encircles the town, on which are twelve offices, where telephones are occasionally used. In years past snow has fallen as late as July and August. The Celestials have mined the river-bed with derricks for years. Below town, on the Yuba shore, are miniature pine trees, termed the "Two Sisters," eight feet in height, that have been growing

there, in the centre of a massive bowlder, since 1849. Should the extensive rich gravel channel on the ridge, near Galloway Hill, now being prospected for by the Pliocene and Extension Companies, be found, a fresh stimulus will be given to mining and all other business pursuits hereabouts, and Downieville will then proudly resume her old honored position—foremost amongst California towns.

FOREST CITY,

In former days, was one of Sierra's liveliest mining camps, but gradually dwindled to insignificance, until awakened from her Rip Van Winkle sleep by the rich gravel discoveries in the Bald Mountain claim, heralding a new era of prosperity. Every pay day, which occurs on the first Sunday of each month, while water lasts, fully $12,000 are disbursed amongst the employés, who, in their turn, circulate this large amount of coin equably with the hotel keepers, saloons and stores. There are three secret societies here—Knights of Pythias, 39 members; Odd Fellows, 69; Good Templars, 97. Four hotels, three dry goods and two grocery stores, two butcher shops, six saloons, together with numerous other trade marts, are liberally patronized. Population, 800; registered voters, 200. Total amount of gold dust shipped by Wells, Fargo & Co. to San Francisco, 1878, $300,000. Altitude, 4,500 feet. Water in the springs icy cold all Summer.

ALLEGHANY,

Two miles over the ridge, whose summit affords a beautiful panoramic view of the valley and mountains, including a part of the snow-sheds of the Central Pacific, was located in 1852. It is the centre of a rich and promising gravel and quartz district—whose past yield runs high into the thousands—with a bright future. Brainerd's tri-weekly stages run to North San Juan, Nevada County. There is a Masonic and an Odd Fellows' Lodge, with large memberships. Only a few years ago, one could walk direct to Forest City, by tunnel, through the centre of the mountain.

SIERRA CITY,

First populated in 1850, is a lucrative mining centre. For miles above and below, the river is lined with rich gravel claims, rapidly enriching their fortunate owners. An extensive ditch is being constructed, to afford abundant water supply, four miles of which has been completed at an outlay of $15,000. Lumber camps abound in the surrounding mountains, and saw-mills on the streams, all flush with business. Population, 400: registered voters, 100; Odd Fellows' Lodge, 32 members; Masonic, 40; Good Templars, 75; Wells, Fargo & Co's gold dust shipment, 1878, $288,380. A good wagon road passes though this town, from Downieville to Sierraville. The close proximity of the Sierra Buttes Quartz Mine, three miles distant by road, and three-quarters of a mile by trail, materially benefits the trade. When capital develops the promising quartz ledges hereabouts, this will be one of the liveliest mining camps of the Occident.

Lack of space prevents extended mention of Sierra's other flourishing towns—Minnesota, Chipps, Mt. House, Brandy City, Indian Hill, Goodyear, Monte Cristo, Eureka, Scales, Poverty Hill, Mt. Pleasant Ranch, Morristown, Port Wine, St. Louis, Howland Flat, Poker Flat, Newark and Gibsonville, which have rolled their millions into the treasury of the world.

GOLD LAKE,

One of the loveliest sheets of water in Sierra, was the centre of a noted mining excitement in 1850, owing to the waves beating against an auriferous hill, leaving much gold mixed with the sand, rich in spots and shifted about under the influence of a heavy surf, A gentleman who, with some friends, owned a portion of the beach, wrote to his associates that each of them would receive $43,000,000, if the sand was only one-tenth as rich as what he had examined. Subsequent events proved the richness to be only surface deep. Distance by trail to Downieville, 16 miles. The lake is four miles long, two miles wide and of great depth. The middle fork of the Feather River has its main source here. Eight echoes can be heard over the waters. Some of the trout weigh a quarter to half a pound each. Ice and snow in Winter freeze over the water to the depth of twelve feet, through which the anglers, as at Independence, fish through deep holes. Twenty feet of solid snow has been seen here as late as April, affording the finest snow-shoeing in the country. The best time for tourists to visit this section is between the 20th of July and the middle of August. The Western Union line passes near the lake. The prospect is that ere long there will be a good road from the lake to Sierra City, rendering this pleasure resort more accessible than it is now by the slow and tedious locomotion of mule-back riding up the steep-narrow trails.

Of late years a few gravel mines have been worked in this district with a large gold yield—Haven & Limprisch (in which was discovered a 50-ounce slug); Yuba Camp; Hibberd, Smith, Darling & Co.; Wilson & Davis; Foss & Wilbourn (who took out a 58-ounce piece; Woodchuck; Wilbourn Consolidated; Steellman, beside others. Much petrified wood and leaves are found. An extensive quartz ledge is prospecting well, and may ultimately prove a bonanza.

On an elevation, near Gold Lake, is one of Sierra's grandest observatories where is unrolled one of Nature's most gorgeous panoramas—from the mountains to the sea—and near evening, in Spring time, San Francisco harbor is clearly discernable, as the golden sunlight flashes over the waters from Goat Island and Alcatraz to the Golden Gate and the wild, surging waves of the Pacific.

SONOMA COUNTY.

By R. A. THOMPSON, County Clerk.

Sonoma County is situated twenty-five miles north of San Francisco, just west of a due north line. It is bounded on the south by the Bay of San Pablo and Marin County, on the north by Mendocino County, and on the east by Napa and Lake Counties. Its sea coast front, following the line of the sea shore, is about sixty miles. Its average length from north to south is sixty miles; average width, twenty-five miles.

Of the fifty-two counties of this State, Sonoma ranks sixth in wealth and population. It is surpassed in this regard by San Francisco, Alameda, Sacramento, Santa Clara and San Joaquin.

In variety and extent of its agricultural resources it has no superior. It ranks first as a grape- and wine-producing county. In its staple crop and stock products it stands in the front rank. It has a great extent of forest. The most conspicuous and valuable of its forest products is the well-known redwood. It is within bounds to say that this tree combines more valuable qualities as a lumber-producing tree than any known to the flora of this continent. It has a mining interest already productive and of great promise for the future.

THE QUANTITY AND QUALITY OF ITS LANDS.

The area of Sonoma County in round numbers is 850,000 acres. The land is classified by the Assessor in four grades. The first and least valuable grade — mountain, brushy and bare hill lands—estimated at 300,000 acres, is valued at from $1 to $4 per acre. It is utilized only for Summer pasturage. The second grade—timber lands and hillside pasturage—is estimated at 200,000 acres, and is valued at from $5 to $10 per acre. The third grade is mainly rolling lands denuded of timber, lying along or near the sea coast, used for dairy purposes. It is estimated at 200,000 acres, and is valued at from $20 to $50 per acre.

The fourth grade rich bottom lands is estimated at about 150,000 acres, and is valued at from fifty to one hundred and fifty dollars per acre.

Total assessed value of lands and improvements	$12,987,865
Total assessed value of personal property	3,172,889
Total assessed value of all property	$15,460,754

The actual cash value of all property is perhaps one-fourth more than the above total. It would not fall short of twenty millions of dollars.

TOPOGRAPHICAL AND CLIMATIC FEATURES.

The principal topographical feature of Sonoma County is a series of valleys, separated by ranges of mountains and hills which have a general trend from southeast to northwest. These valleys are interlaced by the dividing ranges, and without reference to a map it is difficult to describe their connection one with the other. They are various in extent, in formation and in climatic differences; are uniformly watered by living streams and bold springs upon the bordering hills. The difference in temperature between the valley and hill lands is beginning to attract the attention of intelligent farmers in this county, and may lead to important results in the direction of semi-tropical fruit culture. It has been demonstrated that there is a warm belt above the level of the valleys in which frost rarely falls. The temperature at sunrise within this belt, which varies from two to eight hundred feet above the plains, is proved by actual experiment to be at least ten degrees Fahrenheit higher than at the same hour in the valleys below. After sunset the cold air flows from the hills to the valleys and is replaced by a warmer atmosphere from above. This interchange continues through the night, and is an effectual shield against frost. The singular fact that the thermometer within this belt often marks a lower temperature two hours after than it did at sunrise has also been proven by these experiments. It often happens here, as elsewhere in California, that there is a good depth of soil on the hills, and when not too steep for cultivation, they produce as well as the valleys. If they have, as seems now to be proven, a warmer temperature that the bottom lands, it must add greatly to their value.

The average rainfall in this county is about one-fourth greater than in San Francisco. The rains usually begin a month sooner in the northwest coast counties, and continue a month later, than in the interior of the State. To this fact is due the excellence of these counties as a field for dairy products. On the immediate coast, where the great dairy farms of Sonoma are located, there is green grass the year round, and the interior valleys keep green until the 10th of June. The mean average rainfall for twenty-five years has been twenty-six inches. The crops are sometimes injured by too much, rarely by insufficient, rain. In the notable drouth years of 1863–4 and 1864–5 enormous crops were raised in Sonoma. In some instances farmers cleared in the two seasons more than the full value of their land and improvements.

Sonoma County is exempt from all malarial disorders. The force of the northwest trade winds is broken by the immediate coast range of hills; they reach the valleys beyond shorn of their harshness. To this moisture-bearing breeze from the sea Sonoma County is indebted for many of its great advantages in products as well as climate. The redwood tree, of which we have elsewhere spoken, owes much of its prodigious girth and extraordinary height (in some instances by actual measurement not less than 400 feet) to the influence of the mists which gather on the coast hills and fall into the valleys beyond during the Summer months. The redwood attains its maximum height and perfection within the fog belt. The sight of the sea mist creeping through the towering crests of a redwood forest once seen will never be forgotten. It appears first a thin, gray veil of vapor amid the foliage, soon forms a dense canopy overhead, which these giants of the forest seem to uphold, as the temperature equalizes the fog descends, and in a short time the whole forest is shrouded in mist. The foliage condenses the mist to a surprising extent, and the tree by this means is irrigated from the base to the extent of its outermost roots, and this process repeated daily through the Summer months accounts for the great size the redwood attains in the rich and fertile bottom lands on the coasts of Sonoma, Mendocino and Humboldt Counties.

A central valley extends through the county from north to south, a distance of fifty miles. In width it varies from three to fifteen miles. Through this valley the San Francisco and North Pacific Railway is laid, from tide water to Cloverdale, a flourishing and beautiful village near the north boundary of the county. The lands in the great valley in the main are of the finest quality, producing all the staple and fruit crops in great abundance and variety.

The country east of this central valley is mountainous, diversified by numerous small but beautiful and fertile valleys. The Geyser Springs, one of the great natural curiosities of the State, are situated in this mountainous region, and not far south of the Geysers is the scarcely less wonderful petrified forest. Both places are visited annually by tourists from all parts of the world.

To the westward, between the central valley and the ocean, there are heavily timbered valleys and hill lands, and a wide extent of pasturage, upon which are kept 20,000 cows, producing on this feed alone an average of 175 pounds of butter per head per annum.

PETALUMA AND VALLEJO TOWNSHIPS.

There are thirteen townships in Sonoma County. Petaluma and Vallejo are the most southerly. They are bounded on the south by San Pablo Bay, and are separated from each other by a navigable estuary extending inland about fifteen miles, at the head of which is situated the prosperous and beautiful city of Petaluma. The great advantage of its location at the head of navigation, within thirty-five miles of San Francisco, with a back country of great extent and richness, gave impulse to this place very early in the history of Sonoma County. It became a centre for a large export and import trade, increased rapidly in population and wealth, and is to this day one of the most promising of the inland cities of California. The citizens of Petaluma, with much judgment and good taste, have improved and beautified, not only their city, but all its approaches. It has excellent drainage, and its streets are well graded, and its business and private houses compare favorably with cities of greater population and pretension in California or even in the older settled Eastern States. It has long been noted for the excellence of its public schools, its churches and its benevolent institutions. Its population is about 5,000.

The following table of the exports of Petaluma will give an idea of the extent and variety of the products of Sonoma County and of the exports of its chief commercial city: Wool (pounds), 150,000; butter (pounds), 3,750,000; cheese (pounds), 800,000; hay (tons), 10,000; grain (tons), 4,000; potatoes (sacks), 250,000; eggs (dozen), 100,000; poultry (dozen), 8,000; quail (dozen), 12,000; flour (barrels), 7,000; cattle (head), 2,000; hogs (head), 23,000; sheep (head), 10,000; calves (head), 12,000; fruit (boxes), 40,000; paving-stones, 200,000.

The farms in Petaluma and Vallejo townships are highly improved, many of them are models of intelligent and systematic culture worthy of imitation, especially in this State where the old ranch system of farming is unfortunately the rule, and not, as it should be, the exception.

SONOMA TOWNSHIP.

Just east of Vallejo Township, but separated from it by a high range of hills, lies the far, and justly, famed valley of Sonoma, from which the township and county takes its name. Like Petaluma, it has a frontage on the Bay of San Pablo, and a navigable estuary leading inland. It is about sixteen miles in length, and has an average width of perhaps eight miles. The valley of Sonoma is devoted almost exclusively to grape culture. The Assessor estimates the number of grape vines in the county at 5,000,000, and the number of gallons of wine at 2,500,000, of which at least 1,500,000 gallons is made in Sonoma Valley.

The village of Sonoma is the oldest town in northern California, having been laid out in 1835 by General M. G. Vallejo, still a resident of the city. At daylight on Sunday, the 14th day of June, 1846, this historic old town was captured by the bear flag party, which act proved to be the first of a series which led to the acquisition of the whole of Upper California by the Americans.

This beautiful valley owes its present importance to its remarkable superiority as a wine-producing district. The excellence of the Sonoma Valley wine is everywhere admitted, and each year there is improvement in the quality, especially of red wine. This improvement is largely due to the increased production of the Zinfendal grape, from which the best red wine is made. If the wine production from this grape was equalled by the demand for red wine, we would hear no more of the superiority of French claret. Grape culture requires skill, patience, close attention, a proper soil and suitable climate. Given these requirements, and it is the most profitable of all agricultural pursuits followed in the county of Sonoma, paying from sixty to one hundred and fifty dollars per acre net—the difference in the profits depending on the variety of grape grown. This sum may be made from land which would not pay the cost of cultivating and harvesting a wheat crop. This is one of the great advantages of Sonoma County. Its thin lands not adapted to ordinary farm crops may be made to yield a profit as great and often greater than the best grain lands in the valleys.

SANTA ROSA TOWNSHIP.

This township lies north of Vallejo and Sonoma townships. It embraces an area of about fifteen miles square, in the very centre of the county. The town of Santa Rosa, in the centre of the township, is the county seat. That portion of the great central valley heretofore described, in Santa Rosa Township, takes the name of Santa Rosa Valley. A bold stream rises in the hills, which form the eastern boundary of the township, and flows through it from east to west. The bottom lands on this stream are of unsurpassed fertility; they still produce from twenty-five to fifty bushels of wheat to the acre, after twenty years of successive grain culture; when first brought under cultivation from seventy-five to one hundred bushels to the acre of wheat or barley was not an uncommon yield. This land now produces from fifty to seventy bushels of corn to the acre, without rain, from seed time (in May) to harvest (in September.) Farms in this township bring from $40 to $150 per acre. The smaller valleys of Los Guilicos, the Rincon and Bennett Valley are included in Santa Rosa Township. It would not be improper to class these as tributaries of the valley of Santa Rosa. The first of these named, Los Guilicos, lies just north of Sonoma Valley, and possesses all the advantages of that district for grape culture and a considerable area of rich farming land. Its natural beauties surpass its material merits. In short, it is universally admitted to be one of the most attractive valleys in the State. Its present wine product is 100,000 gallons, with room for an indefinite increase.

The Rincon is a smaller valley lying north of the Guilicos. It has good farming land and some productive vineyards. In the opinion of observant farmers this valley offers as many advantages for grape and fruit culture as any part of Sonoma County. It is not so well known as other portions of the county, and farms there on that account are cheap. Bennett Valley lies west of the Guilicos, and is separated from it by a range of hills. Its climate and soil is much the same as Sonoma Valley. One of the best vineyards in the county, that of the well-known viniculturist, Mr. I. De Turk, is situated in Bennett Valley.

The wine product of Santa Rosa township and its tributary valleys is about 500,000 gallons. This yield could be quadrupled without encroaching in the least upon the land adapted to wheat and corn culture, not suited for the growth of grapes.

The city of Santa Rosa is handsomely situated on both sides of Santa Rosa Creek. It is fifty-three miles from San Francisco. Its population is between five and six thousand. It has two colleges, the Pacific Methodist and the Christian College. It has an abundant supply of water from a reservoir a few miles east of the city. It is surrounded by some of the most productive farms in the State, and an intelligent and prosperous farming population. It has a considerable export trade of wheat, hay, corn, wool, dairy products, poultry and wine. One of the largest wine factories in the State is located here, and it is probable that the wine product of this township will double in the next five years. Though now sharing the general depression in business throughout the State, the outlook for Santa Rosa in the future is as promising as any of the inland towns of California.

THE RUSSIAN RIVER VALLEY.

The townships of Russian River—Mendocino, Washington, Cloverdale and Redwood—occupy an area of about twenty miles square in Russian River Valley. The watershed of this section is

toward the valley, and all the streams, large and small, flow into Russian River, and find an outlet through its channel to the Pacific Ocean. The Russian River bottom lands have been noted in this State from the territorial era down to this day, and its great fertility was known to the Californians and Russian, who settled on the coast of Sonoma long before the American occupation. The soil is alluvial, of extraordinary depth and richness. If there is such a thing as an inexhaustible soil, it can be found on the borders of Russian River, and the same may be said of the bottom lands on all its tributaries.

Russian River enters Sonoma County across its northern boundary line, flows through each of the townships named above, in a southeasterly direction, for a distance of about twenty-five miles. It then turns sharply toward the west and finds its way through the immediate coast hills to the Pacific Ocean. From its mouth inland for about fifteen miles the river bottom was originally covered with an incomparable forest of redwood trees. Beyond this forest the valley is bare of trees, except scattered groves of oaks, and its unclaimed luxuriance, wild oats, which could be tied over a horse's back, grew down to the margin of the stream. Improved farms in this section are worth from $75 to $150 per acre. The foot-hills are as well adapted to grape culture as any portion of the county, and can be bought at very reasonable rates. To this date they have not been so utilized. The total product of wine from northern Sonoma, which has an unlimited capacity for grape culture, is estimated at only half a million gallons.

Healdsburg, the largest town in this section, and the third in population in the county, is situated near Russian River, about the centre of the valley, on a rise forty feet above the river bottom proper, which gives it admirable drainage and a modified climate. The natural beauties of its location cannot be anywhere surpassed. It has a population of about 2,500, and from what we have said of the country which surrounds it, an idea of its resources may be formed.

The town of Cloverdale is sixteen miles north of Healdsburg. As elsewhere stated it is the northern terminus of the San Francisco and North Pacific Railroad. The products of northern Sonoma, Mendocino, and a part of Lake County, are shipped from Cloverdale. The export of wool from this place is at least one and one half million pounds annually, and nearly half a million pounds of hops. The latter valuable product can be cultivated with great success upon all the Russian River lands. The location and surroundings of Cloverdale will always make it one of the leading towns of Sonoma County.

Geyserville, between Cloverdale and Healdsburg—and Windsor and Fulton—between Healdsburg and Santa Rosa, are shipping points on the line of the railroad, and from each a considerable export trade of farm and forest products is carried on.

The mineral springs of Sonoma County are all situated in northern Sonoma. From Healdsburg and Cloverdale daily lines of stages connect with the cars for the Geysers, which are about sixteen miles distant from either place. At Geyserville stages connect with the train for Skaggs' Springs, at the head of Dry Creek Valley, one of the favorite Summer resorts of California. The Mark West Springs, a watering place of increasing popularity, is about nine miles from Santa Rosa or Fulton, and may be easily reached from either of the e points.

KNIGHT'S VALLEY TOWSNHIP.

This township embraces only the valley of the same name at the foot of that conspicuous and beautiful landmark, St. Helena Mountain, which may be seen from the wharves or from high points in the city of San Francisco. The remarkable beauty of this valley and the mountains which forms its back ground, has attracted the attention and been selected as a subject by some of the best landscape painters of the State, and through this medium its peculiar beauties are familiar to the patrons of art in California. Its principal products are wheat, wool and wine. Kellogg, at the very base of St. Helena, is one of the favorite Summer resorts of the State.

THE COAST TOWNSHIPS.

The coast townships of Sonoma alone remain to be mentioned. Analy, Bodega, Ocean and Salt Point. The first named, Analy and Bodega, lie together, have the same general characteristics of soil, productions and climate, and may be best described together. They include an area of about fifteen miles square, bounded north by Russian River, east by Santa Rosa township, south by Petaluma and Marin County, and on the west by the Pacific Ocean. In these townships the great dairies of Sonoma County are situated. From the coast inland, to the border of Santa Rosa Valley, there is a succession of low, well-rounded hills, bare of trees and covered by a good depth of soil and a rich sward of natural grasses, which are kept green for most of the year by the sea mists which roll over them during the dry Summer months. There are valleys of greater or less extent between the hills, and here are situated the dairy farms of Bodega and Analy. At least 15,000 head of milch cows are kept in this section. Two valleys of considerable size extend through this region—one, the valley of the Estero Americano, runs from east to west through Bodega Township, terminating at Tomales Bay; the other, Green Valley, extends longitudinally through Analy Township from north to south, the stream from which the valley takes its name emptying into Russian River. Green Valley is almost exclusively devoted to fruit culture. In it are situated some of the oldest and best orchards of the State of California. Here the choicest apples on the Pacific Coast are raised, and it seems also to have an especial adaptability to the growth of plums, prunes, cherries and other stone and seed fruits. The culture of berries is also a leading feature of Green Valley. In fact, the climate and soil seems fitted for the growth of fruit of all varieties. Improved farms in this part of the county sell for from forty to one hundred dollars per acre. The shipping facilities of Bodega and Analy are all that could be desired. The North Pacific Coast Narrow-gauge Railroad enters Bodega Township from Marin County and runs through it to the terminus on Russian River, affording convenient railroad transportation. There is also a good shipping point by sea from Tomales Bay and another from Bodega Bay. In fact these townships lie between parallel lines of railroad, and have besides two good shipping points half a day's sail from San Francisco. Could anything more in the matter of transportation be asked for than this highly favored locality? The villages of Valley Ford, Freestone, Occidental and Duncan's Mills lie on the line of the narrow-gauge road, Bloomfield, Sebastopol and Forestville east of it, and Bodega Corners west of the railroad. All are prosperous country villages, with hotels, stores, warehouses, churches and schools.

OCEAN AND SALT POINT TOWNSHIPS.

These townships lie north of Bodega and have a frontage of over twenty-five miles on the sea coast. The narrow gauge road terminates on the north side of Russian River, at Duncan's Mills, in Ocean Township. It enters the timber country at Howard's Station, eight miles from Duncan's Mills, passing the sites of a number of saw mills, varying in capacity from fifteen to forty thousand feet of lumber per day. The village of Duncan's Mills is well supported by the lumber product of the surrounding forests. The open country in Ocean and Salt Point Townships is occupied for grazing and dairy purposes, its chief resources being from its extensive forests of redwood and chestnut, or tan bark oak. The shipping places in Salt Point, on the coast, are Fort Ross, Salt Point, Fisherman's Bay, and Stewart's and Black Points. Between all these places and San Francisco a number of sailing vessels carry on a regular trade in tan bark, lumber, cord wood, railroad ties and farm products.

Fort Ross, a site selected by the Russians for a colony, in 1812, is situated in Salt Point Township.

The stockade fort built by them still stands. It is now owned by Mr. G. W. Call, an intelligent and enterprising citizen, who, with a commendable love for antiquity, preserves as far as he can, this relic of the almost forgotten past, once invested with the dignity of a military post of the Emperor of all the Russias, and a source of no little anxiety to the feeble Californians. They seemed to realize long before the event came, that the first power bold enough to stretch out its arms would wrest the country from their feeble grasp.

MINING INTERESTS.

There are a number of valuable quicksilver mines in Sonoma County, two of which are in successful operation—the Great Eastern and the Oakland. The former mine is producing about fifty flasks of metal per week. It is situated in Redwood township, near the village of Guerneville, in the midst of one of the most extensive redwood forests of this county. The location of the mine, if especially selected, could not have been better chosen. It is easy of approach, and has close at hand a supply of the best timber known for mining purposes. Near it is the Mount Jackson Mine, fully equipped, but not now in operation. Guerneville, the shipping point for these mines, is the terminus of a branch of the San Francisco and North Pacific Railroad, running from the town of Fulton into the redwood district. It is in the midst of the best lumber district in the county, and is besides receiving and shipping point for the mines above named.

The Oakland Mine is located near Geyser Peak, in Mendocino township, and is producing about 300 flasks of metal a month, which yield can be largely increased whenever the market justifies the increase. In the same locality there are other mines not now in operation, but which will in the future be worked with profit to their owners and advantage to the county.

GENERAL STATISTICS.

There are 103 school districts in Sonoma County, 110 school houses, 7,531 census children, and 170 teachers. The average monthly wages paid to teachers is $66 per month. Some of the best public school-houses in the State are to be found in Sonoma County. The sum of $88,633 38 was paid for the support of these schools for the past year, 1878. The rate of taxation is $1 50 on each $100 valuation of property in the county. The total sum raised in 1878 was $235,210 15; of which $88,633 38 was paid for the public schools, $40,538 for public roads, $34,256 to the State, $15,000 to the Indigent and Hospital Fund, and $34,153 for general county expenses. The debt of the county is $374,000, of which $263,000 is for outstanding railroad bonds, and the remainder for Hall of Record and funded road bonds. The total value of all county property is about $300,000.

CONCLUSION.

The residents of Sonoma County claim that it equals any county in this State in the extent and variety of its resources. They base their claim to superiority of climate on the fact that they have had no failure of crops. They point to their exports of wheat, barley, corn, hay, hops, butter, cheese, live stock, poultry, fruit, wine, wool, lumber and quicksilver, to prove the productiveness of its soil, forests and mines, and to their bay and sea-coast front, which will forever prevent monopoly in the transportation of its products. They refer with pride to its public schools, its colleges and churches, to its numerous mineral springs and beautiful scenery. When all these advantages are considered, it must be admitted that they have a substantial base for their claim to superiority.

MARIPOSA COUNTY.

By ANGEVINE REYNOLDS, Editor Mariposa Gazette.

Mariposa County is triangular in shape, with its north side bounded by Tuolumne, its south by Fresno, and Merced lying at its western base. It is perhaps principally remarkable as containing the Yosemite Valley, which has been so fully described and illustrated that neither time nor space will be devoted to it here. But this fact, though it attracts a host of visitors and tourists, who all leave some money behind them, has little to do with the position of Mariposa as an important county of California.

Its topographical peculiarities strongly resemble those of El Dorado, Amador and Calaveras. With its eastern extremities lying in the high Sierras and its western portions embraced in the San Joaquin Valley, it is at once a mining and agricultural district. Its forests, too, are so extensive that lumber can be put down as its third important industry.

A portion of the county is covered by the Fremont or Las Mariposas Grant, a fact which has been quite as fruitful in litigation as the quieting of the Sutter titles. This grant is a large tract of land which was ceded by the Mexican Government before California was acquired by the United States, and which was afterwards awarded to John C. Fremont. It covers an area of forty-four thousand acres of land, including some of the richest mineral districts of the county, several towns lying within its limits. The property of these districts and towns largely depends upon the management of the estate, which, we are sorry to say, has not for the last few years been faultless. There are many rich veins on the grant lying idle, caused from an unsettled state of affairs financially, with the company owning it. The yield from these veins runs away up in the millions, and lack of proper management has more than exhaustion to do with that yeild ever decreasing.

The steady farmer is settling westward now, however, and very soon it will matter but very little whether the eastern mountains are crowded with mines or not.

The Merced River and the waters of the Mariposa both take their rise in this county, the first by the time it joins the San Joaquin being quite an important stream. It has its source in the perpetual snow, and then flows over towering precipices and through deep and precipitous cañons until it reaches the tamer and western boundary of the county.

The town of Mariposa, which is the county seat, is located on and near the easterly boundary of the Fremont grant, but does not belong to the property of the grant, as has been so frequently and erroneously stated. The towns of Bear Valley and Mariposa were regularly surveyed, at an early period, and sold to the settlers before the title to the grant passed from Fremont. Another erroneous impression which prevails abroad, is that the Fremont grant covers the greater portion of the county, and more particularly, nearly all that is valuable for mining purposes. Estimating the area of the county at one thousand four hundred and forty square miles, and the Fremont grant at forty-four thousand acres, or about sixty-nine square miles, goes to prove that the grant does not occupy one-twentieth part of the county

There is also an impression abroad that the Fremont grant includes a majority of, or about all, the valuable mines of the county, which is another gross mistake. The percentage of valuable mines and mining interest outside the grant is greater than the difference in amount of lands heretofore accredited to each.

The whole county is emphatically a mining region. There are probably more gold-bearing quartz veins than are to be found in any other territory of the same size in the State; and, at no distant future, the value of its bullion will equal that produced in any county of California or Nevada.

The climate is salubrious, and the landscape is what might be termed picturesque, similar to that seen by tourists travelling through Switzerland. The soil is usually fertile, adapted to limited farming—fruit, vegetables and grasses—especially where water can be had for irrigation. Had the Mariposa Land and Mining Company, owners of the celebrated grant, turned their attention to building a canal from the South Fork of the Merced River, which has already been surveyed, for the purpose of introducing water into this section of country for mining and irrigation purposes, instead of the useless expenditure of running great tunnels and sinking shafts, etc., they would now be a corporation of exceeding wealth; and Mariposa County to-day could unfurl her banner and exhibit to the world in letters of pure gold, inscribed around her emblem (Butterfly), the words, "Mariposa, the Banner County of California." Not considering at this time the value water would be here for mining purposes, but for irrigation, simply, it is more than probable that the grape-growing business would become more noted than any other locality in the State for the fine quality of its wines. At an elevation of 1,000 to 1,500 feet above the sea-level, fruit attains an excellence of flavor that is unaccountable, unless it be from the dryness of the atmosphere and the abundance of sulphurets of iron that impregnates the soil throughout the mining region.

Mariposa County at present is conspicuous with many relics of years gone by, indicating prosperity at some earlier period of time. Hundreds of deserted cabins and camps can be traced throughout the county, besides the remnants of several towns that once stood prominent in the busy marts of industry and prosperity.

MARIPOSA.

Mariposa, the county seat, lies 145 miles southeast of Sacramento, 185 miles easterly of San Francisco, 110 miles easterly of Stockton, and 45 miles northeasterly (via stage road) from Merced, a station of the Visalia Division of the Central Pacific Railroad.

The town of Mariposa and its environs contains about 700 inhabitants, 2 churches, 2 schools, 2 hotels, stores, shops, stables, etc. The Court House, jail and county poor house are also located here. The daily stage from Merced with passengers, mail, etc., arrives at five P. M. every day. One newspaper, the Mariposa *Gazette*, is issued every Saturday at this locality. The Odd Fellows own a large brick building, and the Masons are contemplating the erection of a hall.

HORNITOS.

Hornitos is an old mining town on the stage road leading to Merced, about twenty miles from Mariposa, which sprang into existence about the years 1853–'54, and is an exception to many that, in those early times, were quite prosperous and filled with a golden promise of a more lasting and brilliant future. Notwithstanding the gradual decay of business and "petering" out of rich pockets of gold that were so frequently found during the early period of mining in this section, and the destructive conflagrations with which it has several times been sorely afflicted, Hornitos still survives, and at the present time is one of the most prosperous villages in the mining region bordering upon the Pacific Coast. It is located in the midst of inexhaustible gold-bearing quartz veins, which, as a whole, is unequalled in richness and extent in California. The early acquired habit of the miners in this section, of picking up gold lying about loose, and the easy mode of extracting from the surface gold in large quantities, essentially diminished the energy and enterprise of working the mines with any system or sinking upon them, as must eventually be done before a lasting success can be attained. The Washington is about the only mine in this section that has really gone down upon the vein to a depth calculated to give it a fair test, and, with proper machinery and management, it has proved a success. Hornitos, and the immediate vicinity, contains about a thousand inhabitants of a mixed population, about equally divided with the American, English, Italian, Mexican, with quite a sprinkle of Chinamen and scattering Mongolians.

The neighborhood of Hornitos is dotted with quite a number of ranches, farms and gardens, that raise a sufficiency of cattle, hogs, barley, hay, vegetables, etc., for home consumption. Goat-raising and improvement of the Cashmere goat is fast becoming a prominent feature in this section. Messrs. Stockton & Buffum led off in this enterprise about fifteen years ago, and by perseverance and steady application to the business, are now being rewarded for their industry. They commenced, as it were, only with a goat or two, and now have several hundred of the best improved Cashmere, from which they sheared in January last upwards of four thousand pounds of wool, worth fifty-five cents per pound at the home of the producer. There are many others following the example of Stockton & Buffum, who will in a few years reach the climax they have attained at this time in raising annually a fine crop of Cashmere wool. Considerable more might be said favorable to this section.

WASHINGTON MINE.

Washington Mine is situated about two miles northerly from Hornitos, on the road leading to Bear Valley, and is quite distinguished for its extensive works, which give employment to about a hundred men, most of whom have families. The twenty-stamp mill, which is run by steam, consumes annually a great amount of wood, and gives employment to choppers and haulers to no small extent. These works have created quite a mining village of about fifty houses, which includes a store, office of the Company, saloon, and family residence. Mr. George E. Webber, Jr., and Moses L. Rodgers are the superintendents and managers of the whole works. They are distinguished for their ability and superior management of this extensive mine and works, which, to be remunerative, needs just such men.

COULTERVILLE.

Coulterville is likewise a mining town, situated about twenty-five miles from Mariposa, on the Merced River. It contains about four or five hundred inhabitants, with one good hotel, owned and kept by Mr. and Mrs. Daniel Wagner. The town of Coulterville, though surrounded by a vast quartz region, is not without its advantages of a fair proportion of good agricultural lands. There are quite a number of farms, gardens, ranches and vineyards, sufficient to supply the demand of a much greater population than at present reside in that region. G. W. Hobron is the proprietor of the only saw-mill in active operation in that section. The Mariposa Land and Mining Company are principally supplied with lumber from this mill. That portion of country known as the Coulterville section lies upon the northerly side of the Merced River, and is inaccessible by vehicles. The most direct line from Mariposa to Coulterville is only twenty-five miles; but simply for the want of a little enterprise, either public or private, to open a few miles of road, and which could be done at no great cost, a distance of sixty-five miles via Hornitos and Merced falls has to be traversed. This would be a valuable franchise to any one who would avail himself of this opportunity and open this piece of road. This portion of the country covers an area of about fifty miles long by about fifteen wide, and is threaded with innu-

merable gold-bearing quartz veins, many of which have been successfully worked, and many others sufficiently prospected to satisfy the claimants of their richness and the amount of yield per ton, provided they could command capital and machinery to set them in motion.

Bull Creek is a section of mining country about eighteen miles above Coulterville, and includes quite a number of valuable mines and some few ranches. This is the home of Mr. A. G. Black and family, who settled there many years ago and started the business of merchandising and keeping a hotel, and for many years while placer mining was prosperous, he accumulated wealth and was the leading business man of that section. Mr. Black is now the owner of Black's Hotel in the Yosemite Valley, where he spends his Summers during the travelling season.

The principal mines in the vicinity of Coulterville are the Maxwell's Creek Gold and Silver Mining Company, which includes the Mary Harrison, Malvina and Potosi mines, upon which is a large fifty-stamp steam quartz mill, besides a vast amount of other machinery, which is at present idle from some cause. The Marble Spring, Martin and Walling, Virginia, Penon Blanco and the Crown Lead mines, old and well-established mines, are likewise idle, awaiting labor and capital to push them forward. The Hasloe is another valuable mine, upon which there is a splendid ten-stamp mill, together with other necessary machinery. The Scanlon and Banderita mines are, we believe, the only two in operation at the present time, but with what result we are uninformed.

FERGUSON MINE.

This mine is situated on the main Merced River, about five miles west of Hite's Cove, and is now in successful operation, running a ten-stamp mill by water-power. The proprietors are Mr. John Ferguson, Isaac Hall, Leachman and Sherwood, under the style of "The Ferguson Mining Company." Mr. Robert Francis is the Superintendent, and Mr. Joseph the blacksmith. The total number of men employed about the mine and mill is sixteen. The shaft, which is about 212 feet, and the hoisting works are about 1,000 feet from the mouth of the main tunnel. The hoisting works consists of an undershot horse whim of the latest improvement, capable of hoisting 1,000 pounds to the bucket. The mill crushes about 12 tons of quartz in the 24 hours. The company obtain their supplies principally from Sonora, Tuolumne County. Our informant says the rock is rich in free gold and the company is prospering.

HITE'S COVE.

This well-known locality and mine, known as the Hite Mine, is too well known to require much comment. Mr. Hite was the discoverer of the mine many years ago, and is still the principal owner. If the figures could be produced of the enormous amount of gold taken from this mine, it would no doubt astonish the world.

GEORGIA POINT.

The Georgia Point Mine is located in Hite's Cove, owned and worked by the South Hite Gold Mining Company, a corporation organized under the laws of the State of Connecticut. Mr. W. E. Brown is the Superintendent. The Company is principally engaged in opening up the mine by sinking shafts and running tunnels, etc. We have not visited this locality since the South Hite Gold Mining Company has been in vogue. Reports from that quarter are exceedingly favorable.

ASSESSOR'S REPORT.

The last Assessor's report proves that Mariposa is, by no means, at a standstill. From it we learn that, in 1878, there were 22,978 acres of land enclosed, and 3,521 acres cultivated. The agricultural products are as follows: Acres in wheat, 96¼; yield, 240 bushels. Acres in barley, 693; yield, 2,920 bushels. Acres in rye, 27; yield, 40 bushels. In corn, 18 acres; yield, 335 bushels. In potatoes, 36¼ acres; seventy-five tons. In onions, 120 acres; 2,620 bushels. In hay, 2,600 acres; 1,508 tons. Butter, 1,050 pounds. Wool, 376,000. The value of the fruit crop could not be exactly got at, but it is evident that it must have been considerable, since it was plucked from 4 lemon trees, 58 orange trees, 1 olive, 4,431 apple trees, 966 pear trees, 3,286 peach trees, 570 plum trees, 153 cherries, 78 nectarines, 141 quince, 163 apricot, 504 figs, 80 acres of grape vines, averaging 750 vines per acre.

The live stock numbers 1,700 horses; mules, 264; horned cattle, 5,067; sheep, including 13,281 lambs, 65,517; Cashmere and Angora goats, 35; hogs, 6,289.

The list of improvements shows five sawmills (four steam and one water power), which turned out 1,820,000 feet of lumber; twenty-six quartz mills, which crushed 23,331 tons of ore; twenty-six mining ditches, 93¾ miles in length, and seven irrigating ditches, valued at $375, used for gardens and vineyards.

The assessed value of real estate in 1878 was $558,157; the assessed value of improvements, $321,670; the assessed value of personal property, $415,921—making a total of $1,205,748. Mariposa was organized in 1850. It contains 1,440 square miles, and has a population of about 7,000, of whom 1,185 are registered voters. Average value of land per acre, two dollars to two dollars and a half.

NAPA COUNTY.

By CHARLES A. GARDNER, Editor St. Helena Star.

LOCATION.

Napa County is in that part of California lying between the Sacramento River and the sea, and just north of, though not quite adjoining, the bay of San Francisco. It is irregular in shape, being longest north and south, and its southerly point reaches to within about five miles of Vallejo, or twenty-seven of San Francisco, It is bounded on the north by Lake County, east by Yolo and Solano, south by Solano, and west by Sonoma.

EXTENT AND VALUATION.

It is about 50 miles in extreme length, by about 26 in breadth, and contains about 800 square miles. Of this area, only about 5,298 square miles, or 338,169 acres, are represented on the assessment roll. Of this, in round numbers, 69,000 acres is rated as first grade land, assessed at an average value of $39 25 per acre; 38,000 acres as second grade, assessed at $13 45; 46,000 acres as third grade, assessed at $6 96, and 184,000 acres as fourth grade, assessed at $2 34. The low grade is mountain land. The total assessed valuation of all property in the county is about $8,000,000.

TOPOGRAPHY.

The county is a succession of mountain ranges and valleys, with a general northwest and southeast direction. Beginning on the west, one continuous range, from 2,000 feet down, in height, lies between it and Sonoma County. On the northeasterly side of this range, and extending nearly the whole length of the county, lies Napa Valley, about thirty-five miles in length by one to five miles wide. Next easterly is Conn Valley, half a mile wide by six long. South of this is Wooden Valley, three miles long by one wide. East of Conn is Chiles Valley, ten miles long by half a mile wide. North and east of Chiles is Pope Valley, eight miles long by one mile wide. South of Pope is Capelle Valley, two miles long and half a mile wide. East of Pope is Berryessa Valley, seven miles long by one and a half wide. East of Berryessa is a high range of mountains—probably 3,000 feet—that separates Napa from Yolo and Solano. We find thus an area in these valleys of, say—Napa, 87½ square miles; Conn, 3; Wooden, 3; Chiles, 5; Pope, 8; Capella, 1; Berryessa, 10½; total, 118 square miles.

Besides this, the southern point of the county extends into what is known as the Suscol Valley, containing perhaps twenty-five square miles, and enough other level land might perhaps be found to raise the total to 175. Thus it will be seen that less than one-quarter of the whole area is level land. The remainder is mountainous, ranging in height from the lowest foothill to Mount St. Helena, 4,343 feet.

POPULATION.

The population of this county is estimated at 14,000. (The census of 1880 gives it at 13,235.) The vote at the Constitutional election was 2,163. Of this Napa cast 1,112 votes, St. Helena 336, Calistoga 212, Yountville 188, Suscol 49, Rutherford 37, Chiles Valley 34, Monticello 71, Knoxville 54, Pope Valley 70. Napa, Yountville, Rutherford, St. Helena and Calistoga are in Napa Valley, their combined vote—1,885—showing that about seven-eighths of the whole population of the county are in the Napa Valley precincts.

TOWNS.

The county seat and chief town is Napa (formerly known as Napa City), a thriving and beautiful little city in Napa Valley, at the head of navigation on Napa River, and distance only thirty-seven miles from San Francisco. Steamers run regularly between it and San Francisco, as also many sail vessels, affording very cheap freighting from San Francisco. The principal passenger traffic—and nearly all the freight traffic for points above Napa—is done by the Napa branch of the California Pacific Railroad, which runs two passenger trains and one freight train each way daily—except Sundays—when one passenger train is run each way. These trains, connecting at Vallejo with steamer for San Francisco, make the time between Napa and that city in about two hours and three-quarters—fare, $1 50. Napa has a population of about $5,000. It is well built in its residence part; the business part, with few exceptions, not so well, its principal business street—Main—being the least attractive portion of the city. The principal feature is the magnificent Napa State Asylum for the Insane, one of the very finest buildings in the State, and costing, with all of its equipments, about $1,500,000. It can accommodate 500 to 600 patients, but is already crowded with near 800. The new Court House, completed 1879, cost from $60,000 to $70,000, and is a fine looking building. The Presbyterian Church, built six years ago, cost over $30,000, and is a beautiful structure. The best business buildings are the new Odd Fellows' building and the Palace Hotel, costing about $20,000. Napa contains many elegant private residences, chief among which are those of George N. Cornwell, of the Redington Mining Company, and George E. Goodman, of the banking firm of James H. Goodman & Co. It contains three very fine private schools: the Napa Collegiate Institute, the Napa Ladies' Seminary, and Oak Mound School for Boys, each of which adds largely to the business of the city. It has three newspapers, the *Register* (Republican), daily and weekly, Francis & Spalding, proprietors; the *Reporter* (Democratic), weekly, Mrs. George W. Gift, proprietress, and the *Gold Dollar* (New Constitution), weekly, Cooper & Ebersold, proprietors. The two former are very fine papers, and a credit to the county. The latter is a small affair, lately started, and is scarcely big enough to criticise as yet. A college paper, entitled the *Napa Classic*, is also issued monthly by the Faculty of Napa Collegiate Institute. She had 620 school children enrolled in the public schools at the last term, and about 300 attend the private schools. She has nine churches, which cost about as follows: Presbyterian, $30,000; Methodist, $12,000; Catholic, $7,000; Episcopal, $6,000; Christian, $5,000; Baptist, $4,000; German Reform, $3,000; African Methodist, $2,500; Seventh Day Advent, $2,000.

She has two excellent banking institutions, which have proven steadfast and reliable during the severest storms that have ever swept over the State. The Bank of Napa, C. Harrison, President, and W. C. Watson, Cashier, is an incorporated bank of deposits and loan, with $250,000 capital. The Napa Valley Savings and Loan Society is an incorporated society for receiving deposits and making loans, George E. Goodman, President, and Richard Dudding, Secretary. James H. Goodman & Co., private bankers, do business the same as an incorporated bank. The city has also several important manufacturing institutions, viz: the tannery of B. F. Sawyer & Co., the Bachelder Manufacturing Co. (making windmills, boxes, wine tanks, etc.); the Napa Planing Mills, Ira Gilchrist, proprietor; the Napa Plough Company, making the "Napa Gang Plough," and having a foundry in connection; the Napa Gas Works, owned by James H. Goodwin & Co.; the Vernon

Mills (flouring); tannery of McBain & Co., and glue factory, by Chas. N. Souther. There is one fine engine company (Pioneer, No. 1), and a public library. The cemetery, "Tulocay," is one of the most beautiful in the State. Napa was begun in 1848, is now an incorporated city, and at the last city election polled 632 votes.

The second town in the county is St. Helena, eighteen miles above Napa, containing 1,200 to 1,500 inhabitants. It has about three hundred school children, of whom something over two hundred were enrolled at the public school last term. It is an incorporated town, and at the last town election polled 179 votes. It contains no very expensive business houses, but many elegant residences, being the dwelling place of many gentlemen who do business elsewhere. Chief among them are those of Mrs. A. J. Pope, of San Francisco; W. P. Fuller, of San Francisco; Mrs. Sarah A. Bowen, of San Francisco; John Lewelling, of St. Helena; D. B. Carver, of St. Helena; E. W. Woodward, of Oakland; J. B. Chiles, George K. Gluyas, Seneca Ewer, John C. Weinberger and D. O. Hunt, of St. Helena. The town has a public water works (the only town in the county thus favored), and has a full supply of pure mountain water through her streets at all times. The Press is represented by the St. Helena *Star* (weekly, non-partisan), Charles A. Gardner, editor and proprietor. There are five churches, Presbyterian, Catholic, Baptist, Methodist and Episcopal, the two former of which cost about $5,000 each; the three latter are cheaper structures. A special bonded warehouse of the Internal Revenue Department is also located here. It has a good public school, with four teachers, and a promising private school, known as the St. Helena High School, conducted by Professor and Mrs. George W. Drew. St. Helena is the station for the White Sulphur Springs, a beautiful Summer resort, two miles west; Crystal Springs, three miles north, and all the Pope Valley country—including the noted Ætna Springs—on the east. The chief business of St. Helena is wine making, of which its immediate vicinity produces from 800,000 to 900,000 gallons a year. The whole county has over forty wine cellars, and made over 2,000,000 gallons last year.

Calistoga is a beautiful town at the terminus of the railroad, near the bend of the valley, twenty-seven miles above Napa and sixty-four from San Francisco. It contains about 800 inhabitants. The precinct polled at the last general election 212 votes, and the number of school children enrolled is 240. Its principal feature is the celebrated Hot Springs, fitted up so magnificently long ago by Sam Brannan, and for years the "gilt-edge" of all Summer-resort style in California. The Springs went down, however, with Sam's financial decadence, and for years past have been little better than a closed establishment, slowly going to decay. There is a prospect now, however, of a revival of their ancient glory, as Major George W. Johnson, now of the Cosmopolitan Hotel here, is about taking hold of them, and if he does, will surely restore all of their old-time popularity. An excellent newspaper is printed here, the *Calistogian*, by J. L. Mulber, a gentleman lately from New York State, who is an excellent printer and a good journalist. The *Calistogian* is published weekly, and is non-partisan in politics. Calistoga being, as before stated, at the end of the railroad, is the centre of a large stage business, lines running regularly hence to all parts of Lake County on the one hand, to Knight's Valley, the Geysers and Santa Rosa on the other. A large freight shipment is also done from here, especially in quicksilver and sulphur from the Lake County mines. The famous Petrified Forest is distant from here five and a half miles, and the Geysers twenty-six miles. The town contains some neat residences, prominent among which are those of A. P. Klint, W. F. Fisher and Mayor Culver. There are two churches, Presbyterian and Methodist, with a Sunday School attached to each. A town hall, 70x40, has lately been built by W. S. Bryant. The best business building is the Magnolia Hotel, a very fine structure, owned and occupied by A. J. Chesebro.

The quicksilver mines were once a source of great profit to Calistoga, but that interest has almost entirely died out with the fall in the value of this metal. Gold and silver mining, too, attracted considerable attention, and a quartz mill was built on the side of Mount St. Helena. This, likewise, was abandoned, and for years has been rusting; but renewed interest is manifested now—prospecting is going on extensively, though quietly, and it is said that the quartz-mill will soon be started up again.

Yountville is a town of perhaps 300, on the line of the railroad, nine miles above Napa. Its chief importance arises from the location there of the large wine-cellar, distillery and vineyards of G. Groizinger, one of the most enterprising viniculturists of the State. His establishment is one of the best.

Oakville and Rutherford, between Yountville and St. Helena, are railroad stations of considerable business, and the centre of fine farming communities.

Monticello, in Berryessa Valley, is a small farming town of about 200 people.

Knoxville is a mining town at the Redington mine (quicksilver), in the extreme northeastern corner of the county, has about 300 inhabitants. It is made up entirely of the people of the mine, is owned *in toto* by the mining company, and depends entirely upon it for existence. This completes the towns of Napa County.

WATER.

Napa County is well watered, averaging about twenty-four inches a year rainfall, and has rain regularly nearly every month in the year. A drought is unknown and crops never fail.

WATERSHED.

Napa Valley is drained off by Napa River to the bay, at Vallejo. Pope, Berryessa and the most of the eastern part of the county are drained by the Putah River and its tributaries into the Sacramento River.

CLIMATE.

The climate of Napa and country adjacent is cool—tempered by bay winds—and with considerable fog. Up the valleys it is warmer, often rising to 100° and over in the Summer, but of a dry, pure and beautiful atmosphere.

SOIL.

The soil in the valleys is rich enough, and raises good grain, but as the valleys are but small, the bulk of the land is only fit for fruit or grazing. These valleys formerly raised immense crops of grain, but now are so much worn as to be reduced in fertility at least one-half. They will keep depreciating in that respect until a system of fertilizing is adopted. Outside of this "grain land," the land is gravelly or rocky, and raises excellent grapes and all kinds of fruit.

PRODUCTIONS.

The great product of the county—and almost the only increasing one—is wine. A brief review of the others will tend to a consideration of this. The latest county statistics are the Assessor's of 1877, and the grain yield showed therein is probably as large as it has been since, or ever will be. It is as follows: Wheat, 545,530 bushels; barley, 93,598 bushels; corn, 21,795 bushels; oats, 7,115 bushels; rye, 266 bushels; hops, 68,000 pounds; hay, 12,840 tons; butter, 43,600 pounds; cheese, 3,000 pounds; wool, 166,810 pounds; total value of fruit, $103,310; acres of grapes, 3,360; wine made, 575,462 gallons; brandy made, 8,230 gallons; sheep, 61,103; hogs, 9,397; horned cattle, 7,983; flour made, 22,105 barrels; lumber sawed, 400,000 feet; miles of railroad, 41. The only one of these items worth review is that of wine. While other things have remained stationary, or gone back, wine-making has advanced with gigantic strides, until last year the *Star's* annual report footed up two million one hundred thousand gallons in various cellars, as follows:

St. Helena District—Charles Krug, 225,000; Wm. Scheffler, 140,000; Beringer Brothers, 100,000;

John Thomann, 90,000; T. A. Glague, 60,000; J. C. Weinberger, 55,000; J. Lewelling, 45,000; J. Laurent, 45,000; F. & A. Sciaroni, 42,000; Fred Mitzner & Co., 42,000; Tosetti & Salmini, 30,000; R. S. Heath, 20,000; J. H. McCord, 20,000; Jacob Schram, 15,000; J. J. H. Medean, 15,000; Rossi & Co., 9,000; Charles Lemme, 9,000; Conrad Wegele, 7,500; W. W. Lyman, 6,000; Trumpler & Lenthold, 5,000; C. T. McEuchran, 3,000; L. Roulit & Co., 1,100; C. G. Klotz, 1,000. Total, 985,600.

Yountville and Oakville—G. Groezinger, 180,000; H. W. Crabb, 165,000; G. Pampel, 150,000; Terrill Grigsby, 55,000; Brun & Co., 30,000; Jean Monod, 25,000. Total, 605,000.

Napa—P. Van Bever, 250,000; G. Barth, 100,000; G. Migliavacca, 70,000; Hagen Brothers, 35,000; B. Semorile, 25,000; Frank Salmini, 15,000; J. Mathew, 5,000; F. Borreo, 5,000; S. A. Roney, 3,000; Dr. Pettengill, 2,000. Total, 510,000.

This represents, it will be seen, thirty-nine cellars. This number is yearly increasing, and the vineyards spreading farther up the hillsides. The hill land is better than the valley for grapes, not yielding so big a crop but making better wine. The business is yet only in its infancy. There are probably not over six square miles of grapes in the county. The total area well adapted to it—and better adapted to it than anything else—is not less than fifty times that amount. Multiply our present product by 50 and the result is over a hundred million gallons, an amount of which we are perfectly capable. Pope, Berryessa and the minor valleys are principally devoted to grain; the intervening mountains to grazing. The county affords a large number of pleasant Summer resorts, with most beneficial climate and waters for invalids; but a consideration of these would lead beyond the allowed limits of this article. The mining is now confined to two or three mines (quicksilver), the Redington, the Manhattan and the Phœnix.

VENTURA COUNTY.

By THOMAS J. NEWBY, Esq.

Ventura County was organized by a special Act of the Legislature of 1871-2, and created out of the eastern half of Santa Barbara County. It is bounded on the north by Santa Barbara and Kern counties, east by Los Angeles, and south and southwest by the Pacific Ocean and west by the Pacific Ocean and Santa Barbara County, and includes the islands of San Nicholas and Anacapa. Area, 1,096,000 acres, 175,000 of which are arable and about 150,000 acres of grazing land. There are about 80,000 acres under cultivation. Assessed value of all property for 1878, $3,270,161. Average assessed value of all lands, $4 50 per acre. Resources, agricultural and mineral. Population of the county, 7,000.

Ventura County, although one of the youngest in the State, has, on account of its delightful climate, the extent and fertility of its soil, risen rapidly to a foremost rank in commercial importance. It is yet in its infancy, and a grand future awaits the development of its marvellous resources. It is scarcely more than a dozen years since the beginning of the new civilization, the advent of the modern plough, the telegraph, the school-book, and six years ago the first printing press. Over thousands upon thousands of as good land as the crow flies over, the song of the steam corn-sheller is heard in place of howling coyotes. Generous fields of wheat and barley bend their treasures before the scythe of improved headers and reapers, drawn by horses of good stock and driven by thrifty hands, where but recently the vaquero, with whirling lassoo, galloped his broncho gayly over the untilled soil after bands of horses and cattle, and the herder smoked his cigarette, lazily watching his flock of sheep and goats. Excellent flouring and grist mills, driven by water, have supplanted the old Mexican *matate* (a stone slab and pestle, for grinding corn), and the more vigorous notes of Weber, Chickering and Mason & Hamlin are somewhat subduing the seductive tones of the Spanish guitar. Bull fights are modernized into political caucuses, and old scrub stock in horses, cattle and sheep are stepping down and out to make room for blood animals. Lumber-laden schooners from the upper coast of California and Oregon, returning to San Francisco with our grain and oil, and the nervous shrieks from steamers at our wharves, at Captain Robert's oil wells, and the locomotive of the Southern Pacific Railroad, on our northeastern border, are but suggestions of what is yet to come. It will be remembered that it is a century since the Spanish padres established their missions along this coast, but in all this time there has been nothing done towards developing its resources agriculturally. The native Californians were not progressive. Their houses were made of adobe. They raised small patches of frijoles (beans), maize (corn) and some vegetables, but their main reliance was upon their flocks and herds. The mission orchards usually supplied figs, olives, and a few other semi-tropical fruits. They cultivated the Mission grape and made wine. Comparatively isolated in this sunny clime, where Nature was so bountiful, they worshipped the Cross devoutly, observed their religious holidays faithfully, smoked cigarettes, thrummed the guitar, danced, drank wine, and lived a free and happy life, with little care for the present or future. But all is changed. The new civilization cut up their once boundless pastures into grain fields. Unable to cope with their more industrious and crafty neighbors, they are gradually turning their faces toward Northern Mexico. The better classes are cultivated, courteous and polite in their intercourse with Americans. Their children are handsome and many of the senoritas models of beauty. They possess an artless charm—a native witchery of grace in manner and motion that would fire the heart of a Saratoga belle with envy.

Under the Mexican Government the principal part of California was cut up into large ranches, each of which comprised a number of leagues, or several thousands of acres of land. With the exception of a small portion of Government land, Ventura County is divided up into the following named ranchos, with the number of acres contained in each: La Colonia, 45,000 acres—35,000 acres arable. This fine ranch lies south of the Santa Clara River, has been partitioned, and the greater portion of it sold to small owners. It is well populated, has several schools, is in the Valley of Santa Clara, and contains some of the very best farming land and the finest artesian wells in the State. This is a great barley and hay-raising district. Hueneme is its shipping port. For further information, address Thomas R. Bard, Hueneme.

SIMI AND LAS POSES.

These two ranches are situated above La Colonia, in the same valley and tributaries, and contain together 139,000 acres, of which about one-fourth is tillable, a great portion of it excellent wheat and flax lands They contain also thou-

sands of acres of fine grazing land, large bodies of timber, a fine climate, and soil for the raising of semi-tropical fruits. This is an excellent opportunity for a colony. Address Thomas R. Bard, Hueneme, or E. C. Hoar and A. W. Browne (Hueneme), who reside upon the ranch.

THE CONEGO RANCHO

Lies south and east, with its southern boundary ten miles from the coast. This mountain valley lies 1,700 feet above sea level, and is a great wheat-growing section. It is protected from the sea by high mountain ranges; has a large body of grazing land, and an immense growth of fine white and live oak timber. The climate is delightful, especially for pulmonary sufferers, and the scenery grand and impressive. Good schools, hotels, etc. H. W. Mills may be addressed at Newbury Park. A daily line of stages runs through, between Ventura and Los Angeles. The rancho contains 49,199 acres, about one-third of which is arable.

GUADALASCA RANCHO

Contains 31,000 acres, and is situated in the southeastern part of the county. It borders upon the sea, and is principally mountainous. There are about 10,000 acres of arable and large tracts of fine grazing land. It is devoted to barley, corn and stock-raising.

THE CALLEGNAS

Lies east of La Colonia, contains 10,000 acres, of which about 4,000 acres can be cultivated, and 4,000 acres of good grazing lands. There are 3,000 acres under cultivation; also a small vineyard, producing excellent wine. Juan Camarillo, the owner, may be addressed at Ventura.

THE TAPO RANCHO

Lies in the northeast corner of the Simi. This fine ranch belongs to the estate of Francisco de la Guerra, and has been established for sixty years. It contains 15,000 acres, about 1,500 of which are arable, the balance grazing lands. It is well protected by a wall of mountains; the climate and soil well adapted to growing semi-tropical fruits. Sublime scenery, a fine old mansion, fruits of every description and a forty-year-old vineyard where the celebrated Tapo wine and brandies are made.

SANTA CLARA DEL NORTE

Lies six miles east of Ventura and along the Santa Clara River. It contains 13,988 acres, the greater portion being under cultivation. It was settled early and contains some large and fine vineyards, where immense quantities of wine are made. The wine sells readily at 50 cents per gallon and the wine growers challenge the State to produce a better article. Thrifty and extensive orchards, fine little farms cut off and owned by different parties, and a good neighborhood. The greater portion of the ranch is owned by the Schiappietra Bros., who may be addressed at Ventura. Besides the artesian wells, the ranch may be irrigated from the Santa Clara River. Amongst other products there are 1,000 acres in flax the present season. Lying along the sea-shore between Ventura and the mouth of the Santa Clara River, a distance of six miles, are the well-cultivated ranchos of D. W. Thompson, containing 2,300, and Oliva's ranch, of 2,500 acres. The justly celebrated

SANTA PAULA Y SALICOY RANCHO

Lies immediately east and northeast of the town of Ventura, extending along the Santa Clara Valley, between the river of that name and the foothills, some seventeen miles distant. On it are situated the villages of Saticoy, nine miles, and Santa Paula, fifteen miles distant from Ventura. It was purchased several years ago by the great orchardists, William Briggs, with the view of establishing immense orchards. Being farther south he supposed his fruits would ripen earlier, enabling him to get them into the San Francisco markets ahead of his northern competitors. He set out 25,000 fruit trees, but time proved this idea a fallacy. In the Fall of 1866 Mr. E. B. Higgins purchased the four leagues of land of George G. Briggs, and had it surveyed and subdivided. In 1867, the liberal terms upon which he offered it for sale produced the first uprising for farming lands, and the general immigration into Southern California. It has for some time been owned by small farmers, sustains a large population, with churches, schools, pleasant homes, and is one of the most beautiful and flourishing portions of this coast. It has a warm exposure, sloping south and eastward, and affords a fine view of the sea and islands. It is peculiarly well adapted to the successful growing of all the semi-tropical fruits, as well as those of hardier climes.

THE SESPE RANCHO

Lies along the valley north and northeastward. It contains about 9,000 acres, nearly all excellent land for corn, wheat, barley, flax, vegetables and semi-tropical fruits, and much of it may be irrigated. There is here a large strip of government land, which is settled up by a thriving and industrious population. Here, too, are a great many apiaries, as the finest bee pasturage in the county abounds along the foothills. At the head of the Santa Clara Valley, and where it dips into the San Fernando, is the

SAN FRANCISCO RANCHO,

Containing 11,500 acres of grazing, and 3,000 acres of tillable land. It is favorably located and owned principally by H. M. Newhall, of San Francisco. A portion of this rancho lies in Los Angeles County. The station called Newhall, on the S. P. R. R., is located here. About ten miles down the Santa Clara Valley is located the famous

COMULOS RANCHO,

Where the justly-celebrated Comulos wine and brandies are produced. This place is owned by Ignacio del Valle, and is under a high state of cultivation. In is one of the most beautiful places in all Southern California—large and thrifty orchards, a fine residence, and surroundings in the old Hidalgo style, orange and lemon trees in bearing, and extensive buildings for wine manufacture. They have just commenced the manufacture of a fine grade of olive oil. This beautiful place is but about thirteen years old, and is an evidence of what may be done in this county in the way of growing fruits of all varieties. This fine place is on the San Francisco Rancho.

EX MISSION RANCHO

Derives its name from the old Mission of San Buena Ventura. A part of the town is situated within its limits. It comprises 48,000 acres, of which about 3,500 acres are arable; and there is also a great deal of grazing land. Along its northern boundary is a strip of Government land in the oil belt, and south of the Ojai. The tillable land is fertile, has a fine southern exposure along the base of its foot-hills, overlooking the sea. It has been subdivided into small tracts, and is thickly settled.

CANADA LANGA RANCHO

Lies north of Ventura, along the river of that name, and is well protected by the foothills on either side. It contains 6,500 acres, of which over 1,000 are tillable and under a high state of cultivation. Here are to be found some beautiful suburban homes—handsome villas with fine orchards—and well-planned grounds, adorned with flowers and ornamental shrubbery.

THE SAN MIGUELITO RANCHO,

Containing over 8,000 acres, lies west of the Ventura River, with the ocean for its southern boundary. There is but little available land on it, being used principally for grazing. Close to this rancho is the vast deposit of kaolin or rock soap, which has been mined, pressed and sold by the Ventura Rock Soap Company. The rancho belongs to Colonel G. B. Taylor. Following northwardly up the beautiful Cañada Langa from the sea shoe at Ventura, a distance of twelve miles, leads up into the

OJAI RANCHO,

Containing one of the most beautiful valleys on the continent. The Ojai Rancho contains 17,600 acres, about 10,000 acres of which are tillable and under good cultivation. It was long age cut up into small farms, and is the great wheat growing section. It contains the village of Nordhoff, in which there is a fine brick school house, where divine service is held. The valley is covered with a luxuriant growth of live and white oak timber, with some cottonwood. It is walled in by mountains, and is about 1,000 feet above sea level. Here are some fine farms, thrifty orchards, and well-stocked apiaries. The air is pure, and the scenery grand and romantic. There is some Government land, which is about all taken up and occupied. There are a great many petroleum springs in the vicinity. Lying west of Ventura River—which is the boundary—and inclosed within the same circle of mountains is the

SANTA ANA RANCHO,

Containing 17,705 acres, of which about 4,000 acres are arable. It is in most respects the same as the Ojai, being covered with a fine growth of timber, and well adapted to wheat-raising. It has a great number of well cultivated farms and a large body of grazing land. Further particulars may be obtained by addressing A. D. Barnard, Ventura. The above list contains a brief description of the original grants, and the number of acres they contain. They have been mostly cut up into small farms, and are still being sold off in lots to suit purchasers. These lands, embracing some of the most fertile on the coast, and capable of producing, in abundance, about everything grown on the continent, either in fruits, cereals or vegetables, may be purchased at low prices and on good terms. It is safe to say, briefly, that taking everything into consideration—delightful and healthy climate, fertility of the soil, and all other natural advantages, there is not a spot on the globe that offers any better inducements to the industrious man who wishes to make himself and family a comfortable and happy home. Almost every variety of soil and situation may be found to suit the grower of corn, barley, wheat, oats, flax, potatoes, beans and all classes of vegetables. The stock-raiser finds every condition favorable for raising hogs, horned cattle, horses, sheep and goats; the fruit-grower all that is required to grow successfully every variety of fruit known to semi-tropical and north temperate climes, and the hillsides and cañons afford the finest pasturage in the world for the bee-keeper.

SAN BUENAVENTURA.

The principal town and county seat is beautifully situated on the seashore, about 311 miles southeast of San Francisco. The town is handsomely located on a slightly elevated bench from 20 to 50 feet above high tide. The surf rolls along the foot of the streets running north and south. It is an incorporated town and contains a population of 2,000 souls. Perhaps no town on the coast has a more abundant supply of good pure water. It is furnished by the Santa Ana Water Company, and brought at considerable expense from the Ventura river, which is supplied from the cool mountain streams on the north. It is conveyed down in a ditch to an immense reservoir situated on an elevation of over 150 feet, from whence it is conducted in ample pipes throughout the streets. There is sufficient pressure to throw a natural stream over the highest houses, and of sufficient quantity for household uses, irrigating and running machinery for manufacturing purposes. There are are some first-class stores, good hotels, and the usual number of shops, saloons, and small places of business. There are four churches—the Methodist, Presbyterian, Congregational and Catholic. There is also an Episcopal organization and a goodly number of Liberals and Spiritualists. The most valuable improvement is the Public Library and reading room, which is owned by the town. It contains about 1,000 volumes, including history, poetry and miscellaneous literature. The reading room is free to all, and on its tables are the leading magazines and pictorials of the day.

I. O. O. F. Lodge No. 201, F. & A. M. Lodge No. 214, and Ventura Royal Arch Chapter No. 50, hold regular meetings in their halls; also, Constancy Lodge, No. 209, I. O. G. T., is flourishing. In the rear of the century-old olive trees of the old Mission orchard, stands a neat and substantially built brick Court House, which cost $10,000. Crowning the summit of a hill is a large and well built brick public school house, costing a like sum. It is built in the modern style, furnished with the latest improvements, and is always supplied with a corps of competent teachers. There are other school buildings, beside a number of private schools. The professions are well represented. The Monumental Hook and Ladder Company is well equipped, and has a building and bell-tower for its apparatus. Bartlett's and the Ventura brass bands discourse excellent music.

The old Mission of San Buenaventura was founded by the Spanish missionaries in 1782. Its first centennial will shortly be celebrated with becoming honors. The old Mission Church, surmounted by its Moorish towers, still stands in an excellent state of preservation and is used as a place of worship. The same old bells brought over from Spain, that startled the rude ear of the Indian nearly 100 years ago, still ring out from the old tower, and have rang in and out many changes. There are but three or four old Indians left to heed its calling. Standing near are two ancient palm trees, said to be the largest in the State. Their long slender foliage swing hither and thither in the wind, presenting a very beautiful appearance. The old buildings around the church, with their tiled roofs, are falling into decay, and the old orchard is cut down. The new civilization contrasts vividly here with the old. There are two oil refineries where our crude oil is refined and sold in the markets, both illuminating and lubricating. A good and substantially built wharf, 1,200 feet long, extends into deep water, where steamers and schooners land and lie in safety. Connected with the wharf are warehouses (which will hold 20,000 centals of grain), which were built at a cost of $150,000. The Pacific Coast Steamship Co's steamers land here weekly from San Francisco, going south, and also on returning. There is also a weekly freight steamer, and another passenger steamer will shortly be put upon the line. A number of schooners ply betwixt our ports and the upper coasts and Oregon, bringing down lumber and carrying back grain to San Francisco. The Telegraph Stage Company's coaches make close connections daily with the Southern Pacific Railroad at Newhall (fifty miles distant northeast), carrying passengers and the mails. The telegraph stages run northwest through Santa Barbara (distance thirty miles) and San Luis Obispo. There are private lines running between Ventura and Santa Barbara, carrying passengers. A tri-weekly stage runs from Ventura to Los Angeles to accommodate passengers who do not wish to take the cars at Newhall. There is a tri-weekly mail to Hueneme and Newberry Park, on the Conego. The Western Union Telegraph Company have an office here, Thomas Gray, operator; also, Wells, Fargo & Co.'s express, John J. Sheridan, agent. W. S. McKee runs a daily hack, carrying mails and passengers to Nordhoff, in the Ojai Valley, and for the accommodation of McKee's Glen Cottage Hotel. H. F. Jewell runs a hack for the accommodation of his hotel and cottages at the famous Matilica Hot Sulphur Springs. Ventura has a daily mail—north, south and east. Colonel J. W. Goodwin is Postmaster.

There are two weekly newspapers here, the *Free Press*, published by McLean & McCoy, and the *Ventura Signal*, by Sheridan Brothers. They are both honestly and ably conducted, and devoted to the interests and development of Ventura County in particular and Southern California in general.

VENTURA

Is a quiet, orderly town, and has never sought to outgrow the rich agricultural country behind

it. A peculiar feature is its neat and clean cottages and well-kept flower gardens. Ventura avenue has some handsome residences and one of the finest drives on the coast. The scenery is sublime. Eastward the eye sweeps over the broad Santa Clara Valley, resting on the distant Guadalusea range of mountains. To the south and west the grand old Pacific with the mountainous islands of Anacapa and Santa Cruz, twenty-five miles distant, where the mirage often creates fantastic visions, building castles, domes and bridges. On the north serrated hills rise one above another, ending in the Topa Topa Peak, 4,744 feet above sea level and twenty miles distant. Almost every State in the Union and many portions of the world are represented amongst her citizens, who are generally hospitable, intelligent and progressive.

HUENEME,

The only other seaport, and the next largest town in the county, is located twelve miles below Ventura. It is in the heart of a rich agricultural region, and is the shipping point for a large section of country. It has an excellent wharf, extending 800 feet, where steamers and sailing vessels lie in safety. Here are some of the largest warehouses south of San Francisco for the storage of grain. Warehouse "A" is 56 feet long by 315 feet wide, with a six-foot platform extending the entire length on the east. Warehouse "B," 66 by 161 feet, with a twelve-foot platform on the west side. Warehouse "C," 66 by 312 feet, with a twelve-foot platform extending along the west side. The wharf is 40 feet wide at the outer, and 18 feet at the shore end, with car-track the entire length, enabling the company to handle grain very rapidly. There are twenty-four cars, each carrying one hundred sacks of grain, which are kept loaded for ready handling in loading a steamer or schooner. The Hueneme Wharf and Lighter Company own these improvements. Thos. R. Bard, who is largely interested, is President, and A. B. Stovell, wharfinger and agent for the Pacific Coast Steamship Company. Near the wharf, and within a few feet of the surf, is one of the best artesian wells on the coast, from which the town, as well as steamers, are supplied. The water is slightly impregnated with sulphur and iron. There is a lighthouse on Point Hueneme. The town contains several stores, smith-shops, etc., and a fine school house, where worship is held, and here, as in all other portions of the county, interesting Sunday Schools. R. G. Livingston is Postmaster, and A. B. Stovell telegraph operator.

SANTA PAULA,

The next town in size, is delightfully situated on the Santa Clara River, in the centre of a choice region for all classes of farming, and especially adapted to the successful growing of semi-tropical fruits. It occupies a plateau near the foothills, about sixteen miles northeast from Ventura, and contains a population of about 250 inhabitants. The town is amply supplied with water brought down from the Santa Paula Creek into a reservoir situated on an elevation of 85 feet, from whence it is distributed in pipes. Blanchard & Bradley's flouring mills are situated at the mouth of the cañon on the northern part of the town. They are run by water power obtained from the Santa Paula Creek, and manufacture an excellent grade of flour, which commands a large and ready sale. These gentlemen are also owners of the 100-acre orange orchard so attractive to the traveller entering the place from the west. It was planted in 1874, and is in a flourishing condition, some of the trees (especially the sweet-rind lemon) making a growth of from six to eight feet the past season. The orchard is protected by lime hedges, Monterey cypress and blue-gums, and will soon come into bearing. Nearly all this fine section lies under irrigating ditches, and with its fertile soil - sloping exposure to the south and east, its protection from winds and fogs, its fine climate, renders it a garden spot which it already closely resembles. There are many beautiful little farms with thrifty orchards in the vicinity. It is also close to the great oil regions and the extensive apiaries of the Santa Paula and Sespo. The Farmer's Canal and Water Company's Ditch, carrying 400 inches of water, is taken out of the Santa Clara River, two-and-a-half miles above, flows through the village and about six miles below, irrigating a number of choice farms. There are two other ditches in operation, and a third is in contemplation, sweeping around high up on the base of the foothills, which will bring in and irrigate the very best portion for fruit growing. There is a good school house with all the modern improvements in furniture, and a good school library, and an average attendance of eighty pupils. The Methodists, Presbyterians, Baptists and Christians all have organizations and ministers, but having no church edifices, worship in the school house. The Union Sunday School is in a flourishing condition and meets here. There are a number of stores of general merchandise, shops, etc. Wells, Fargo & Co's Express has an agency. A good hotel is kept by C. N. Baker. A. H. Sheppard is Postmaster and telegraph operator. Dr. S. P. Guiberson, a gentleman of scientific and literary attainments, holds the scales of justice and adds to his other duties a real estate office. Taken all in all, Santa Paula has a promising future. The Telegraph Stage Company's coaches pass through daily, connecting with the Southern Pacific Railroad at Newhall. For further information address Dr. S. P. Guiberson.

SATICOY.

This promising village is situated on the Santa Clara River, about eight miles northeast of Ventura. Here are the famous Saticoy Springs, a great place in olden times for migratory Indians and Mexicans, and around which many a bloody tradition clusters. It is now the centre of a prosperous and thrifty settlement, and embraces some remarkably choice farms and young orchards. It commands a beautiful and uninterrupted view of the Broad Santa Clara Valley, with its mountain boundaries, the ocean and its islands. There are one or two stores and smith-shops to supply the neighborhood. There is an excellent school house, where Sunday schools and divine services are held. This community is above the average in culture, exhibits considerable musical talent and has a good brass band of a dozen pieces. Jules Quesnel, postmaster. For further information address E. B. Higgins, the original owner of the grant.

SPRINGFIELD

Is located on the old Conejo road, from Ventura to Los Angeles, twelve miles east of the former place, and three and a half northeast from Hueneme. It is in the centre of a prosperous agricultural region, and draws considerable trade from the back country. The soil hereabouts is very fertile, and the farms under good cultivation. The Santa Clara Water and Irrigating Ditch Company's ditch passes through the village. It will carry 2,000 inches of water, and irrigates a large number of farms. In the future, water will be taken from the Los Posas, and by bringing another ditch from the Santa Clara River, around the base of the hill, the greater portion of the country may be irrigated. The village contains two good stores, a hotel, blacksmith shop, and, near by, a good school-house, where religious services are held by different denominations. A. S. Clark, Postmaster.

NORDHOFF

Is situated fifteen miles north of Ventura, in the beautiful Ojai Valley, the great health resort of the Southern coast. The valley lies 1,000 feet above sea level, is protected from fogs and sea winds by a circular wall of mountains, affording one of the most perfect climates to be found in the world. The village is pleasantly located in the midst of groves of live and white oak trees. These trees give a pleasant shade and from their

branches depend fringes of long moss which add a picturesque charm to the landscape. There are two first-class country hotels for the benefit of invalids, tourists and the travelling public. A good brick public school house is furnished in modern style. Church services are held here by the Presbyterians and Methodists. There is also an interesting Sunday School. A description of the advantages of this wonderful valley as a health resort would require a separate chapter. Near by are the famous Matilija Hot Sulphur Springs, where there is a good hotel and cottages for the accommodation of invalids. Thomas Gilbert, merchant and Postmaster at Nordhoff may be addressed for particulars concerning this desirable region. Below will be found a carefully prepared table giving the acreage and the kinds of crops growing at the present time, which will convey to persons residing at a distance a concise idea of what is being done in Ventura County:

Barley, acres	36,000	Canary seed, acres	285
Corn, acres	19,000	Miscellaneous crops, including vegetables, tobacco, peanuts, etc, acres	670
Wheat, acres	13,000		
Beans, acres	1,800		
Oats, acres	550		
Potatoes, acres	300		
Flax, acres	1,250	Total, acres	73,655
Alfalfa, acres	900		

Harvesting of wheat and barley is going on at this writing (June 11th), and although the hot winds a short time ago did much damage, the yield bids fair to be very good. Corn is looking well. To the above may be added the number of acres in orchard and vineyard: General variety of fruits, 1,100 acres; English walnuts, 1,500 acres; oranges, 300 acres; lemons, 75 acres; vineyards, 210 acres. Total, 3,185 acres. The above list does not include a large number of olives and almonds. Limes are so plentiful as to be used for hedges, and are not reckoned.

The following exhibit of last year's operations may serve as a basis, but owing to partial failures the two preceding seasons, it is, perhaps, not up to the standard. The shipments made over the wharves at San Buenaventura, from May 1, 1878, to February 10, 1879, and Hueneme up to December 1, 1878: Barley, 241,179 sacks; wheat, 5,100 sacks; corn, 49,163 sacks; beans, 19,104 sacks; mustard seed, 1,701 sacks; canary seed, 2,263 sacks; potatoes, 710 sacks; rock-soap, 1,035 sacks; sea-shells, 200 sacks; sea moss, 30 bales; dried fish, 161 bales; wool, 1,399 bales; honey, 4,530 cases; miscellaneous merchandise, 250 tons; hogs, 1,022 head; oil, 649 barrels.

Freight received during same period: General merchandise, 5,000 tons; lumber, 2,033,230 feet.

Last year's wheat crop was a failure, owing to rust, and besides, we manufacture a large share of the crop into flour. Owing to the low price of hogs, a light shipment was made. There were, at the beginning of the present season, about 25,000 head of hogs on hand. During the dry year a large number of sheep were driven into Colorado and New Mexico. There were, at the beginning of the present season, about 56,000 head, and over 1,000 head of high-grade Angora goats.

OIL.

It is confidently believed by scientific men and good judges, that the oil interests of this section are paramount to all others, and it would not be surprising if the development of the oil resources should yet produce an excitement second only to that of the discovery of gold on Sutter Creek in 1849.

What is known as the oil belt comprises an area of fifty miles in length (and probably twenty-five in width), extending eastward through the county and on through Los Angeles County. Oil crops out into the sea at Carpenteria, in Santa Barbara County, and the hillsides and cañons are full of springs flowing out of the ground. The Los Angeles Oil Company, operating on the Sespe, in this county, twenty-seven miles from Ventura, struck a flow some time ago of 150 barrels per day, at a depth of 1,514 feet. The oil, which is of a fine quality, rises to within fifty feet of the surface, from whence it is pumped. The elevation of the wells is about 1,500 feet, and oil may be conducted in pipes over a smooth surface and without obstruction to the wharf at Ventura. The Southern California Petroleum Company, of which Adams, Thayer & Edwards are the principals, have leased the oil territory on the ex-mission lands. They have two wells and six tunnels and are flourishing. Edwards & Dubbs' Alta Oil Refinery, at Ventura, which has a capacity of refining twenty-five barrels per day. The Star Oil Company, represented by D. C. Scott, has a large territory and refinery at Ventura. They can refine thirty barrels per day. A party has just arrived from Pennsylvania who will establish a large refinery. Messrs. Remington & Davis and other parties are now boring, with hopes of success. A company near here has been furnishing the Santa Barbara Gas Company with oil for gas-making. In addition to the illuminating, a superior quality of lubricating oil is refined, which has a large sale. It is in use on the Central Pacific Railroad, and in many large manufacturing establishments in San Francisco. Crude oil is vastly cheaper and better than wood for fuel; and when its advantages over both wood and coal are known, there will not be a steamer on the ocean or steam engine on land but what will use it. Here in this oil belt are untold millions of money lying dormant, awaiting capital and enterprise to develop it. For further information on this all-important subject, address Captain Wesley Roberts, Ventura. Captain R. is the Superintendent of the Los Angeles Oil Company, and probably better posted than any other man in oil matters.

HONEY.

Bee-keeping is rapidly growing into an important industry, and it is universally admitted that Southern California is the best in the world. The apiaries are generally located in and about the foothills. The cañons and mountain sides which are apparently worthless afford the choicest bee pastorage. Ventura County shipped the past season 425 tons, or about 850,000 pounds of honey. There were about 4,500 colonies of bees in the county at the commencement of the present season. For further information address John Hund, Nordhoff, who is Secretary of the Bee-Keepers' Association.

STOCK RAISING.

Ventura County is preëminently good for raising all kinds of stock. Owing to the mildness of our climate the expense of keeping stock over a long Winter is saved. Stock breeds rapidly, and there are but few diseases to contend with. The hillsides, table lands and valleys, produce rich grasses, such as alfilerilla and burr clover, which turn to nutricious hay in the ground, affording the best of pasturage during the Summer and Fall, until green grass comes again in the Winter. Much interest is manifested in the importation of the very best breeds of horses, sheep and cattle. Poland, China and Berkshire are the principal breeds of hogs. Hog raisers, men who have been in the States of the Mississippi Valley, assert that there is no place in America where hogs can be raised with so little care and expense. Upon this important subject the following gentlemen may be addressed: L. D. Roberts, Robert Ayers, Nordhoff Post Office; J. F. Cummings, J. H. McCutcheon, Abner Haines, Jacob and John Gries, Santa Paula; Mayhew & Everett, I. T. Saxby, Ventura, and H. P. Flint, Hueneme. Mr. Flint is an owner and importer of fine sheep.

SOIL, PRODUCTION, PRICES OF LAND, ETC.

Our soil is principally a close-grained sandy loam, with no hard-pan subsoil or clay. The upland valleys are adobe and vegetable mould, the washings from the mountain sides. The soil retains moisture to a remarkable degree. Barley, wheat and corn are the principal crops, and are grown to perfection. As high as 5,000 pounds of barley have been raised per acre. Corn does remarkably well. Ohio and Illinois farmers who are located here say they can raise more corn

with half the labor than can be raised in the States. Our wheat takes a high rank in the market and makes A No. 1 flour. Rye does well, and farmers are beginning to sow oats, which thrives so far as tried. Flax, broom-corn, canary seed, etc., thrive abundantly. Beans, potatoes, in short, vegetables of all kinds, melons, squashes, ground nuts, etc., can hardly be equalled on the continent. The flavor and keeping qualities are good, and the size, especially of beets, melons and squashes, simply astonishing. Every variety and kind of fruit found in the north temperature or semi-tropical climes grow here. The apple, peach, pear, plum, and other northern fruits, are found growing by the side of the orange, lemon, lime, apricot, nectarine, madeira nut, olive, almond, date, fig, guava, quince and pomegranate, and each seems equally at home. Most of the orchards are very young, but specimens of all kinds of fruit have come into bearing and bear evidence of their perfect adaptability and success. Briefly, it may be stated that there is scarcely a thing grown on the American continent, either grain, vegetable, fruit or flower, but what is successfully grown in Southern California, and in many instances to a greater degree of perfection. Poultry raising is very profitable, and is carried on quite largely. Prices of land vary, of course, according to location, improvements, etc. Land ranges all the way from $10 to $50. Unimproved lands may be purchased as low as $2 per acre and upwards, while some of the choicest pieces of improved land could hardly be bought for $100. Good average lands under cultivation may be bought for $20 or $25 per acre. Lands may be rented at from $2 to $3 per acre or half the crop. Large quantities of grain are raised by volunteering.

TIMBER, WATER, RAINFALL, CLIMATE, GAME, ETC.

Of the two great desideratums in a sub-tropical country—timber and water—Ventura County possesses a bounteous share. The timber is principally live oak, white oak, and sycamore, the trees growing to good size in the cañons and along the streams. In the mountains back of the coast are vast forests of fir and pine, which at present are almost inaccessible. The Santa Clara is the principal river. It rises in the Stoddard Pass and flows southwesterly through the broad and prairie-like valley of that name, emptying into the sea six miles below Ventura. Large ditches taken along this stream irrigate vast bodies of fertile land. The Piru, Sespe and Santa Paula, all rising in the mountains and fed by numerous streams, flow into the Santa Clara from the north. The San Buenaventura River rises in the mountains, thirty-five miles northward, and making a rapid descent through the Ajai Valley, empties into the sea at the town of Ventura. It is fed from the east by San Antonio, and west by Santa Ana and Coyote Creeks. The water of these streams is pure and cold, and abounds in trout. Rabbits, hare, quail and pigeons are abundant. Along the lagoons and wheat fields are legions of ducks and wild geese. Deer are quite plentiful along the foothills, and along and over the first range of mountains are black cinnamon and grizzly bear, wild cats and California lions. What is called the "rainy season" usually sets in about the 1st of November and lasts until the 1st of March. Of course these dates vary. After the first rain, which usually lasts from two to four days, the farmers commence to plough for the new crops. The grass and flowers spring up all over the face of the earth. Hills and valleys that were a sober brown are now green and gay with bird and bloom. When the rains fall it is usually for a few days, and then the sun comes out and the farmer goes on with his work. He works in his shirt sleeves and finds a shade in the middle of the day comfortable. The evenings, nights and mornings are cool. By the first of March or April the grain has made a good growth, gardens are made, and no more rain falls until the next November. Thus, what is the beginning of Winter in the States, is our Spring and beginning of new life. The nights are cool, but all Winter long the tenderest flowers blossom in the open air. Roses, pinks, lilies, fuchsias and a hundred varieties of flowers fill the yards and gardens with glorious colors. The orange and lemon trees are golden with fruit blossoms and tender bud. Honeysuckles and other sweet-scented flowers clamber over your porch and trail into the open window. But inside sit the occupants before a little fire, and it feels comfortable. They are dressed in warm woollen underclothing, which is necessary here all the year round. Through the Summer months the nights are cool enough to render a pair of warm blankets necessary. Snow falls at intervals only in the mountains, and their glittering peaks mapped out against a clear blue sky, contrast strangely with the green fields and bright-colored flowers of the warm, sunny valleys. The air is pure, and sweet, and bracing. With the salt seawaves of the Pacific Ocean gently breaking on the south, and the pine and fir-covered mountains on the north, it could not be otherwise. Chills and fevers and malarial diseases cannot, and do not, exist. Sunstrokes, tornadoes, hydrophobia, yellow fever—and, with one slight exception, earthquakes—are unknown. The highest medical authorities have asserted that in the mountain valleys (such as the Ajai), back a short distance from the sea, and protected from the fogs and rougher winds, by the foothills, is to be found the most beneficial climate for persons suffering from throat and lung diseases, to be found anywhere. Thousands of sufferers who sit in over-heated rooms and look wearily and hopelessly through frozen window panes, through the long and severe Winters of the East, might, in the warm sunshine and tempered air of outdoor life in these valleys, find a new lease of life by seeking them *in time*. It is confidently believed that when all the advantages and excellencies of this climate become generally known, the Mediterranean and Florida will be overlooked, and Southern California will become the greatest sanitarium of the continent.

The mean temperature is from 50 to 55 degrees in January, and 70 to 76 in July. Rainfall ranging from five to fifteen inches the season.

The young county of Ventura, with a population of but 7,000 inhabitants, has room for a number of people. Within the commercial lines of Ventura well nigh a half million people may be comfortably sustained. With all her vast resources and natural advantages she cordially and confidently invites immigration.

The best way to reach San Buenaventura is to take one of the steamers of the Pacific Coast Steamship Company, which sails every Thursday from their wharf, at the foot of Davis street, San Francisco. They are good, staunch steamers, with trusty, polite and obliging officers. Fare to Ventura, first cabin, $12; steerage, $9. Time, about 50 hours. The Ancon and Orizaba, belonging to the same line, sail alternately every fifth day, touching at Santa Barbara, where passengers may take the stage for Ventura, 30 miles. Passengers who prefer the land may take the cars of the Southern Pacific Railroad, which runs daily trains southward to Los Angeles and Arizona. Passengers for Ventura get off at Newhall and take the Telegraph stage, the balance of the route, about 50 miles. Fare, first-class, from San Francisco to Ventura, $24; second-class, $17. Time, about 58 hours.

SAN JOAQUIN COUNTY.

This is the northern of the six counties which constitute the great agricultural district known as the San Joaquin Valley, and is bounded on the north by Sacramento County, east by Amador, Calaveras and Stanislaus, south by Stanislaus, and west by Sacramento, Contra Costa and Alameda counties. It has an average length of about forty miles by a breadth of thirty miles, and embraces an area of 896,000 acres, of which 865,074 acres are returned on the assessment roll of the county as subject to taxation.

TOPOGRAPHY AND CHARACTER OF LAND.

This is exclusively an agricultural county, no important deposit of minerals having been found within its borders. With the exception of a few of the lower foothills of the Sierra Nevada range, in the eastern part of the county, and a comparatively small tract in the extreme southwest portion, extending into the Coast Range, the face of the country is generally level. The character of the lands may be classed as follows: "Prairie," "swamp and overflowed," "river bottom," and "foothill." The swamp and overflowed lands comprise about one-fourth of the entire area, and of the remainder nearly all is prairie land, susceptible of cultivation, and capable of producing crops of grain, varying from ten to forty bushels per acre, according to the locality and character of the soil. Indeed, in some instances, fifty, sixty, and even seventy bushels have been produced; but these are exceptional cases, resulting from extraordinary fertility of soil, combined with good seasons and careful cultivation.

THE BOTTOM LANDS

Are those which lie along the Stanislaus, Calaveras and Mokelumne Rivers, between the river and the high lands, and are subject to annual overflow unless protected by levees. These periodical overflows leave a rich sedimentary deposit, which renders the fertility of the soil inexhaustible. The great variety of the crops produced, and the enormous yield, are matters of astonishment. The soil is a rich sandy loam, and is well adapted to the growth of potatoes, hops, corn, tobacco, peanuts, flax, hemp, jute, ramie, chiccory, melons, and fruits and vegetables of every description. No irrigation is required, and there is never any failure of account of drouth.

THE SWAMP AND OVERFLOWED LANDS

Are situated mostly in the northwestern portion of the county, and border on the San Joaquin River and its several tributaries and sloughs. A few years ago this vast extent of country was almost entirely covered with a thick growth of tules. Under the several acts of the Legislature encouraging reclamation, a large number of reclamation districts have been formed, by means of which, with the aid of private capital, which has been liberally invested, an immense area of heretofore valueless land has been successfully reclaimed and rendered fit for cultivation. The exact number of acres so reclaimed cannot be given here for want of time, but may be safely set down as exceeding 150,000 acres. Among the islands lying in this county which have been reclaimed, the principal are Union, Roberts, Staten, Boulden, and Rough and Ready. There are, besides, a number of land districts, embracing a large area of land, which have been thoroughly reclaimed. These lands are remarkably fertile and yield enormous crops of wheat and barley, besides being well adapted to the growth of about all the crops produced in the river bottoms. They are especially valuable in seasons of drouth, for the reason that crops may be planted and matured after failure in the uplands has been rendered certain.

THE FOOTHILL LANDS,

Heretofore referred to, are also especially valuable as ranges for sheep, cattle and other stock. In fact, there is little or no land in this county which cannot be utilized for some purpose. Indeed, in seasons of extraordinary drouth, even unreclaimed tule lands afford good pasturage, and have been the means of preserving thousands of cattle and sheep from starvation. On the west side of the San Joaquin River there is a vast plain, several miles in width, extending from the river back to the foothills of the Coast Range, which, unfortunately, is particularly subject to dry seasons. The soil is a rich sandy loam, of considerable depth, and in favorable seasons produces extraordinary crops of the cereals, but from the peculiar conformation of the country, and the prevailing direction of the winds during the Winter season, the rainfall is often much less than in the eastern portion of the valley. This peculiarity exists throughout the entire valley, and the frequent failure of crops on account of drouth has rendered farming so extra-hazardous in that section, as greatly to discourage even the most enterprising from engaging in agricultural pursuits. To remedy this serious defect, plans for irrigation on a large scale have been projected and partially carried into effect, and when fully completed, this portion of San Joaquin County, as well as the rest of the valley on the west side, will be made exceedingly valuable.

ACCESSIBILITY TO MARKET.

No county in the State is more favorably located with respect to facilities for speedy and direct access to market than is San Joaquin County. The San Joaquin River flows through the entire length of the county from south to north. No streams of importance unite with it from the west, but on its easterly side, within the limits of the county, it receives the water of three tributaries—the Stanislaus, Mokelumne and Calaveras rivers, the two first named being navigable at certain seasons for a considerable distance. Through these channels easy communication with Stockton and San Francisco is afforded to the adjacent country. Stockton, which is situated in about the centre of the county, can be easily and quickly reached from any point within its limits, either by rail or by water. There are also three excellent macadamized roads, connecting the city with the northern, southern and eastern portions of the county, which are constantly kept in good repair, so that travel for heavy freight wagons is unobstructed at all seasons of the year.

CLIMATE.

The following able and interesting paper on the subject of the climate of this section of country, prepared by Dr. G. A. Shurtleff, Medical Superintendent of the State Insane Asylum, in this city, is given entire, as it may be considered the best and most reliable authority on the subject of which it treats that can be obtained:

"The climate of the different sections of our coast presents, like that of Mexico, some striking and most agreeable varieties. Heat and cold, irrespective of latitude, occur in certain places regularly from observable physical causes which are local; and humid winds, or arid calms, or grateful breezes characterize the climate of localities within comparatively short distances from each other—the manifest result of the configura-

tion of the earth's surface. Thus in the great basin of the San Joaquin, the process of heating and cooling, of atmospheric rest and motion, is carried on during Summer, with almost the regularity of the ebb and flow of the ocean tide. Near the coast, and stretching along for hundreds of miles parallel with it, this immense valley is effectually cut off by the coast range of mountains from the air of the sea, during the latter part of the night and fore part of the day, while the atmospheric equipoise is undisturbed by local rarification. But as the day advances the sun warms and heats and rarifies the reposing atmosphere of the valley, the equilibrium is at length temporarily destroyed, and soon after mid-day, the heavy, cool sea-wind, put in motion and hurried on to restore Nature's disturbed balance, comes sweeping up the outlet of the valley, and through the passes of the coast mountains, with uncomfortable force and frigidity. With no obstacles to impede or deviate its course, it pursues the broad line of the great river of the south, passing over our city and the lower part of the valley in a northwest course, fresh and cool, gratefully tempered and moderated as it commingles in its first meeting with the soft, warm air of the interior, and spreads out over the wide expanse of green tules in which the valley terminates. In this way, by a law of Nature, the whole basin is filled daily, during the Summer, with the invigorating atmosphere of the ocean, aided somewhat in the night by the descending cool air from the snowy crests of the Sierras. With a temperature thus equalized and an atmosphere thus daily refreshed, the valley of San Joaquin possesses a climate eminently conducive to both the comfort and health of man. The climate of California has not been inappropriately compared to that of Italy in the equability and agreeableness of its temperature. No equally extensive section of the State possesses in so eminent a degree those desirable climatic characteristics which justify this favorable comparison as does the valley of the San Joaquin. Low down the valley, about midway between the two mountain ranges, the temperature is almost exactly that of Naples, as the following record of thermometrical observation will show:

	Naples.	Stockton
January	46	49
February	47	51
March	51	58
April	56	60
May	64	64
June	70	74
July	76	76
August	76	74
September	69	69
October	61	67
November	53	56
December	49	48

"The foregoing table represents the mean temperature of each month in the year in Naples and in Stockton, the temperature of the latter place being taken from the record kept by Dr. R. K. Reid, and embracing a period of four years.

"Along the coast side of the lower valley the climate is much cooler in Summer than in Stockton, the high winds prevailing in the afternoon, as in San Francisco, while far to the south, and along the foothills of the Sierras, it is much hot er during the same season.

"In regard to the healthfulness of the valley, to say nothing of the sanitary effect of the rapid desiccation and curing of most of the spontaneous vegetable productions when the dry season commences, this daily atmospheric current is constantly sweeping away in their incipiency the miasmatic exhalations and pestilent fermentations which might otherwise incubate and brood undisturbed over the rich bottom lands near the mouths of the tributary streams. In this unavoidable purification, carried on and forever to continue in obedience to the preservative and unalterable laws of Nature, we have the promise of the future healthfulness of our increasing population. The experience of the past, too, may well inspire confidence. Carefully kept and scientifically arranged necrological tables extending back more than ten years, show in this city a rate of mortality which compares favorably with the most healthy places on the globe; the ratio of mortality exclusive of deaths from external causes or violence, being annually only 1 death to 65 of the population; while in Norway the ratio of mortality is 1 in 56; Sweden, 1 in 49; England, 1 in 44; France, 1 in 44; Prussia, 1 in 36; Philadelphia, 1 in 46; Baltimore, 1 in 41; New York, 1 in 33; United States (as shown by the corrected estimates of the eighth census), 1 in 45.5. Epidemics and virulent infections have been rare and disinclined to spread, and the more genial and mild temperature of this sheltered region tends to stay the development of pulmonary affections and diseases of the respiratory system, while the chilling fogs and harsh winds of the coast are liable to provoke their dread attacks.

"Along the estuaries of the San Joaquin River, and at the mouths of its confluents, malaria is sometimes engendered, and intermittents in a mild form prevail to some extent late in the Summer, notwithstanding the unfailing sanitary influences of our post-meridian winds. But when we consider that these rank borders and low bottoms, on account of their moisture and supposed richness, were the first, and in some sections, until recently, the only part of the valley which were settled, and that even now they are seldom objected to by the experienced on account of their unhealthfulness, and when we further contemplate that these are but the narrow water lines and terminal borders of a valley whose length is estimated by hundreds of miles, and whose breadth is measured by the meridian lines of longitude; whose healthful and productive acres extend far away out of sight of the regions of Winter floods or Autumnal miasm, we may confidently feel assured of a population in this rich and truly magnificent valley, not only healthful in the usual freedom from bodily ills, but healthful in every essential interest which tends to constitute a wealthy, prosperous and happy people."

INDUSTRIES.

Although the grain-growing interest predominates over all others in the county, a number of other important industries are carried on to considerable extent and rendered profitable to those engaged in them—of which may be mentioned, as next in importance, that of

STOCK-BREEDING.

Great attention is given by a majority of our farmers to the improvement of their flocks, herds and stables, by the introduction from the Eastern stables and from abroad of the best thoroughbred stock of horses, horned cattle, sheep and swine. For years past the stock of this county has had a wide-spread reputation on account of its general superiority, and some of the fastest and best horses in the State have been bred here. It is no vain or idle boast to say that on any great public occasion which attracts the farmers to the city, more fine buggy, carriage, team, draft and saddle horses can be seen in Stockton in one day than in any other town in any country whatever. This, however, must be understood to apply to average teams, owned by the farmers for daily service, and not to exhibitors at fairs. In fact, it seems to be the ambition of every farmer in this county to have a team quite as good, if not better, than his neighbor. During the past year a number of fine teams have been sold to gentlemen in San Francisco at fancy prices. Thoroughbred short-horn Durham and other breeds of cattle, Spanish Merino, French Merino and Southdown sheep and Berkshire hogs are also raised to a considerable extent.

Another important industry is the production of fruits and vegetables for the San Francisco market. The alluvial banks of the San Joaquin River are peculiarly favorable for this purpose, from the fact that fruits and vegetables mature earlier than elsewhere, and on account of the quickness with which they may be placed in market. The bottoms along the other streams traversing the

country are cultivated in this manner, and produce large crops. We can give no statistics of this branch of industry, but observe that it is steadily growing year by year. The products form an important item in the freight lists of the steamers plying daily to San Francisco.

Poultry of all kinds is raised in great abundance, and the shipment of eggs and poultry from Stockton amount to many thousand dollars annually. This is a very profitable industry, as the products of the poultry yards always find a ready sale, at remunerative prices.

The following statistics, showing the products of the county for the year 1877, are taken from the report of the County Assessor made in July, 1878:

Land enclosed, 328,500 acres; land cultivated, 196,150 acres.

AGRICULTURAL PRODUCTS.

Wheat—114,182 acres, 1,063,820 bushels; barley, 9,025 acres, 146,930 bushels; oats, 150 acres, 3,200 bushels; rye, 1,250 acres, 18,600 bushels; corn, 539 acres, 17,250 bushels; buckwheat, 15 acres, 300 bushels; beans, 65 acres, 1,750 bushels; potatoes, 590 acres, 3,090 tons; sweet potatoes, 10 acres, 30 tons; onions, 40 acres, 3,250 bushels; hay, 4,030 acres, 4,250 tons; hops, 70 acres, 19,400 pounds; wool, 244,400 pounds.

Fruit—Value of fruit crop, about $4,500; bearing oranges, 10; acres of grapevines, 186.

Wine, etc.—Wine, 76,600 gallons; brandy, 9,500 gallons; breweries, 3; beer, 66,500 gallons.

Live Stock—Horses, 12,040; mules, 1,130; jacks and jennets, 56; horned cattle, 18,564; sheep, 176,557; hogs, 15,848; goats, common, 683.

Improvements—Grist mills, steam power, 6; barrels of flour made, 110,300; bushels of corn ground, 3,900; bushels of barley ground, 2,400. Saw mill, 1. Woollen mills, 16; pounds of wool used, 200,000; blankets made, 7,500; flannel, etc., 100,000 yards. Irrigating ditches, 2; acres irrigated, 3,000. Railroads, miles in length, 101 59-100. Telegraph line, number of miles, 122¼.

Population—The total number of names on the Great Register is given at 5,500, which is no doubt considerably in excess of the actual number of voters. The total number of votes cast at the late election on the question of the adoption of the new Constitution amounts to 4,163, the largest vote ever polled in the county.

CITIES AND TOWNS.

The principal towns outside of the city of Stockton, are: Woodbridge, Lodi, Lockeford, Acampo, Farmington, Linden, Lathrop, Bantas, Ellis, and Tracy. Woodbridge has a population of about 800, and is one of the oldest settlements in the county. It is located fourteen miles from Stockton, on the Mokelumne River, at the head of navigation. It has a number of fine brick buildings, hotels, stores, an excellent public school, one of the finest academies in the county, recently completed, a flour mill, blacksmith shops, and numerous other industries and trades. It is in the centre of a very rich agricultural district, which accounts for the prosperity it has maintained, notwithstanding the competition with the neighboring town of Lodi, on the Central Pacific Railroad, two and a half miles distant.

Lodi, twelve miles north of Stockton, on the Central Pacific Railroad, has sprung into existence since the construction of that road, and is one of the most thriving communities in the county. Its citizens have exhibited a degree of enterprise quite surprising, and have inaugurated enterprises that promise to make it the busiest town in the interior. A brick flouring mill of large capacity has been erected by a joint stock company, and a saw mill has been completed by the Lodi Land and Lumber Company, with a capacity for sawing about 25,000 feet of lumber daily, the logs being floated down the Mokelumne River from the mountain forests of sugar pine, which afford an almost inexhaustible supply of material. The citizens of Lodi and vicinity have inaugurated a good irrigation scheme, which bids fair to succeed. Water is to be taken from the Mokelumne River at the wire bridge, above Lancha Plans, and distributed over the lands lying between the Mokelumne and Calaveras Rivers by a system of canals aggregating 130 miles in length. The town has a population of from 400 to 500 inhabitants, and contains a number of handsome churches and public buildings.

Lockeford is situated on the high banks of the Mokelumne River, about eight miles east of Lodi. The location is most delightful, being in the midst of fine old oaks, which afford the most grateful shelter from the scorching rays of the Summer sun, and altogether it is one of the most cosey and pleasant spots to be met with anywhere. It is the centre of a prosperous farming community, and has a population of about 250.

Linden lies twelve miles east of Stockton, and is surrounded by the richest farming lands of the county. The country is beautified by scattering oak trees of enormous size, whose long, trailing branches almost sweep the ground, giving the landscape the appearance of an old orchard. A flouring mill is located in the village, and other industries afford occupation to about 150 inhabitants.

Farmington is sixteen miles from Stockton, on the line of the Stockton and Visalia Railroad, and is the centre of a great wheat-growing district. It contains a warehouse, for the storage of grain, of considerable capacity, and large quantities of grain are annually shipped from that point. There are a number of stores, and the merchants and tradesmen do an active and prosperous business.

Lathrop is ten miles south from Stockton, at the junction of the Visalia and Western Division of the Central Pacific Railroads. It is the eating station for passenger trains on both roads, and boasts a first-class hotel. The population consists principally of persons connected with the railroad.

Bantas is a railroad station on the Central Pacific, twelve miles from Stockton, and in good seasons is an important point for the shipment of grain. It is surrounded by very fertile lands, which produce enormous crops in good seasons, which, however, occur so seldom, that farming is very precarious; and no improvement in the business prospects can be hoped for until some system of irrigation on the West Side has been established.

Tracy is a new town, which has just sprung up at the junction of the Bay Shore road to San Francisco, via Martinez, and the former road via Niles and San Leandro. The Railroad Company have transferred their station from Ellis to the new town, and a number of stores, hotels, and dwellings have also been removed, so that the once flourishing little town of Ellis has been shorn of its importance, and, in fact, almost absorbed by its new rival. From its favorable location, Tracy will no doubt soon become a place of considerable business importance.

In all the towns in the county there are churches, school houses, stores, and mechanical shops, adequate to the supply of the surrounding country.

EDUCATION.

There is perhaps no county in the State where the people are more deeply impressed with the importance of education, or where better facilities are afforded for the purpose. In the county outside of Stockton there are 71 school districts, with 77 school houses. The number of children attending school is 2,965.

The expenditures for the fiscal year ending June 30, 1878, are as follows:

For salaries of teachers	$46,555 09
For contingent expenses	5,440 96
For libraries	1,542 60
For school apparatus	2 4 05
For sites, buildings and furniture	561 65
Total	$54,354 35

The following statement includes the city of Stockton:

Number of school districts, 72; number of schools, 107; number of children attending schools, 5,030.

EXPENDITURES.

For salaries of teachers	$76,293 09
For contingent expenses	13,265 45
For libraries	1,655 10
For school apparatus	254 05
For sites, buildings and furniture	799 90
Total	$92,467 59

Most of the districts have comfortable school houses and capable and efficient teachers. The schools are kept open on an average about eight months in the year.

THE CITY OF STOCKTON.

This city, which is the county seat of San Joaquin, and at present the third city in the State in point of population and commercial importance, is located on a level plain at the head of Stockton Slough, a wide and deep arm of the San Joaquin, which extends from the river three miles into the plain. It occupies a very favorable commercial position, the San Joaquin River being navigable to this point from San Francisco at all seasons of the year for vessels of from 150 to 250 tons burden; and Stockton Slough, with its two branches—Mormon and Lindsay channels—both of which are navigable to central portions of the city, affords wharf room and harbor facilities such as are seldom possessed by interior towns. In the Winter and Spring months steamers also ply upon the Upper San Joaquin for a distance of nearly two hundred miles above Stockton.

The city was founded in 1849 by Captain C. M. Weber, and laid out into streets, being a portion of the Mexican grant known as El Rancho del Campo de los Franceses, which has been confirmed to Captain Weber by the United States Government, so that there is no question as to the validity of any title derived through him. The corporate limits of the city extend over four square miles, and its streets run at right angles, forming blocks of three hundred feet square. The streets running from north to south are uniformly eighty feet wide, and those running from west to east, sixty feet. There are also a number of avenues from eighty to one hundred and twenty feet in width. A great number of the principal streets are graded and gravelled, or macadamized, and very generally lined with beautiful shade trees. The buildings are generally of a very substantial character, the business portion being constructed almost entirely of brick. A system of street railroads, two and three-quarters miles in length, including all its branches, affords easy communication between all parts of the city.

The city has an efficient Fire Department, consisting of four volunteer companies, under the control of a Chief Engineer, elected annually by the firemen. Its equipment is not surpassed for excellence and efficiency in the State, comprising three fine steam fire engines, one Babcock fire extinguisher, one hook and ladder company, and minor apparatus which make up a complete outfit. Stockton is well supplied with churches. The number of church edifices is thirteen, viz.: one Episcopal, one Catholic, one Presbyterian, one Congregational, three Methodist, two Baptist, one Christian, one Lutheran, and one Jewish Synagogue.

THE PUBLIC SCHOOLS OF STOCKTON

Are the special pride of her citizens, and have acquired an enviable reputation throughout the State. So efficient and excellent have the public schools become, through a liberal policy and admirable management, that private schools and seminaries have not become a necessity, and all classes of citizens send their children to them, where it is believed such an education may be acquired as to fit the graduate for almost any position in the general pursuits of life. The number of children attending the city schools last year was 2,065. The expenditure for the year ending June 30, 1878, was as follows:

For salaries of teachers	$29,738 00
For contingent expenses	7,824 49
For libraries	312 50
For sites, buildings and furniture	238 25
Total	$38,113 34

The valuation of school-houses, furniture, library, apparatus and musical instruments is $142,000. The school buildings are of the most substantial character, and their architectural beauty adds greatly to the appearance of the city. The Stockton Business College, established about four years ago, is an extensive institution, at which the theory and practice of business are taught, and is a very creditable, excellent and thorough business school. Stockton contains eight establishments for the manufacture and sale of agricultural implements, six drug stores, two auction stores, nine bakeries, four banks, eleven barber shops, thirteen blacksmith shops, one boiler shop, one book-bindery, five book and stationery stores, twenty boot and shoe shops, three breweries, twelve meat markets, one carpet weaving establishment, ten carriage and wagon makers, one dealer in carriage and wagon materials, one chair factory, eighteen cigar stands, twelve clothiers, three coal and wood yards, six confectioners, eleven contractors and builders, one cracker factory, four crockery dealers, five dentists, ten dry goods stores, three dyers and scourers, two foundries, three furniture factories, five furniture dealers, two glove factories, eleven grain dealers, thirty-one groceries, three gun shops, ten hardware dealers, six harness and saddle shops, one hat store, twelve hotels, two ice depots, two iron and steel dealers, six jewellers, three junk dealers, two wholesale liquor stores, fifty-eight saloons, ten livery, feed and sale stables, three lumber dealers, three marble works, ten millinery shops, two flour mills, two planing mills, one paper mill, two music stores, two daily and four weekly newspapers, six paint shops, four photographers, sixteen physicians, four poultry dealers, four job printing establishments, four produce dealers, ten restaurants, ten school houses, one ship yard, one soap factory, one soda factory, two stair builders, nine tailor shops, three tanners, two undertakers, ten vegetable dealers, one wire fence factory, three windmill factories.

The population of the city is estimated at about 14,000. A great number of new dwelling houses and stores have been erected during the last twelve months, in most instances for the parties who occupy them. It is, indeed, a remarkable fact, that in Stockton a large majority of the dwellings are owned by the families who live in them.

The assessment roll for the present fiscal year foots up $4,728,234, being an increase of $102,198 over last year, and $2,430,096 over 1869, having nearly doubled in the last eleven years. The tax rate for the present year is $1 80 per $100, against $2 05 in 1878.

STOCKTON AS A GRAIN MARKET.

Stockton is conceded the most important grain market on the Pacific Coast, with the exception of San Francisco. This fact is to be attributed to her location in the centre of a vast grain-producing country, accessible at all times by railroads and navigable streams, radiating in every direction, and her extraordinary facilities for cheap and rapid handling, storage and transportation. The warehouses of Stockton have a storage capacity of 1,600,000 centals, or 80,000 tons. The deep, navigable channels extending from the San Joaquin river to different points in the city, afford a water front of several miles in extent, along which substantial wharves have been constructed, aggregating more than a mile in extent. A special wharf fund has been created by the City Council, which is applied exclusively to repairs, and the construction of new wharves, as the demands of business may require. The receipts of wheat at this port from July 1st, 1878, to June 1st, 1879, as far as can be ascertained, amount to 4,049,483 centals. The shipments for the same period foot up 3,501,662 centals. Shipments of wool (spring clip) amount to 1,281,500 pounds. These are the principal articles of shipment for export, but there are annually shipped, in addition, large quantities of flour for foreign export, as well as home consumption, leather hides, furniture, poultry, eggs, live stock, fruits,

vegetables, chicory, and many other articles, to which the limits of this article permit but passing mention.

MANUFACTURES.

Stockton has of late years made rapid progress in the number and variety of her manufactures, and the value of the different articles produced has greatly increased and contributes largely to the wealth and prosperity of the city. Only a brief notice can be given here of a few of the most important branches.

There are two large flour mills in the city—the City Mills, owned by Sperry & Co., and Lane's Mills, owned by R. B. Lane, which use annually about 36,000 tons of wheat in the aggregate. The flour is of superior quality, and especially adapted to stand a sea voyage. It is consequently in great demand for export to China, England and other foreign countries.

AGRICULTURAL IMPLEMENTS.

The manufacture of agricultural implements is carried on to a great extent, and ranks among the most important industries in the city. Five firms are extensively engaged in this business, and the value of implements manufactured annually will aggregate not less than $250.000. A great many important and valuable improvements and inventions in that line have been made by Stockton mechanics, which have been patented, and it is safe to say that no better quality of work can be produced anywhere than that turned out by Stockton mechanics.

FOUNDRIES.

There are two large foundries which do a flourishing business in the manufacture of castings for agricultural implements, and all manner of steamboat, portable and stationary engines, mining machinery, pumps, house fronts, etc. The total value of the manufactures of these establishments aggregate about $200,000 annually. There is also an establishment for the manufacture of steam boilers, which does a large business.

A paper mill owned by the California Paper Company, with a capital stock of $300,000, was completed and put in operation about two years ago. It has a capacity of producing 16,000 pounds of paper daily, for which there is a steady demand, the printing and other classes of paper being of a superior quality.

CARRIAGES AND WAGONS.

The manufacture of carriages and wagons has been a leading business in Stockton from an early period of its existence, and the vehicles manufactured in this city cannot be surpassed in point of material, excellence of workmanship, beauty of design, elegance of finish, strength and durability. There are two very large establishments, beside a number of smaller ones, engaged in this branch of industry, and the value of their manufactures aggregate annually upwards of $159,000.

FURNITURE

Is an important article in the list of home manufactures. Beside the Stockton Furniture Manufactory, S. H. Fickett & Co., proprietors, which does a large business, there are a number of dealers, who also manufacture to a considerable extent.

TANNERIES.

There are three tanneries in successful operation in Stockton, their business aggregating about $300,000 per month. The leather manufactured at these tanneries is of such superior quality and widespread reputation, that there is ready demand for all that can be produced.

A woollen mill has been in successful operation here since 1870, and has been repeatedly enlarged to meet the demands of an increasing business. The principal articles produced are blankets, flannels and cassimeres, which find a ready market in Stockton and San Francisco. Some shipments have been made direct to China. The wool-growing interests of the San Joaquin Valley are so extensive that the manufacture of woollen goods in this city must necessarily increase every year, and engage large investments of capital.

There are two shipyards in Stockton—one on Lindsay Point, owned by S. H. Davis, and one on Stockton Channel, owned by the California Steam Navigation Company, from which have been launched some of the finest river craft of California. Mr. Davis has been established in business over sixteen years, during which time he has built 24 steamers, 12 barges, 3 propellers, 2 dredge barges, 2 sloops, and 1 schooner.

Besides the various manufactures specially referred to, a number of firms are engaged in the manufacture of boots and shoes, saddlery and harness, tinware, and a great variety of other articles, such as are necessary to supply the demands of a large community.

With this brief summary of the location, soil, climate, resources, products, manufactures, etc., of San Joaquin County, and its principal city, this article must be brought to a close. If the facts as therein presented shall happen to attract the attention of persons who are looking around for new homes, or in search of profitable investments for capital, and so interest them as to awaken a desire for further information, such persons are cordially invited to come and see for themselves, and are assured of a hearty welcome and generous hospitality.

CALAVERAS COUNTY.

By L. M. SCHRACK.

Calaveras is one of the oldest-settled counties in the State, and justly celebrated in the early days of its settlement for the fabulous yield of virgin gold from plain, gulch, bank, river, and deep-channel diggings.

GEOGRAPHICALLY,

Calaveras is centrally located, and is bounded by the following counties: On the north by Alpine, on the east by Tuolumne, on the south and southeast by Stanislaus and San Joaquin counties, and on the west by Amador; being about sixty miles in length, with an average width of thirty miles, containing eleven thousand square miles of territory. The salubrity of the climate, from the peculiar formation and location of the county, is remarkable and widely acknowledged, as attested by the large number of visitors to more prominent localities, for sanitary purposes, as well as curiosity and instruction, in visiting the many

NATURAL WONDERS

Of this county; principal among which are the world-renowned Big Tree Groves, extensive cave with its many charming chambers, and the truly wonderful natural bridge; all of which are usually visited by tourists "doing" California. The entire county may justly be regarded as a bed of

MINERAL

Deposits, gold predominating; the baser metals being abundant and only awaiting the time of the advent of population, and consequently capital, to develop these now dormant resources. Copper has been extensively worked, but at present it is in a languishing condition, from causes best known to those who secured the most favorable locations; iron, inexhaustive, of high percentage, contiguous to limestone, timber and water power; coal beds undeveloped exist, also cinnibar; marble, limestone and granite of the finest quality, in ledges of bold and magnificent proportions, course the country, interspersed with innumerable lodes of quartz, many of which carry gold, and some now worked are proving the best gold mines upon the coast, notable amongst which are the Gwin mine, located in the west central side of the county, and which is prosecuted with an energy and upon a scale second to no similar mine in the State; the American, formerly the Furguson & Wallace, and Chavannie mines, upon the east central side of the county, and the Champion, located near the West Point in the northwest of the county, are particularly notable for their steady yield and judicious management. There are innumerable operations in quartz, hydraulic and channel mining throughout the county, which meet with success or disappointment in accordance with their good or bad management. To particularize the many operations would be foreign to this article, as they extend from the southern extreme of the county, east to west, northerly to, and even into the great

TIMBERED BELT,

Which of itself, for grandeur, extent, diversity and magnificent proportions, has no parallel in the entire timbered belt of the western slope of the Sierras. Such is the opinion of all who have visited and travelled through this wonderfully profuse bounty of Nature. Words are inadequate to express the impression made upon the mind on viewing this wondrous gift of God to man, which now lies (and it would almost seem sacrilege to say) dormant, awaiting the axe-man, pioneer to civilization and interal improvement. This entire belt, during the Summer and early Fall months, is occupied by our

PASTORAL

Population, and those engaged in that pursuit living in other counties also drive their flocks and herds to this great common. Being chiefly yet unsurveyed land, they are occupied for pastoral purposes by a kind of common agreement, each respecting the boundaries of his neighbor, and it is rare, indeed, that a disagreement occurs, except when crowded by strangers from the south, which in years of drouth in that section of the State sometimes occurs. The chief interests of Calaveras are mining and pastoral. It cannot be classed as

AGRICULTURAL,

Yet from east to west, south to north, even to the vicinity of the snow-belt, many favorable locations are occupied, where every production grown in California, according to altitude of location, is successfully cultivated.

The southern, or foot-hill, section is peculiarly adapted to the production of every description of fruit, as is attested by the innumerable vineyards and orchards in luxuriant growth throughout that portion of the county, notwithstanding the necessary care and attention in many cases are evidently wanting.

Upon the farms in the higher altitudes the potato crop is always a success, not only in quantity, but the quality is regarded as greatly superior to those of the valley and coast counties; whilst the cereals throughout the county give a satisfactory yield. The chief crop is hay. Wheat, barley or oats, as the case may be, are cut in the dough and when properly cured make the best of hay. Such is the general practice in the larger portion of the county; yet there are many favored localities contiguous to San Joaquin County that reverse the general rule, finding it more profitable to do so. A failure of crops from drouth is a very rare occurrence in this county; it is true the rainfall of some years is more copious than that of other years, and complaints are more frequently made of too much than too little rain; but it generally results that all comes out right and crops give satisfactory results.

As irrigation is deemed by many indispensable to the success of the tiller of the soil, it will not be out of place here to notice the

HYDROGRAPHIC

Advantages possessed by this county; the eastern border being defined by the Stanislaus River, the western by the Mokelumne River, and the central portion of the county, longitudinally, is drained by the Calaveras River and its various tributaries.

These streams and their branches are tapped at various points and their waters distributed by artificial means, chiefly for mining purposes, to all sections of the county. The two great works of this character are the "Mokelumne Hill and Sico Canal," on the west side, taking its supply from the Mokelumne River, and the "Murphy's Canal," on the east side of the county, taking its supply from the Stanislaus River; these two extensive works having many lateral ditches for the distribution of their waters.

The Calaveras River is tapped at various points, as are the many tributaries of the several main streams. Comparatively little of this great water supply is used for purposes of irrigation, and only, in fact, when positive necessity demands, on account of the high price charged, consequent upon the demand for mining purposes. The time, however, is evidently approaching when the ditch owners must look to the agriculturist and manufacturer as consumers of their commodity.

MANUFACTURING

Operations in this county are comparatively insignificant in their proportions, being chiefly confined to lumbering interests, the several mills in operation not fully supplying home consumption; one iron foundry, located at Altaville, one marble working establishment at Angels, one Alden fruit dryer at San Andreas, one planing mill, door and sash factory at Mokelumne Hill, with barley cracking mill attached. The principal towns have their lager, ale and soda, also wagon and harness manufactories. The grape crop of the county, which is very considerable, is chiefly converted into brandy and wine.

Persons seeking locations for manufacturing purposes, can find many most favorable sites in this county, particularly on the line of the main canals, there being frequent falls where the whole capacity could be utilized, the water returning to the canal. It is to be supposed that very reasonable terms could be made with the companies for the power.

PRINCIPAL TOWNS.

San Andreas, the county seat, is located as centrally as may be to population; West Point is the extreme town on the northwest, Mokelumne Hill on the west centre, Campo Seco and Comanche on the southwest, Jenny Lind and Milton on the south, Copperopolis on the southeast, Altaville and Angels on the east centre, Vallecito, Murphy's and Sheep Ranch on the northeast of the county. The town of Sheep Ranch is a modern wonder, having been built up with characteristic rapidity, the stimulant being the extraordinary yield, permanent character and scientific development of the American and Chavanne gold quartz mines. There are other towns, too numerous to particularize, each and all being the centre of a particular mining district.

In all the towns will be found mercantile and all other pursuits, necessary or otherwise, fully represented. The moral tone of society will compare favorably with other sections of the State, and the facilities for devotion of the various denominations all that could be desired. No community is more devoted to educational matters, the youth of the county having facilities inferior to none outside of the large cities.

There are three newspapers published in the county, to wit: *Chronicle*, at Mokelumne Hill, Republican; *Citizen*, at San Andreas, Democratic; *Echo*, at Angels, Independent, all of which are in a prosperous condition, which certainly speaks well for the intelligence of the community. The professions are fully and ably represented, but the healthfulness and morality of our citizens are such that their services are rarely called into requisition.

That persons seeking new homes may be advised, it is well here to state that there is not a Spanish grant within the limits of the county, and a large amount of

GOVERNMENT LANDS

Remain subject to location; all arable lands having been sectionized, also a considerable portion of the timbered belt which covers the larger part of our extensive territory. It is true that most locations considered extra favorable are now located and improved, but there are still many inviting the immigrant, that can be obtained at Government prices. It is questionable if any double minimum lands now exist in this county; if any, the amount is insignificant.

Improved properties with Government title perfected are obtainable at from $5 to $50 per acre, according to improvement, locality and quality of land. As yet there are no

RAILROADS

Coursing the county, nor are there navigable streams touching our borders, which in a great degree accounts for the fact of our many natural advantages and sources of wealth being non-developed. Time will correct this, when Calaveras will take her position amongst her more fortunate sister counties, that Nature has so eminently designed her for.

MILTON

Is the terminus of the Stockton and Copperopolis Railroad, being within one mile of the Stanislaus County line. At this point is received and distributed all supplies for the central and eastern portions of the county, and from which point diverge stage lines to San Andreas, Sheep Ranch, Copperopolis, Angel's, Murphy's and Big Tree Groves; also, to Sonora, Tuolumne County. From this point, also, debark tourists, by public conveyance or private outfits, which are always obtainable. The west side of the county procures its supplies from Stockton, or via Lodi, on the W. P. R. R.

There is a daily line of stages from Lodi via Comanche, Gwin Mine to Mokelumne Hill. Supplies for West Point and vicinity are chiefly obtained via Galt, on the W. P. R. R., from which point a daily line of stages via Jackson, Amador County, connects at Mokelumne Hill with other daily lines for West Point, San Andreas, Angels, Murphy's, Big Trees, Sonora, Bodie and intermediate places. I thus particularize the various approaches to the county, hoping that it may facilitate the movements of those coming amongst us seeking permanent homes, for sanitary considerations or temporary enjoyment.

INYO COUNTY.

By Hon. S. P. MOFFAT.

Among the youngest of the counties of our State is the county of Inyo, which completed its organization in 1866, at which time it contained a population of less than one thousand, with a property valuation of between $300,000 and $400,000. Its history prior to that, particularly that portion termed "Owen's River Valley," embraced more than the usual experience of frontier vicissitudes and dangers generally experienced by the enterprising, the hardy and brave, who universally form the vanguard in wresting from its wilds, its desolation or its wilderness, new countries remote from the centres of civilization, and opening up the unpromising fields as a new home for the enterprising, the industrious and the courageous.

In 1861 the territory now forming the prosperous county of Inyo contained but a few stock men, who, braving even then the well-known dangers of hostile Indians, brought their herds for pasturage in Owen's Valley, and a handful of the still more hardy and venturesome prospectors. From that time on, and up to 1865, it was almost a continued warfare between the few settlers, with occasional assistance from the United States troops, with the Indians, a branch of the Piute tribe, a tribe possessing all of an Indian's cruelty and savagery, yet having the merit of genuine courage, proved by many a well contested battle, which ended only when the field became one of carnage and blood, and not always was the victory withheld from the dusky warrior. Notwithstanding which the number of inhabitants continued to increase. The Indians received in the early Spring of 1865 their most severe and final repulse at the hands of the settlers, made up as it then was chiefly from the prospecting and mining classes.

In the meantime rich discoveries were reported in the Inyo Mountains, upon the strength of which towns were laid out and built up, and mills were constructed, without any knowledge of the extent of the ore bodies, other than that derived from the most superficial workings. As a natural and almost inevitable consequence the mills failed to remunerate their more plucky than intelligent owners, which will be the more readily understood when in connection with a mere surface exhibition of rich but naturally rebellious ores, together with the cost of procuring and placing the machinery upon the ground, all of which had to be hauled by teams from Los Angeles, two hundred and fifty miles distant, at an expense of from eight to eleven cents per pound. Of course the mills failed to pay by reason of the great expense incurred in their erection, and, also, and chiefly, from the undeveloped condition of the mines, and from the difficulty of saving the metal really in the ores by the inexperience or ignorance of those in charge.

As a natural result of such a mining craze, the towns which were built up on the foundations of hope and rich croppings, notably, "Owensville," "San Carlos," and "Bird City," show less to-day, as evidences that they ever had an existence, than the buried city of Pompeii. In the Fall of 1864, what is now known as the Kearsarge Mines, situated in the Sierra Nevadas, and nearly due west from Independence, the county seat of Inyo county, were discovered, and upon the faith of which that town was started.

The discovery of those mines attracted much attention from mining men from Virginia City, who, in the Spring of 1865, purchased the series of locations now so well known under the above name.

A new impetus was thus given to the mining activity of the country, and in the session of 1865-6, by Act of the Legislature, the county of Inyo was formed, being carved out of the counties of Tulare and Mono.

The territory embraced within the county lies east of the Sierras, the summit of which forms its western boundary, and the State line its eastern. Northerly and southerly it extends from township line between townships five and six on the north, and the sixth standard line on the south, and contains from 11,000 to 12,000 square miles.

It is a country where extremes meet. A country of startling contrasts, such as are to be found, probably, nowhere else on the continent. A country of rugged and giant peaks, among which are Mounts Whitney, Tyndall, Brewer, of the Sierras, and many others but little less in elevation and grandeur, and upon which the snow of ages forever rests, and forming a giant wall upon its west, as if to shut it from all connection with the State of which it forms a part, marked by precipitous and sharp outlines and deep chasms, such as to render an ascent to their summits from their eastern slopes almost an impossibility. A country where, to the eastward of those peaks pointing heavenward, the earth's surface sinks hundreds of feet beneath the level of the sea, as in that valley, once the valley of mystery and fear, known as Death Valley. A country of beautiful and fertile plains and of forbidding wastes. A country of almost Arctic frosts and torrid heat. Its principal and almost only valley capable of settlement for agricultural purposes is the valley of the Owen's River, which takes its waters from the Sierras, nearly opposite the headwaters of the San Joaquin, and flowing thence a distance of not far from one hundred and fifty miles, when it becomes lost in Owen's Lake.

In this valley, and within the County of Inyo, there are in cultivation about twelve thousand acres of land, from which are produced annually upwards of 20,000 bushels of wheat, 19,000 of barley, 13,000 of oats and 50,000 bushels of corn, together with a proportional amount of other productions usually produced by the general farmer. It also gives pasturage to large numbers of horses, cattle and sheep.

In fruits, apples, pears, peaches and grapes particularly, the last two are abundant. Whatever the farmer produces from the soil meets with a ready sale, and at prices that would be considered princely by the farmers in the large grain-growing valleys west of the Sierras, grains rarely selling for less than three cents per pound, while fruits and vegetables bring corresponding prices.

The valley from which the above is produced is about seventy-five miles in length and from two and a half to five miles broad.

The farming lands are not, however, in the valley of the river proper, but on the numerous small mountain streams flowing down from the Sierras on the west, from which the waters are derived for purposes of irrigation. The waters of the river, with a comparatively small outlay of money, could and should be utilized for that purpose, by which means thousands of acres of valuable land could be made to return a rich harvest to the farmer, and a sure remuneration for the capital expended in such an enterprise. The chief interests of the county centre, however, in its mines, as it is from that source the farmer finds his market for the produce of his farm and his orchards. Heretofore there has been but one really successful (financially) mining enterprise prosecuted in the county—that is now known as the Union Consolidated Mining Company of the Cerro Gordo Mining District, which lies in the Inyo Mountains, being a continuation of the White Mountains, and running southerly therefrom and forming the easterly wall of the Owen's Valley. That property is, or was, composed of smelting ores, from which not less than $10,000,000

or $12,000,000 have been already extracted. Latterly the galena ores have given way to a great extent to silver ores. Owing to that fact, and also to the low price of lead, the Company have erected refining works in connection with the furnace, which has just got into successful operation.

By the use of the refinery the company preserve the lead, which is used in place of galena in reducing their rich silver ores.

In the same district are other noted mines, amongst which may be named the Yguacio and the San Lucas, both rich in silver; also the Palmer, a very large and rich gold mine. The latter is an old location, upon which prospecting has been carried on spasmodically, but not until quite recently has work been done with any order or system. Unfortunately, it has become complicated by being bonded to two different parties, so it is now closed up, and will probably remain so until the rights of the parties are determined. Even with that drawback the district shows greater activity than for the last several years, and no doubt seems to exist in the minds of the best informed that it will in a short time exceed its most prosperous days.

To the south of Cerro Gordo, Darwin, Lookout and Panamint at one time offered strong inducements for the investment of capital, and which was liberally, if not intelligently, expended in their development. The developments so far have not justified the hopes of those who so liberally expended their money. Yet all those camps are kept alive by those who have faith in their richness, believing they will prove true to their first promise, and yet reward their owners as did the Bodie mines of our sister County of Mono.

The Kearsarge series of mines and the Rex Montes, in connection with other independent locations, are situated in the Kearsarge Peak in the main Sierras, directly west from the town of Independence and about ten miles distant. The ores of this district are free milling silver ores, similar in character throughout and carrying at times a large amount of gold.

The Kearsarge (containing several distinct surface locations) has been worked at intervals, with varied results, since 1865, during which it has yielded a large amount of the richest grade of ore; the proceeds from which have been expended in a desultory and unsystematic manner. For the last two years, however, under a change of ownership and management, work in the way of development has been conducted in a more orderly manner, and the result to-day is conclusive that they have, at the depth of 700 feet, an immense mine of great richness and value. As an evidence of the faith of its value and permanence, a tunnel has been started from near the company's mill to tap their veins at a depth of from 1,500 to 2,000 feet, and so precipitous is the mountain as to require a tunnel of only about 2,000 feet in length.

Of the Rex Montes, also containing numerous locations, nearly the same thing may be said, save that but little has been done until within the last three years. That Company also are now running a deep tunnel, which is expected to strike the first mine in the series at a depth of about 400 feet, and the last at 2,000 feet from the surface. The peak in which these mines are situated is 13,700 feet above the level of the sea, and all of the mines, both of the Kearsarge upon its southerly and the Rex Montes upon the northerly slope, are at such an elevation that work upon the surface can be carried on only for a few of the Summer months, for which reason the work of development has been necessarily slow, that they should be opened to such a great depth by tunnel, by which means the severe cold and great snowfall of Winter would be no bar to their continuous and successful workings.

Taking the present outlook of Inyo, altogether its future prosperity is not problematical—it is a certainty. With the Inyo range on the east, forming an unbroken chain of mountains fully one hundred and fifty miles in length, every mile of which on both its eastern and western slopes shows ores rich in the precious minerals, with the vast Sierras on the west, which by many are predicted in a short time to prove themselves to be the vaults containing the largest and richest deposits of ores to be found on the coast, a prediction that bears every probability of fulfilment from the recent rich workings of the Mammoth, in Mono, also in the Sierras, and distant northerly from the Kearsarge about eighty miles, with numerous promising discoveries, intermediate, and still on thirty or forty miles to the north of the Mammoth.

It is safe to say that the County of Inyo will shortly recover from its numerous set-backs and black eyes, and assume a position second to none as a rich mining county, and where enterprise and intelligence will meet with a sure reward. Even as it is to-day, nowhere in the State is there a greater degree of contentment and prosperity existing than in this county, or a greater faith in its future, notwithstanding its isolation, shut off as it is from the centres of capital, without a railroad or even telegraph within its limits, and requiring a stage ride of one hundred and sixty miles to reach one. With all those drawbacks it is now receiving a greater degree of attention from experienced mining men, than at any time heretofore; and it is safe to predict that the county of Inyo is upon the eve of entering upon a degree of prosperity second to no other locality, and instead of being a by-word, as in the past, it will be a new El Dorado for the legitimate miner.

BUTTE COUNTY.

By S. S. BOYNTON, of Oroville, Cal.

Butte County lies along the eastern side of the Sacramento Valley and is bounded on the north by Tehama, east by Plumas, south by Yuba, and west by the Sacramento River. It embraces, according to McGann's map of 1877, about 1,746 square miles, 552,960 acres of which are mineral lands, 568,640 are timber lands, and 195,840 are agricultural lands.

During the past six months, at the Central Pacific land trials, a considerable portion of the land known as mineral has been proved agricultural and grazing lands. We would estimate the amount so proved to be not less than 40,000 acres and think at least 10,000 acres more will have the mineral proved off before the close of the year.

Butte County is well watered by the Sacramento and Feather with their half dozen tributary creeks.

The western side of Butte is comparatively level and embraces most of the farming lands while the eastern side is hilly and includes all the mines.

The soil along the river bottoms is a rich sandy loam. Between the Sacramento and Feather occurs an immense tract of black adobe land very productive in ordinary years but liable to overflow during the wet season.

Near the foothills there is a belt of red land long thought not worth farming but during the past few years many small farms have been successfully tilled as the land constantly improves by cultivation.

The foothills contain much land valuable for farming purposes though at present very little of it is under cultivation. The principal crops are wheat and barley.

The price of the latter has been so low during the last two years as to barely pay expenses for raising.

The wheat lands that formerly produced forty bushels to the acre now produce less than twenty. As this results from long continued cultivation, farmers are diversifying their crops where they can and raising corn, alfalfa and broom-corn.

Butte is greatly inferior to some other counties, both in the variety and amount of fruit grown, yet she has great natural advantages and a climate adapted to the culture of fruit, so we hope to see the day when she will assume her proper rank among the great fruit counties of the State. All that part of Butte lying in the Sacramento Valley proper, is capable of growing fruit successfully and profitably. Here occur the principal orchards in the county and here is grown the great body of the fruit.

But the foothill section will, in time, be the true fruit region of Butte, as it embraces a wide belt capable of producing every variety of fruit in great abundance. The orange and lemon both thrive here better than in the open valley, and during the past two years a large number of orange trees have been set out. Almonds and walnuts do well in this foot-hill belt, and the grape grows to perfection. The Muscat of Alexandria proves the best raisin grape, while the Black Hamburg, Rose of Peru and White Tokay are the best table varieties. The Los Angeles grape is the principal wine grape of the county. Considerable wine is made, but there is no steady demand for it. Most of the table grapes are consumed in the county, though Plumas County is supplied largely with grapes from our foothill vineyards.

The productions of Butte are the same general productions that are found in all counties of the great valley: wheat, barley, oats, corn, rye, broom-corn, alfalfa, vegetables of every description and all kinds of fruit. The foothills, where water can be obtained, are particularly favorable to vegetables, as they have a better flavor than where grown in the valley. The same may be said of the fruit; for the apples grown at an altitude of 1,500 feet are much firmer and more juicy than those raised at a lower altitude.

The climate of Butte is pleasant, except during a hot spell in mid-Summer, lasting from three to six weeks. This year the thermometer stood at 100° or over—during the heat of the day—for twenty-six days in succession. The rainy season sets in about the first of December and lasts till about the first of April. The rainfall at Oroville will average from twenty to twenty-four inches a year. Snow seldom falls below the altitude of twelve hundred feet. On the more mountainous parts of the county it falls to the depth of from two to eight feet.

Among the objects of interest to the tourist, are the Falls of Fall River. Fall River is a bright, clear stream, rising in the mountains, near La Porte, and emptying into the middle fork of Feather River, some ten miles above Bidwell's Bar. The river falls in an unbroken sheet, over a precipice about four hundred and sixty feet. From the head of the falls, a short walk of two hundred yards, brings you to a point directly in front of them. The water striking on the rocks below, produces a sound like guns fired in quick succession, and when the river is at its height, a cloud of mist or spray rises two hundred feet from the foot of the falls. A pretty good wagon-road, within a mile of the falls, makes them accessible, and a visit to the falls would well repay the labor of the tourist.

The lumber interests in Butte are for the time being at somewhat of a standstill, owing to the low price of lumber in San Francisco. We have a large and fine belt of timber suitable for lumber, and a dozen mills are in complete running order. They are merely waiting for the cry of good times to set them all at work again. They are situated in the hill regions of the county and in the great pine belt that covers the middle slopes of the Sierras. Among the principal mills are Turner's, Doon's, Hasty's, McKay's, Carpenter's, Lumpkin, Rock Creek and Defiance. The last-named mill has a cutting capacity of 30,000 feet per day.

The eastern side of Butte, lying along the lower part of the Sierras, is an important mining region, and though the mines have been worked for many years, they yet afford employment to hundreds of men, and bid fair to last many years to come. Feather River has three forks or branches crossing the mining section of Butte and dividing the hill portion of it into several extensive ridges. Along these various streams and on the several ridges occur the principal mines, though there are extensive placer mines worked on the low foothills at the base of the mountains. Near Oroville there are some eighteen or twenty Chinese mines, working from ten to twenty men each. The mines are from fifteen to twenty-five feet deep, and all the top dirt is removed by wheelbarrows, while the pay-dirt is washed in the old-fashioned cradles or rockers. The pay-dirt in these China mines is quite rich, but there is no fall by which the tailings can be disposed of, so they have been left to the Chinese to work out in this primitive fashion.

On the north bank of Feather River, opposite Oroville, is the well-known mine of O. P. Powers. This covers fifteen hundred acres of good mining ground, and is being constantly mined. The water supply is about twelve hundred inches daily, and from ten to twelve men are regularly employed. Within half a mile of Oroville and on the south bank of the river, is the mine of J. B. Hew-

ltt. The water is obtained from the south fork of Feather River, near Enterprise, and is brought in a ditch some twenty-five miles. This ditch when dry was estimated to have cost $200,000. At Morris Ravine, four miles above Oroville, is situated the important gravel mine of Hendricks & Co. Nearly $400,000 was expended on this mine in putting it in running order, bringing in ditches, etc. The mine has been shut down for a short time, but we hear it will soon be started again. Eight miles above the Hendricks mine are the extensive gravel mines of Cherokee Flat. The Spring Valley Company own the most important mine here, and is one of the best paying mines in this section of the State. There are about eighty miles of ditch leading to the mine and six miles of iron pipe. The water supply is 2,200 inches per day. The cost of the ditches and reservoirs was nearly $350,000. After the mine had been worked a year or two the company were obliged to purchase a number of farms along Dry Creek, as they were being covered up by the tailings. For this and building a double line of levee along Dry Creek $500,000 was expended. From twelve to eighteen hydraulic chiefs are at work, and a large force of men are constantly employed. The last shipment of gold was on the 22d of October, when two bricks, weighing one hundred and twenty-five, and a hundred and fifty pounds respectively, were shipped via Oroville to San Francisco.

There are many other less important mines in the county. The principal mining localities are Wyandotte, Bangor, Forbestown, Cherokee, Mountain House, Dogtown, Lovelock's and Inskip. The small mines are gradually being worked out, but the more extensive ones, requiring large outlays of capital to open and develop, will be worked for many years to come.

The largest towns in Butte are Chico, Oroville, Biggs, Gridley and Cherokee.

Chico is the largest and most important town in the county, and is situated on the south side of Chico Creek, from which it takes its name. It is surrounded by a rich agricultural region that will rival in fertility any district in the State. The growth of Chico has been quite rapid, as ten years ago it was a small and unimportant place, while now it is the largest town in the Sacramento Valley north of Marysville. The streets are broad, laid off at right angles, and are lined with beautiful shade trees. The town is well supplied with water and gas, and protected from fire as far as possible.

From F. R. Danforth, General Stage Agent at Oroville, we obtain the following

LINES OF TRAVEL:

California and Oregon Railroad, which runs a passenger and freight train north and south from Chico daily; H. B. Davidson, Agent. Colusa stage leaves Chico daily, at 6:30 A. M.; Newville and Orland stage leaves Chico Tuesdays, Thursdays and Saturdays; Oroville stage leaves Chico daily, Sundays excepted; Prattville stage leaves Chico Tuesdays, Thursdays and Saturdays during the Summer; Powellton stage leaves Chico Sundays, Wednesdays, Thursdays and Saturdays; San Francisco and Chico freight steamboat line arrives at Chico landing every Tuesday.

Chico has a population of about three thousand and is well built, both in its residence and business parts. Among the more prominent buildings, we may name the Chico Hotel one of the finest buildings in the State north of Sacramento; the Bank of Chico a massive fire-proof building, with an attractive exterior; the Bank of Butte County, a handsome structure, and from its fine finish and appearance, a decided ornament to the city; and the High School building, a large brick structure, finished in handsome style. The city contains many elegant private residences, and a large number of pretty cottages. One of the most attractive features in Chico is the great number of shade trees that line all the streets of the city.

Want of space prevents us from noticing at length the manufacturing interests of Chico—the Chico gas works, planing mills, iron works, carriage manufactory, fruit drying factory, brewery, soda works, candy manufactory, etc. Chico has two newspapers, the *Record* (Democratic), daily and weekly, George H. Crosette, proprietor, and the *Enterprise* (Republican) weekly, E. Hoole, proprietor. She has about 800 school children, with nine teachers employed in the public schools, and three private schools, employing six teachers. Among other items of note, we may say, Chico has one of the best race-tracks in the State.

In the city there are two Lodges of Good Templars, three Masonic organizations, Blue Lodge, Chapter and Commandery, Chico Lodge and Encampment of I. O. O. F., Knights of Honor, an organization of the I. O. R. M., and of the A. O. U. W. Chico grew very fast for several years, and then her growth suddenly ceased. Property was held at a high value, many of the buildings were mortgaged, and building when the impetus ceased, there came a standstill to business.

At present, and for some time past, her prospects are flattering to the residents; business is good, property rising in value, and everything indicates a prosperous future. One thing is needed to increase the further prosperity of Chico, and that in time will come. There is a large amount of land near Chico held by a few owners; when this land is divided into small farms, the population of the Chico Country will be largely increased.

The Reavis land, embracing nearly 20,000 acres, will shortly be in the market for sale in small quantities.

Oroville, the second town of importance, is the county seat. It lies twenty-four miles southeast of Chico, on the south bank of Feather River.

The town enjoys an advantage over most other towns in the Sacramento Valley, as it lies at the base of the Sierras, and has a large trade with mountain localities. The country south and west of Oroville is a fine farming region, while in the foothills near the town are several paying mines. The population is estimated at two thousand. The vote at the last election was four hundred and forty, and there are about three hundred and thirty school children.

Oroville is not a handsome town, as it lies in a depression near the river, yet some of its streets are pleasant and picturesque. The principal business street is Montgomery, while on Bird and Robinson are found the better class of dwellings.

The Court House is a large, fine building, erected at a cost of about $25,000, and containing rooms for the various county officers. Below the ground floor is a basement jail containing iron cells, which will securely hold the worst jail-breaker. The rooms of the Clerk and Recorder are made fire-proof, so as effectually to preserve from danger of fire the county books and papers.

Among the buildings worthy of note, we may name the Union and United States hotels, public school house, containing seven rooms, Catholic and Congregational churches, Rideout & Co's Bank, Masonic and Odd Fellows' halls, Union Hall, and the Ostroski and St. Sure buildings. Among the best residences are those of Jas. C. Gray, Dr. J. N. Achuff, E. Marks, Colonel J. C. Logan, Judge P. O. Hundley, A. McDermott, P. Freer, Dr. Jas. Green, S. Ostroski and Chas. St. Sure.

Oroville has new and expensive gas works, and the finest water works in this part of the State. The water is brought into town in a twelve-inch main, and under 150-foot pressure.

Among the recent and substantial improvements, is a new flouring mill, run by water power. It is first-class in every respect, and has a grinding capacity of 150 barrels a day. There are two planing mills, and in connection with one is a barley mill.

Its lines of travel comprise the California Northern Railroad, from Marysville to Oroville, with one train each way every day; a daily line of stages to Chico, one to Biggs, and a third to Cherokee; a tri-weekly line to Quincy and Greenville; a tri-weekly line to La Porte; a semi-weekly line to Prattville and Susanville, and semi-weekly line to Dogtown. For a town of its size and population, Oroville does an unusually large amount of business. The house of Perkins, Logan & Co., do the

heaviest wholesale and retail grocery business of any house north of Sacramento, and the hardware firm of Brock & Taber do an immense business with the surrounding mining localities. The merchants of Oroville, as a class, are all in good circumstances, having done business here for many years, and nearly all owning their own buildings. Oroville has a weekly paper, the *Mercury*, published on Fridays. Biggs, the third town in the county, is pleasantly situated on the line of the California and Oregon Railroad, twenty-two miles south of Chico. Biggs is a flourishing business town, in spite of its recent misfortunes in the shape of two severe fires, one in July and another in August. The blocks have since then been built up with brick buildings in place of the wooden ones destroyed. It has the best of shipping facilities, and lying as it does in the very heart of a rich agricultural section, it is noted for the quantity of products sent from its depot. The town stands on the open plain about midway between Feather River on one side and Butte Creek on the other. The vote of Biggs at the last election was 311. A new schoolhouse has been erected, at a cost of $5,000. It is a two-story brick structure, containing four rooms, and capable of seating about 240 pupils. The school children of Biggs number 225, and three teachers are employed. Biggs has one hotel, two restaurants, one livery stable, one drug store, one hardware store, one barley-mill, three stores of general merchandise, one church, water-works, and a wide-awake, spicy paper, the *Register*, published on Fridays.

Gridley is a few miles south of Biggs, and has a beautiful location amid fine groves of live oak. An excellent agricultural region surrounds Gridley, and large quantities of grain are shipped from its depot. Gridley casts a vote of one hundred and eighty-eight, and has one hundred and twenty-five school children. It numbers three hotels, five stores of general merchandise, one drug store, one furniture establishment, one harness shop, a fine school building, broom factory, and a first-class flouring mill. There are two churches, one livery stable and a lumber yard.

In the western part of Butte, and five miles from the Sacramento, is the town of Dayton. It is surrounded by a fine agricultural region, and sends down the river a large amount of grain. Though Dayton is one of the oldest towns in the county, it has grown but little for many years. It has the usual buildings found in a small country town, keeps up a first-rate school, and cast at the last election 102 votes.

Nelson is a thriving town, thirteen miles from Chico, on the C. & O. R. R. It lies in the best agricultural part of the county, and will in time be an important place. It boasts of one of the finest school buildings in the county, erected at a cost of $10,000. Nelson is an important shipping point for grain, something over a thousand car-loads having been shipped this year.

Nord, seven miles above Chico, on the C. & O. R. R., is a handsome little town, lying in a beautiful region of country. It is near enough to the foothills to have excellent views of the higher mountains, while three miles west of the town flows the Sacramento.

Durham is a growing little town seven miles south of Chico. It has the usual store, hotel, saloon, blacksmith shop, etc., and derives additional importance from a fine steam flouring mill. Its importance as a shipping point may be estimated when we say it shipped this year twelve hundred car-loads of grain, averaging ten tons to the car-load.

Cherokee is situated twelve miles north of Oroville and is the centre of the heaviest mining operations in Butte. The town stretches along a single street for a distance of nearly three-quarters of a mile. It contains several hotels, stores, the usual number of saloons, etc.; but the appearance of the town is not prepossessing, owing to the manner in which it is built.

The mining is mostly heavy hydraulic, and a large amount of capital is employed. The number of votes cast at Cherokee is 150, and there are about 220 school children, calling for the employment of four teachers in the public schools. As the mines of Cherokee appear to be inexhaustible, everything indicates a long and prosperous future for the town.

The public schools of Butte demand a notice in a sketch of the county. There are sixty-seven districts, and the same number of school houses. The number of school children in the county is 3,984, and for school purposes there were expended last year $4,450. The average salary paid to male teachers is eighty dollars, while the average for lady teachers is ten dollars less. The number of teachers employed is about eighty-five of whom some thirty-five are gentlemen, and fifty ladies. The finest school buildings in the county are at Chico, Oroville, Nelson, Biggs and Nord. The school terms in the valley part of the county commence about the first of October and close in May. Schools in the hill region open in March or April and continue until October or November.

The rate of taxes in Butte for the present year is $1 70 on the hundred dollars. This is much below the average in the State, which is a trifle over $2 on the hundred.

Of the $1 70, 62½ cents are for State purposes, 30 cents for general fund, 30 cents for road, 17 cents for school purposes, and 21½ cents for railroad bonds and interest.

Persons who wish to come to Butte to settle ought to visit the county between the first of April and last of June.

The best lands are, of course, occupied, but there remains a vast body of hill land which is valuable for farming purposes. This land is well adapted to the cultivation of fruit of all kinds, including the olive, orange and lemon. Berries and vegetables grow luxuriantly at an altitude of from 1,500 to 3,000 feet, and families will find no healthier climate in the State than along our belt of foothills and lower Sierras. Though Butte is a desirable home for an industrious, hard-working farmer or fruit-grower, it is like other places in California at the present time—no home for those who expect to earn a living without hard labor. In Butte the flush times are past, and fortunes without work can no longer be obtained.

YUBA COUNTY.

By HENRY L. WELLS.

Lying partly in the Sacramento Valley and extending far up in the western slope of the green Sierras is the county of Yuba. Prior to 1850 this region was embraced in the territory known as the Sacramento District, which included all of the State lying north of the Cosumnes and east of the Sacramento. When the county was first organized it embraced within its limits the counties of Nevada and Sierra, but the former was segregated in 1851 and the latter in 1852. The greatest length of the county is from the mouth of Bear River, at the southwest limit, to above Strawberry Valley, at the northeast, a distance of about fifty miles. It has a total area of 616 square miles, and a population of about 11,000 souls. The adjacent counties are Butte and Plumas on the north, Sierra and Nevada on the east, Nevada, Placer and Sutter on the south, and Sutter on the west. The Feather River forms the dividing line of the west, while the celebrated Yuba traverses it from the northeast to the southwest, forming a junction with the Feather at Marysville.

During the thriving days of river-mining, the population was about 15,000, and, as this was a very large proportion in those times, the county was represented in the Legislature by three Senators and five Assemblymen. At present, although the population has been but slightly reduced, the general increase in the State has brought down Yuba's representation to two Assemblymen and one Senator, the latter elected jointly with Sutter County.

The deterioration of material prosperity has not been consonant with the decrease in population, consequent upon the exhaustion of the river mines and the departure of the miners for other localities. The increase of agriculture in all its branches, and the establishment of manufactures of various kinds, has opened new avenues of industry, and the immense hydraulic mines, although not giving employment to so many people, still yield an enormous revenue annually.

MARYSVILLE.

Born in the exciting times of '49, Marysville rapidly assumed the aspect of a city, and became the centre of trade for the mines in this region. It lies at the junction of the Yuba and Feather rivers, and has always been the seat of justice of the county. Marysville is only one of the many "heads of navigation" that had their birth in those days of "great expectations," when cities of magnificent proportions were being laid out every few miles along the valley streams, all claiming to be "at the head of navigation." The maps of most of these cities remain to tell of their broad streets and elegant parks, so grandly projected and so poorly realized. The towns in this county that were the paper rivals of Marysville, and which had but a brief existence, or none whatever, were Linda, Elizabeth, Kearney, El Dorado, Plumas and Featherstone. In December, 1849, the proprietors of Nye's Ranch laid out this city, and christened it Yubaville. The name was subsequently changed to Marysville, in honor of Mrs. Mary Covillaud, the only lady then in the city. She was a member of the celebrated Donner party in 1846. The energy and enterprise displayed by the proprietors, combined with the advantages of location, saved Marysville from the same fate that befell her young sisters. In less than a year the young city became a busy, bustling town, and was on the highway to prosperity. In January, 1850, Hon. Stephen J. Field, now on the United States Supreme Bench, was elected Alcalde. The Courts provided for by the Constitution assumed their duties in June. The city was granted a charter in 1851, and S. M. Miles was chosen Mayor. The city reached the heighth of prosperity in 1856, at which time it had a population of about 8,000. At that time the crude structures of canvas, that had composed the original town, had given way to substantial and commodious brick buildings for business purposes, and neat frame residences, beautified by shade trees, all giving the city an appearance of having been long established. It was about this time that the river mining began to decline; the floating population of the city and mining camps sought other fields, and the business of the city suffered a decline, which, however, came so gradually that for several years it was not fully appreciated. In 1853 the number of pack mules engaged in transporting goods from the city to the mines was about 4,000, while 400 wagons were engaged in the same business. The construction of good roads has caused the heavy freight wagon to supersede the mule and the lighter wagon, and numbers of these leave the city daily, heavily loaded with supplies for the mines and interior towns.

By the great conflagration that visited the city in 1851, 1854, 1856, 1864, 1871 and 1879, the city lost property and buildings valued at $1,314,550. The great floods of 1851-2, 1861-2, and the ever memorable one of January, 1875, at which time the city was three days under water, were the prolific source of damage to property both in the city and county.

The city contains a Court House, built in 1855, at a cost of $45,000; County Hospital, 1856, $20,000; City Hall, 1854, $20,000; Masonic Hall, 1864, $21,500; I. O. O. F. Hall, 1860, $32,000; Turner Hall, 1870, $12,000. First Presbyterian Church, 1860, $33,000, organized 1850; M. E. Church, 1853, $26,000, organized 1850; St. Joseph Catholic Church, 1855, $40,000, organized 1852; Church of the Immaculate Conception, 1874, $4,000, organized 1871; First Baptist Church, 1862, $6,000, organized 1854; St. John's Episcopal Church, 1855, $7,000, organized 1855; German M. E. Church, 1864, $2,000, organized 1864; Mt. Olivet Baptist Church, 1857, $5,000, organized 1856; African M. E. Church, 1864, $2,000, organized 1854.

The Marysville City Library, established in 1855, contains ——— volumes; the Odd Fellows' Library, 1,370 volumes, and the Masonic, 900. The Society of California Pioneers, organized in 1869, has a membership of 125. The Fire Department consists of a Chief Engineer, Engineer of Steamers, Captain of the Hose, and fifty hosemen; the apparatus, three steam engines and two hose-carts.

Marysville has had eleven newspapers, the first of which, the *Marysville Herald*, was started by Col. R. H. Taylor, August 6, 1850. The *Daily and Weekly Appeal*, Messrs. Lockwood & Dawson, proprietors, was established in 1860, and is the only one in existence at present. It has a daily circulation of 1,500, and weekly, 2,000.

In December, 1849, the little steamer Linda wended its way to Marysville, and was followed in a few days by the Lawrence. From that time steamers plied regularly to Marysville from Sacramento and San Francisco, bringing thousands of passengers and tons of freight. The advent of railroads and the desertion of the mines has caused an almost complete cessation of river navigation to this point. The Marysville line of steamers has two vessels, the D. E. Knight and John H. Small, and three barges. Weekly trips

are made to San Francisco. By these vessels large quantities of grain are carried to market and merchandise brought to the interior. Yuba City is made the terminal point for the reason that the Yuba is so choked up with tailings that the vessels cannot navigate it. Only for a short time in Winter can these boats make a landing at the city.

WHEATLAND.

The second town in size is Wheatland, twelve miles southeast of the city. This place is of but recent growth, a station having been established here in 1863 by the California and O R. R., and a town having grown up around it. This is quite a shipping point for grain, vegetables, hay, etc., the shipment in 1878 being 11,984,690 pounds. The town contains two warehouses a large flour mill, two halls, three churches, several stores, shops, etc., about eighty dwelling-houses, and a population of about 600 souls. The place was incorporated in 1874.

This town is the centre of the finest agricultural portion of the county, and enjoys a good trade with the many farmers who congregate there. The *Record*, a weekly newspaper, is edited by F. F. Carnduff.

SMARTSVILLE.

This is a Simon-pure mining town, lying on the Yuba, eighteen miles above Marysville. This has been the scene of the most extensive hydraulic mining in the country. Operations were begun here in 1855, and the town has gradually grown up by absorption of the mining camps surrounding it—Rose Bar, Sucker Flat, and Timbuctoo—the towns in that vicinity having been nearly deserted. The Excelsior Canal Company owns nearly all of the claims here, and gives employment to a large force of men. Two hotels, several stores and saloons, two churches, a hall and a number of fine residences, with a population of about 400.

CAMPTONVILLE.

In the mountains is the old mining town of Camptonville, which had its rise with the opening of hill mining, in 1852. This place has also been the scene of large hydraulic mining operations, and mines have been worked all around and some of them are still in operation. The town still enjoys a good local trade, and has several stores, a church, school house, and a population of about three hundred. A military company, the Yuba Guards, exists here.

The little villages of Strawberry Valley, Brownsville, Brown's Valley and Greenville are all centres of small mining communities.

MANUFACTURES.

The manufacturing interests of the county are centred chiefly in Marysville, and in some branches are quite extensive. The first flour mill was built in 1852, and there have been in all seven mills, there being but one now remaining. The Buckeye mill manufactures about $750,000 worth of goods annually. The Marysville Woollen Mills, established in 1867, is also a very extensive concern, the annual product being $200,000. The large planing mill of Swain & Hudson is also one of the institutions of the city. The large flouring mill at Wheatland values its annual product at $200,000. There are now in the county nine sawmills in operation. At one time there were about thirty and great quantities of lumber was cut. The timber around most of these has become exhausted and the mills abandoned.

The number of factories of the various kinds in the county may be stated at 2 sash and blinds, 1 soda water, 2 flour mills, 2 foundries and machine shops, 1 brick-yard, 1 bag factory, 12 wagon shops, 1 brewery, 2 marble carving, 7 harness factories, 2 tinware and water tanks, 1 soap, 1 broom, 1 tannery, 1 woollen mill, 1 gas works, 9 saw mills. The value of manufactured articles for one year is about $1,800,000.

SCHOOLS.

Yuba County is divided into 34 school districts, that maintain 47 schools and a High School, the latter situated in Marysville. The number of school children in the county the past year is reported at 2,487, while the expenses of maintaining the schools was $34,217 99. Total value of school property, $55,005.

Aside from the public schools, a number of private schools are kept in various parts of the county; also two colleges or institutes. The College of Notre Dame, established by the Catholics in 1856, occupies a block in Marysville. The building was erected in 1856, at an expense of $60,000. The Knoxdale Institute, at Brownsville, was established in 1878, and has commenced its second year as a female seminary. A State Reform school was built at Marysville in 1861, at a cost of $55,000, and was discontinued in 1868, and the building torn down.

AGRICULTURE.

Yuba County is but partially dependent upon its agricultural resources, and cannot be classed as an agricultural county. Less than one-third of the soil is susceptible of profitable cultivation, the remainder being devoted to grazing, or being rough and covered with timber. The western portion lies in the valley, and is chiefly devoted to the raising of wheat and barley, the better class averaging twenty to twenty-five bushels to the acre of wheat, while the poorer but twelve to fifteen. In the little valleys that nestle among the hills are small farms, vineyards and orchards, but the farming there is necessarily on a small scale.

The first field of grain raised in the county was one of five acres of wheat, by Theodore Sicard, in 1845, between Marysville and Yuba City. From that year until 1848 several fields of wheat were raised every season by the few settlers. The discovery of gold in 1848, and the consequent rush to the mines scattered all thoughts of agriculture to the winds. Two years later, however, there were a few new-comers who settled on the rich, unoccupied lands, who ventured to sow a few acres of barley; others followed, until in a few years the land was all taken up, and considerable of it under cultivation. Barley was the universal crop for the first few years, the soil and climate not being considered adapted to wheat. In 1852 and 1853 several flour mills were built, but they imported most of their wheat. When the farmers understood the Summer-fallow process of raising wheat, they found that it could be produced in large quantities and of superior quality. Then the miller ceased to import grain, and the merchant flour, and agriculture received a great impetus forward.

A luxuriant growth of wild clover and grass covered the bottom lands, from which an excellent quality of hay was made by the early settlers. The cutting of this hay was the chief agricultural industry for several years, but the land was gradually ploughed up for grain. The last of this wild hay disappeared when the mining debris spread its mantle of sand over the fertile soil that sustained it. Since then grain hay has become the only kind used, many acres of which are cut annually. Vegetables, especially potatoes, form the leading crop along the rivers. Hundreds of Chinamen are engaged in raising vegetables on the bottom lands, for which they sometimes pay an annual rent of $30 per acre. The home of the potato is on Bear River, where all of the farmers have a number of acres planted with this tuber. The shipment of potatoes from Wheatland in 1878 was 1,082 tons, which represents the bulk of the Bear River crop and the larger portion of the potatoes raised in the county. The earliest agricultural report obtainable is that for 1852, which gives the product as 6,345 bushels of wheat, 128,376 of barley, 14,377 of oats, 810 of corn, 8,490 of potatoes, and 4,010 tons of hay. In 1865, wheat 4,554 acres, 72,474 bushels; barley 12,613 acres, 228,303 bushels; oats 396 acres, 8,281 bushels; corn 794 acres, 24,150 bushels; potatoes 110 acres, 8,083 bushels; hay 12,186 acres, 9,956 tons. 1878—Wheat 27,000 acres, 400,000 bushels; barley 9,476 acres, 171,500 bushels; oats

795 acres, 14,900 bushels; corn 510 acres, 22,500 bushels; potatoes 450 acres, 1,800 tons; hay 13,500 acres, 14,570 tons. The total number of acres cultivated has increased from 7,000 in 1852 to 23,697 in 1865, and 58,000 in 1878. There are no regular factories for the manufacture of butter; but the total product of that article among the farmers in 1878 is given at 20,000 pounds.

FRUIT.

Yuba County once held a front rank among the fruit-growing counties in the State. The first orchard was planted in 1847 by General John A. Sutter, opposite Marysville, on the south bank of Yuba River. The most celebrated orchard was that of George Briggs, on the Yuba, just above Marysville; both of these places have fallen before the sand and willows. At present the orchards of the Miller Bros., Grass Bros., L. B. Clark and a few others, are the only ones of any size, although nearly every rancher has more or less fruit trees, and small orchards are to be found in nearly every little mountain valley. About the year 1861 was the time when fruit growing was at the flood; since then the ravages of the mining debris have been so great that the best orchards on the river are partially or totally ruined. Many new ones, on a smaller scale, have been started since, however, and the total yield is about the same. In 1860 there were 61,677 peach trees, 6,225 pear trees, 4,181 cherry trees, 28,800 apple trees and 16,000 of other varieties. In 1870 there were 26,715 peach trees, 37,863 apple trees, 8,860 pear trees, 1,883 cherry trees and 22,480 other kinds. The Assessor has failed to report the number of trees, but the total value of the fruit crop for 1878 is given at $130,000. The number of grape vines in the county in 1860 was 500,000, wine 2,530 gallons; 1870, 490,000 vines, 75,000 gallons wine; 1878, 625,000 vines, 25,000 gallons wine, 2,000 gallons of brandy.

STOCK.

Large bands of stock have been grazed on the hills for years. Beef cattle, for supplying the mines and towns with meat, were kept by thousands on the broad, unfenced plains and in the foot-hills. Of late years, following the decline of mining and the diminution of the demand for beef, sheep have been substituted for cattle. The total number of cattle in 1852 was 4,482; in 1860, 19,062, and in 1873, 6,990. The increase in the number of sheep and the amount of the wool produced has been very great—1857, sheep, 5,573; wool, 21,000 pounds; 1870, sheep, 24,444; wool, 70,000 pounds; 1878, sheep, 54,575; wool, 160,000 pounds.

MINING DEBRIS.

The ravages committed on the fertile farms by the detritus washed down from the hydraulic mines have been enormous. Year by year the deposit of debris on the bottom lands becomes deeper, and the channels of the rivers become more choked with sand, and the farmers begin to realize that its progress must be arrested, or the most fertile and productive land must be abandoned. In this particular the agricultural and mining interests of the county, both so important to its general welfare, are at war. It is conceded by all that some arrangement must be made to check the farther washing of tailings into the river, as well as to guard against that already deposited there. It is impossible to estimate the damage that has been done by overflows caused by the filling up of the river beds.

The surface of the country has undergone a change; the streams, diverted from their obstructed channels, have been compelled to seek new outlets for their mud-burdened waters. Formerly the banks of the Yuba were several feet above the ordinary level of the water, and the channel was deep enough to admit of steamers and vessels landing at Marysville all the year round. Now, steamers of the lightest draught can reach the city only in seasons of high water. At Timbuctoo a deposit of seventy-five feet of tailings is in the river bed, and below that point it decreases gradually until at Marysville it is about twenty-two feet. The bottom land along the river, where once were fertile farms, large orchards and vineyards, and where thousands of miners were busy rocking their cradles, is now covered with a sterile deposit of from five to ten feet in depth, and where once waved the golden grain, and flourished the thousands of fruit trees, now grows the useless willow. Along Bear River also, the bottom land has been destroyed, except near Wheatland, where an expensive levee has partially saved a few acres.

LEVEES.

Levees have been very expensive to the citizens of Yuba County, and will continue so to be in the future. After the great flood of 1861-2, the city of Marysville commenced to enclose itself with an earthen wall. In 1863 a complete line of levee was constructed, encircling the whole city. This was, however, not high enough, which fact was demonstrated in 1875, when the water poured over its top, washed it away in many places, and flooded the city to a depth of from two to ten feet. The water remained in the streets and houses for three days, doing an immense amount of damage to property of all descriptions. A new and larger levee was immediately built at an expense of about $100,000, which has required more or less repairing every season. The cost of levees to the city has been $146,414.

The county also has built an immense levee along the north bank of the Yuba, known as the Brown's Valley Grade, at a great expense, the maintenance of which in a passably good condition has cost large sums of money. Another levee was built along the south bank of the stream, at a cost of $50,000, which has been allowed to go into decay. The levee along Bear River, built by the farmers living on that stream, protects 2,141 acres of land. Many private levees have been built along the rivers that, with the amounts paid by the city and county, render the total expense of levees in the county about $300,000.

PLACER MINING.

The first mining on the Yuba River was done in June in 1848, since when thousands of miners have thronged its banks, and millions of dollars have been washed from its sands in the pan, cradle, rocker and sluice-box. In 1850 and 1851 there were probably 10,000 miners in this county, on the river and its tributaries. The Yuba River was one of the richest in the State, and scores of worked-out mining bars, once the scene of bustle and excitement, now deserted and abandoned to the sands and willows, testify to the prosperity that once reigned there. In 1848, Rose Bar and Park's Bar were the mining localities on the river, but the next year, when the great influx from the East and abroad filled the gold fields with eager seekers of the precious metal, the banks of the river from Long Bar to Downieville were lined with a multitude of miners. Many rich bars were developed, some of which were soon exhausted, while others continued to reward the patient miner for a dozen years. These bars had a population of from twenty-five to as high as 2,000 people.

Here were to be found the miner, trader, hotel keeper, packer, gambler and loafer. Hotels, stores, saloons, shops and all the adjuncts of a town came and existed here as long as the diggings continued to pay; but no sooner did these give evidence of having become exhausted than there was an immediate hegira of the miners, who were soon followed by the traders and gamblers to new fields of operation. The incipient city that had sprung so suddenly into being, like a mirage, as suddenly vanished and was gone, gone to live but in the memory of the old miner, who loves to tell of the exciting times of '49.

The most noted of these bars in Yuba County were Ousley's, Long, Parks', Kennebec, Rose, Barton, Condemn, Frenchmen's, Bullards, Foster, Ferry, Atchison, Missouri, Slate Range, and Cut-

eye Foster. Scores of gulches, creeks, ravines and hills were prospected, named, worked and abandoned. There are probably not over one hundred white men engaged in placer mining at the present time, most of the claims, which pay but poorly in proportion to the olden times, being in the hands of the Chinese.

HYDRAULIC MINES.

Yuba County has been the scene of some very extensive hydraulic mining. As early as 1855, the system of mining by the use of a stream of water thrown from a pipe was adopted. Then the pipe was only two-inch canvas hose, with a nozzle less than an inch in diameter. The pipes now in use are made of ribbed boiler iron eighteen inches in diameter, and from the hydraulic engines are thrown streams of from five to nine inches. These great volumes are propelled against the gravel bank, distant sometimes 200 feet, the dirt being washed down and through a long tunnel cut in the bedrock or a flume, the gold being collected by the quicksilver scattered in the tunnels and flumes. The most extensive mining has been done from Timbuctoo to Mooney Flat, where hills 200 feet high have been washed away and the bedrock laid bare for about three miles. Sicard Flat, New York Flat, Camptonville, Oak Valley, and many other places are being worked on a large scale by this process.

QUARTZ MINING.

There is at present but little quartz mining being done within the limits of this county. For various reasons, the quartz ledges that have been developed have not paid for working. More than a dozen quartz mills have been erected that have been torn down or practically abandoned. At Brown's Valley, in 1863, several rich mines were developed and paid well for a few years, but they finally became too expensive to work and were abandoned. One mine at Timbuctoo was yielding good returns in 1860, but was worked out. Since then no mines have paid for the working and none have been developed to any extent, although hundreds of claims have been located, and hundreds more are only awaiting the sanguine prospector.

MINING DITCHES.

The pioneer mining ditches of the county were the Union, built in 1850-1, and the Miners' and Riffle Box, built in 1852. These ran from Deer Creek to Rose Bar. In 1858 there were 24 ditches, with a total length of 218 miles. The ditches centring at Smartsville have nearly all been united in the Excelsior Canal Company, and have a total length of 150 miles, and cost $500,000. Besides these there are 23 ditches that cost $100,000, and have a total length of about 100 miles.

SACRAMENTO COUNTY.

By J. N. BINGAY.

The County of Sacramento is situated in Central California, and is virtually the geographical and railroad centre of the State. It is bounded on the north by the counties of Sutter and Placer, on the east by El Dorado and Amador, on the south by Dry Creek, the Mokelumne River and San Joaquin River, and on the west by the Sacramento River. The county is nearly quadrangular in shape, and comprises, outside the city, the townships of Natoma, Center, Mississippi, Lee, Granite, Brighton, Sutter, Alabama, Franklin, Cosumnes, San Joaquin, Dry Creek and Georgiana. The boundaries of the county remain about the same as when it was organized in 1850, with the exception of some slight changes in the boundary line between it and Sutter County, the acquirements of Sutter Island from Solano County and the legislation, at the last session, of Staten Island to San Joaquin County.

This county is among the largest in the State, having an area of 1,026 square miles and a population of 36,000 people. It is traversed by the tributaries of the streams mentioned as boundaries, and also by the American River and several smaller streams. It is also traversed by the Central Pacific, Western Pacific, California Pacific and Sacramento Valley and Placerville Railroads. The western portion of this county is level, the eastern mountainous. The staples are hops, hay, wine, wool, butter, cheese and potatoes, while there are numerous large flocks and herds of cattle, horses, sheep and swine, and several important manufactories.

The support of Sacramento County is derived from the commercial, agricultural and mining interests. It is estimated that at least one-third of the soil most susceptible of cultivation lies along the banks of the rivers, which are liable to inundation in times of high water. These "bottom lands," in the American and Cosumnes Rivers, are exceedingly fertile, and are worth over $100 per acre. To the fact of these almost annual inundations can be attributed the enormous yields of fruits, vegetables, berries, grasses and grain, since the sediment deposited by this means equals guano as a fertilizer. On its extremities and in the interior of the county, grapes are cultivated on an extensive scale, and attain a remarkable size, as well as a richness of flavor that can scarcely be surpassed, if equalled, in the grape-growing districts of France. Although Sacramento County is distant from the Pacific Ocean about 100 miles, it is not deprived of the invigorating and health-restoring breezes of that quarter, and although there are times during the Summer season when the influence of the sun's rays becomes oppressive and enervating, nightfall is sure to bring complete restoration to the fatigued system. The soil of the valley portion of the county is a rich alluvium.

AS TO HEALTH,

Reliable data places Sacramento foremost on the mortuary list, and places her more favorably than any other county in the whole domain. The climate of Sacramento and vicinity is considered by many the best in the State. All the fruits of the temperate and semi-tropical zones flourish, while the gardens are in perennial bloom. The mean temperature for twenty-two years, deduced from three daily observations, is 60.35, and the mean of each month in three years is: January, 46.37; February, 50.55; March, 54.41; April, 59.52; May, 64.31; June, 70.46; July, 73.48; August, 77.48; September, 69.10; October, 62.53; November, 53.56; December, 47.05. The lowest temperature was 19 and the highest 102 degrees, and this latter for but a few hours in the day only, and but for a few days in the year at that. However warm the days may be the nights are always cool. Snow has fallen in this county but four times in twenty-seven years, and sunstroke is unknown. In the city, the mercury, in average places, has not of late years risen over 95 degrees, in consequence of the shade trees which line the sidewalks, the numerous evergreen lawns and well watered

streets; 95 degrees of heat in this light, dry air, is not so oppressive as 80 degrees on the sea coast. The average death rate is 14.54 in one thousand population, which fact places Sacramento County among the healthiest districts in the civilized world.

TOWNS, ETC.

Sacramento City—the capital of the State—has met with marked growth during the past year, and its importance as a commercial centre is more thoroughly established than ever. It is gradually becoming the distributing point for supplies for a considerable portion of the Pacific Coast. The improvements of the city—in opening and grading streets, in the erection of buildings for residences, stores and warehouses—indicates a degree of prosperity highly gratifying. The increase in railroad facilities has been considerable, and Sacramento may now claim to be a permanent railroad centre. The population of the city is now about 26,000. The Central Pacific Railroad Company has added very greatly to the general improvements in the city, in the enlargement and beautifying of buildings and grounds, and are just finishing a costly passenger depot. In their work-shops in the city there are employed from 900 to 1,500 men, as pressure of business may require.

Folsom.—This is the second town of importance in the county, its chief support being derived from the agricultural and stock interests. At an early day placer mining was carried on very extensively in the immediate vicinity of the place. The population is 1,000, while its schools are excellent, and it has a weekly paper called the *Telegraph*. The branch State Prison now being constructed is on the American River, two miles above the town. The quarries near Folsom possess an unlimited amount of capital building stone. Immense quantities of cobbles for paving purposes are being constantly shipped from Folsom, while some of the mines in the vicinity still yield well.

Cosumnes, situated on the Cosumnes River, eighteen miles from Sacramento City. The soil in this section is inexhaustible, while the locality is most desirable as a place of residence. Its vote at the late election was about 200, and it has a Post Office and a daily mail.

Brighton, on the Central Pacific Railroad, five miles west of the city, is delightfully situated in a rich agricultural region. The cultivation of vineyards is carried on very extensively, and the grapes attain an unusual size, even for California, while the wine manufactured from them is pronounced by the most competent judges to be of a superior character. Wheat and other cereals are also cultivated on a large scale. The water is pure and the general health good.

Elk Grove, a pretty little town of 400 inhabitants on the line of the Central Pacific Railroad, thirteen miles west of Sacramento, and in a section of the country whose enormous fields of fruit, grain and vegetables annually have made it famous. The society is good, while its educational advantages are excellent, and the sanitary condition of the place is sufficient to warrant the prediction that its growth will be steady and permanent. Its future, if these facts are any criterion, is indeed promising.

Florin is a promising village on the western Pacific Railroad, ten miles west of Sacramento. The principal productions of the section in which the village is located are vegetables and fruits, whose richness and flavor and remarkable size attests the quality of the soil. It has a population of about 100.

Franklin is a pleasant village on the upper Stockton road, fourteen miles west of Sacramento. Its population is in the neighborhood of 130 souls, and the abundant crops that are annually harvested in the vicinity are sufficient to support the argument that it is a favored section. Land can be obtained at reasonable rates, while the water is excellent.

Galt is a town whose population is estimated at from 400 to 500, situated twenty-two miles west of Sacramento, and it is a station on the Western Pacific Railroad. Its chief support is derived from the agricultural interest of that section, where cereals are produced in quantities really astonishing. The quality of the soil contiguous to the town is second to none in the State—a fact that has been repeatedly verified ever since its settlement. It is also the terminus of the Ione branch of the Western Pacific Railroad. Good schools, pure water, and a high order of society, are features which are at once attractive, and bespeak for Galt a healthy growth.

Hicksville takes its name from its founder, William Hicks, a prominent farmer, and is twenty miles west of Sacramento. The products of the land in this section are confined almost exclusively to the cereals, while the pursuit of stock-raising is very extensively engaged in.

Isleton, delightfully situated on Andrus Island, in the Sacramento River, about forty miles below the city. It presents a very neat appearance, and has many attractive features. The soil is very fertile, and when the construction of the levee is completed, its value can hardly be estimated. Fruit, grain and vegetables thrive luxuriantly. It has a Post Office, a daily mail, an express office, and a good hotel.

Michigan Bar is an old mining town, whose streets at the present time do not present the activity and bustle which characterized its condition at an early day. The hills around the place bear evidence of an immense amount of labor having been expended in search of the precious ore. Dairying and farming are the pursuits which are its main support now, though mining is still carried on.

Richland, on the Sacramento River, a few miles below the city, has a Post Office and a daily mail. Fruit and vegetables are the chief productions, and are a source of great revenue to the residents of that locality, which is very healthy.

Routier's Station (formerly Patterson's)—The country in the vicinity of this village can scarcely have justice done it by word-picturing. The fields of grain, extensive vineyards and hopyards and orchards that skirt the roads on either side, form a subject which is worthy of elaborate description and admiration. It is on the Sacramento Valley Railroad, thirteen miles east of the city.

Walnut Grove—There is no grander sight than that which is offered from the deck of a steamer on the Upper Sacramento River, in the vicinity of Walnut Grove. It is in the very midst of agricultural wealth, and enjoys other advantages conducive to health and prosperity, which are superior.

Walsh Station, nine miles east of the city, on the Jackson and Drytown wagon-road, is a very rich agricultural section.

SCHOOLS AND CHURCHES.

There are in Sacramento County 133 school districts, with handsome and commodious school-houses, classified as follows: High schools, 5; first grade, 50; second grade, 51; third grade, 32. The number of school-houses is 79. Number of teachers, 146, of whom 117 are ladies and 29 are gentlemen, with an average salary of $62 per month. The schools are maintained during an average of 8.9 months per year. Rate of county school tax for last year, seven cents. Total valuation of school-houses, with their furniture and apparatus, $293,953. Receipts during last year, $159,083; expenditures during the same period, $122,154 39. Number of children of school-attending (age between five and seventeen), 7,110; enrolled in schools, 5,694. The system of school education in this county is now very satisfactory—the examinations of the teachers and scholars, showing a high degree of efficiency and aptitude on the part of the former, and close application and consequent advancement on the part of the latter. In his last annual report, County Superintendent of Schools Landes remarks that "During the past year there have been better attendance and more real and thorough advancement by pupils, and the schools have been maintained a longer period than at any previous time since the organization of the county.

The increased number of school visits by school officers and parents, and the unusual interest in school elections and the selection of teachers, is a guaranty of the most flattering results in the near future." It is a generally conceded fact that the common school system as carried out in this county has been marked by the most eminent success, and is inferior to no county in the State, while in many Eastern localities it would, on comparison, rank far ahead.

Churches of various denominations are well distributed throughout the county, and on Sunday mornings the tones of the church bells may be heard reverberating through the cañons of the foot-hills, while the refrain is caught up and conveyed to the mountains by the gentle breezes floating across the valley.

FACTORIES, ETC.

Besides the Railroad workshops, to which reference has already been made, there are many manufactories in Sacramento County, not least among which are the potteries, of which there are three in this city, one in Sutter Township, and one at Michigan Bar, all turning out superior fire-tile wares of superior quality. One of these potteries confines its energies almost exclusively to the manufacture of sewer-pipe—another to the turning out of flower pots and paving tiles. The clay used is very superior, and is obtained in inexhaustible quantities at Michigan Bar, Cook's Bar, and other points in this county. There are also half-a-dozen flouring mills and one grist mill. The Capital Woollen Mills are now in the full tide of successful operation, and turning out fabrics of equality with any in the State. There are also five planing mills, the German tannery, smelting works by the Robinson process, seven distilleries, while the canning of salmon during the proper season is a very important industry. There are also numerous smaller industries, such as match factories, soap factories, boot and shoe factories, carriage and wheelwright shops, etc., etc., *ad libitum*, all indicating a high degree of prosperity, and indicative of a good time coming.

ANNUAL PRODUCTS.

The report of County Assessor Lansing for the year 1878 makes the following exhibits: Land enclosed during the year, 326,742 acres; land cultivated in 1878, 103,420 acres; in wheat, 19,826 acres, producing 237,854 bushels; in barley, 39,326 acres, producing 592,000 bushels; in oats, 2,374 acres, producing 44,100 bushels; in rye, 105 acres, producing 1,963 bushels; in corn, 2,345 acres, producing 83,110 bushels; in peas, 18 acres, yielding 600 bushels; in peanuts, 142 acres, yielding 150,000 pounds; in beans, 540 acres, yielding 12,560 bushels; 1,800 acres of potatoes, yielding 8,427 tons; 326 acres of sweet potatoes, yielding 1,529 tons, 3,800 bushels of onions from 33 acres, 33,940 tons of hay from 31,310 acres of land, 392,300 pounds of hops from 183 acres, 310,280 pounds of butter, 23,500 pounds of cheese, 394,000 pounds of wool, and 4,200 pounds of honey. The value of the fruit crop for the year was $325,200; there having been 3,640 acres in vineyards, 130 bearing lemon trees, 300 bearing orange trees, and 53 bearing olive trees. There were manufactured 736,000 gallons of wine and 4,300 gallons of brandy. There are in the county 8 breweries, which produced 560,000 gallons of beer. In that year Sacramento County had 9,630 horses and 334 mules. The total number of horned cattle was 15,777. She also had 176,265 sheep; 163 Cashmere and Angora goats, and 10,730 hogs. The improvements were mills, from which were turned out, by steam power, 225,800 barrels of flour and 98,000 bushels of ground corn. There are five mining ditches, with an aggregate length of 77 miles. There are four ditches which irrigate 1,000 acres, and one woollen mill which uses annually 320,000 pounds of wool. There are four railroads, with a joint length of 90 miles. The assessed value of real estate in 1879 is $7,753,965; assessed value of improvements in 1879, $6,141,680; assessed value of personal property in 1879, $4,682,740. Estimated population in 1878, 33,000; registered voters same year, 11,000.

LANDS.

There are in Sacramento County some 4,000 or 5,000 acres of Government land, and nearly the same amount of swamp and overflowed lands, which are being rapidly taken up. At the delta of the Sacramento River and belonging to this county are Sutter, Grand, Tyler, Andrus, Brannan, Sherman, Twitchel and Randall Islands, all of broad area and being reclaimed as fast as possible. Their soils are among the most fertile, their productions are most prolific, and, in an agricultural point of view, they are among the most desirable. The rate of taxation this year is $1 50, the same as it was last year.

SHASTA COUNTY.

By JAS. E. ISAACS.

Shasta County, although one of the older and more prominent amongst the mineral counties of California, possessing great resources in many metals, and conceded a brilliant prospect as to State importance upon development of its yet but barely revealed wealth, has been comparatively little written about for the information of strangers. Until 1872 there was no rail communication with business centres, and a week often was consumed on a journey to Sacramento or San Francisco by stage and river steamers. The California and Oregon Railroad, whose present terminus is at Reading, now places us within one day's travel of the Bay; and adventurers are daily availing themselves of its transportation to seek and take up our quartz ledges and farming lands.

LOCATION.

Shasta County is bounded on the north by Siskiyou and Modoc counties, on the east by Lassen, on the south by Tehama, and on the West by Trinity County, it being nearly enclosed by mountains, the peaks of some of which are very lofty. The county was organized in 1850. Its area comprises about two and a half million of acres. The surface is more or less broken, and its character may be designated as mountainous.

CLIMATE.

The seasons are divided into the wet and dry. Diversity of temperature exists according to place of elevation, so that a climate to suit any taste may be found. In Summer the temperature ranges from 75 to 110 degrees, in Winter from 30 to 65 or 70 degrees, with exceptional days either warmer or colder. The Summer heat is divested of those enervating effects peculiar to less favored localities by the dryness and pureness of the atmosphere which is laden with the grateful balsam odor of pines. The mercury sometimes rises astonishingly high, but out-of-door labor is not accompanied with any danger from the sun's rays. The nights in Summer are pleasant and cool, and rain-showers have been known to take place during the heated term. The Winter's rainfall is most abundant, averaging 70 inches, while at rare intervals the record has shown nearly 100 inches to the credit of a single season. That important factor to a successful mining section, water, is obviously not wanting in Shasta. As for the healthfulness of the climate, though it may be equalled, it is not surpassed in the State. Contagious diseases are unknown, and there is comparative freedom from pectoral complaints. The native born and rising generation is distinguished for robustness of constitution and sturdiness of limb, and does credit to the indomitable and energetic pioneers, whose pathway the Wintoon and Pitt River Indians so hotly contested.

FARMING LANDS.

Shasta County at present bears no special importance in the matter of agriculture. The farming interest was ignored when the placers were rich, and it is only but lately that attention has been devoted to tillable soil and its fertility. The farming lands lie for the most part east of the Sacramento River, one section having the town of Millville for a centre, while others range up the Fall River and Burney Valleys. In Fall River Valley there is considerable swamp land, which is fast being reclaimed. The tract of land known as the Reading grant, the title to which Major Reading obtained in 1843, borders on the west bank of the Sacramento River for twenty miles north of Cottonwood. It embraces nearly all the low bottom lands in what is known or frequently called the Upper Sacramento Valley. It contains 26,000 acres, a large portion of which has been sold in small farms, the remainder being held for sale by the owners of the grant in small subdivisions. A large quantity of land is waiting for settlers, and it is simply a matter of time when it will all be taken up. The value of land depends, of course, on quality and location, ranging from $2 50 to $50 per acre. Good grazing land is worth from $3 to $10. All kinds of produce common to the State is raised with facility and in good quality, fruits especially being noted for their superior flavor, surpassing in this respect—in the instances of apples, pears and peaches particularly—the fruit grown further south.

MINES, ETC.

The first and most engrossing interest in Shasta County is mining. The prosperity of the county has always been, and in a great measure will continue to be, dependent on the extent of mineral products. After the exhaustion of the larger gravel diggings—marvellously rich while they lasted—the future of the county was tacitly regarded as being without much promise. Capital was withdrawn for investment elsewhere, and, although mining remained the chief occupation of the people, it was of a desultory character. Within the past two years there has been a reaction. The poverty of the gravel diggings, which had been worked over and over again, finally caused the miners to study out the problem of where the gold came from which fed the gulches and creeks, and prospecting in rock followed. The results have been most encouraging. In every direction ore has been discovered on the hills, and the revelations made have disclosed the presence, not only of gold and silver, but of iron and copper. Although no very extensive developments have yet been made, (there has hardly been time for that, considering the amount of capital employed), rich prospects are continually being reported, and rock-claims are being taken up daily. Within quite a small radius, say two or three miles of the town of Shasta, many discoveries of promising value have been made within the past year, and Mr Alvin Potter, who controls a number of these, has erected a mill on Spring Creek, where ore from the different ledges is being profitably reduced. The attention of mining operators is again being directed to this county, and outside capital is already emboldened to make ventures in the new mines, but it has not yet come in the volume looked for and justified by the various prospects. By experts the mining interests in Shasta, notwithstanding the great yield of the placers, is considered as being only in its infancy. A new era is expected. It will be the era of the employment of capital by scientific skill, when the innumerable ledges recently brought to light will be stripped of their wealth. Many discoverers of gold-bearing rock are without means to prosecute work on a commensurate scale, but in these instances arastras are used profitably, and during last Winter, in some places, the little machines turned out as high as $1,500 per week. The capital needed here will undoubtedly come for investment when confidence is established by actual knowledge of the mineral resources of our mountains, which, so to speak, have but just been tapped. Amongst the number of towns sustained by mines are Shasta, Whiskeytown, French Gulch, Buckeye, Churntown, Furnaceville, and Copper City. Material progress has been made lately at nearly all of

these points. On Mad Ox, about eleven miles from Shasta, the Grotefend Company has erected a mill, and is opening up a ledge which is improving with the order of development. The Afterthought Company, on Cow Creek, has just had some fine reduction works constructed. The Extra, at Copper City, with its mill, is turning out about $20,000 per month, and at the same place other mills have been projected for rapidly improving ledges. The Bully Hill and Winthrop are prominent mines at Copper City. Near French Gulch, at Deadwood, many quartz claims have been located within the past few months, the prospects in several instances being rich; while at French Gulch itself the Highland and Washington mines are being worked successfully.

EDUCATION.

The public school system affords entirely the means of education within the county. The number of census children between the ages of 5 and 17, is 2,170, and there is a school for about every 50 scholars, there being 44 school-houses in as many districts. Forty-seven teachers are assigned to these districts, and the teaching term at present comprises eight months. For a number of years the educational interest has been directed by Mrs. D. M. Colman, whose efficiency and application has been so conspicuous that her efforts heve received recognition by the voice of the people, in being repeatedly elected to the County Superintendentship. The cause of religion is outwardly languishing, there being no towns exhibiting sufficient spirit or interest to retain a permanent ministe". The circuit system is in vogue, and is prosecuted by about all denominations. Churches exist in most of the larger places, and at Shasta there are two edifices, one erected by the people, which is open to all creeds, and one consecrated to the Catholic religion.

PUBLICATIONS.

Three weekly papers are published in the county. No pretension is made in their columns to question issues at large, but local interests are devoted to with attention. The Shasta *Courier*, published at Shasta, is the third oldest weekly in the State. Through many vicissitudes of change is has survived, a prosperous sheet. It is now in its thirtieth year, and is being conducted with skill by W. L. Carter. It is Republican in politics. The Reading *Independent*, issued at Reading, is now in its third year of publication, and is ably edited by Frank M. Swasey. It professes independence in politics, but has a Republican tendency. At Millville the *Record* is published by Chas H. Smith, and is in the second year of its career. It is not committed to any set of ideas or principles except the cause of temperance, which it advocates persistently.

TOWNS.

Shasta, the county seat, with a population of about 1000, is situated in the southwesterly part of the county, at a distance of seven miles from the railroad terminus at Reading. It is on the line of the stage routes to Weaverville and Yreka, the roads leading thereto being for the most part turnpikes of excellent grades. It is one of the prettiest of our mountain towns, and is invested with interesting pioneer associations in regard to notable men and events. The United States Land Office is located here—Wm. E. Hopping, Register, and A. Dobrowsky, Receiver. There are telegraph, daily mail and express facilities. The larger buildings comprise the Court House, two churches, school house, two hotels, and the halls belonging to the Masons and Odd Fellows. The water supply is of the best in quality, being living mountain springs. The healthfulness of the town is highly reputable in Northern California.

Reading, the northern terminus of the California and Oregon Railroad, is a growing and thriving place, full of bustle and energy, and is deemed to have a promising future. Freight teams from all directions—from Yreka, Scott's Valley, Weaverville, Copper City, and Big Valley centralize here for the distribution of supplies and merchandise, which are conveyed by the railroad. In all probability Reading will remain at the head of rail transportation for some years to come. The Oregon United States mail is carried to and fro daily, there being 275 miles of staging to the Southern Oregon Railroad terminus at Roseburg. The distance from Reading to San Francisco, via the Vallejo route, is 255 miles. Mount Shasta is sixty miles north of Reading. The town, which contains a population of 600, possesses four hotels, school house, and a Masonic and Good Templars hall.

Anderson, a new town on the line of the railroad, 12 miles south of Reading, is the centre of the agricultural lands situated within the Reading grant. There is considerable freighting to the section around Millville. Among the buildings are two hotels, school house, post, express and telegraph offices. Population, 300.

Cottonwood, in the southern part of the county, is 17 miles south of Reading, on the line of the railroad. The shipments from this point consist principally of cattle and wool. The population is 100, and the town boasts of a fine hotel.

Whiskeytown is a mining town, five miles north of Shasta, in the westerly part of the county. In the vicinity there are many claims, quartz and placer, and recent developments have given impetus to the business of the town. The population, which is about 150, for the greater part consists of miners. A school house and hotel are in the place.

French Gulch, 15 miles north of Shasta, is one of the oldest mining camps in the county. A revival of the mining interests has lately taken place, owing to new discoveries in quartz. The famous Deadwood mines are eight miles distant. The town has 200 people, and includes two hotels, a school house and church. In the southwestern part of the county are a group of mining towns, consisting of Centerville, Horsetown, Piety Hill, Janesville and Igo, the last named of which is the most important. At Igo are the Hayward mines and ditches.

Millville, the principal agricultural town in the county east of the Sacramento River, is twenty miles from Shasta. It is in a flourishing condition, and is improving rapidly, many tasteful residences adorning the place. Besides a first-class flouring-mill, the prominent buildings include a school house, church, Masonic, Odd Fellows', Grangers' and Good Templars' halls. Population, 500.

Copper City is located in the central part of the county, and during the past two years has assumed considerable importance owing to the promising mines which have recently been uncovered. The abundance of mineral indications in close proximity would seem to foreshadow a favorable destiny for the town. Population, 300.

On the east of the Sacramento River there are a number of small towns sustained by mining, among which are Furnaceville, Buckeye, Churntown, Burgettville, Parkville, and Dog Creek. About 100 miles east of Shasta is the town of Fall River, sometimes called Fall River Mills, a lively agricultural place of about 250 population.

STATISTICS.

The population of Shasta County is 10,000. The number of voters, 1,800. The taxable property by the last assessment roll was $1,976,793. Rate of taxation, $2 50 on the $100, being the same as last year. County scrip on the General Fund is worth 80 cents and Hospital scrip 95 cents on the $1.

The county indebtedness, which in 1879 was $91,971 35, has been much reduced through the efficient management of the county officers, a number of whom—among them S. Hall, Sheriff, and Clay W. Taylor, District Attorney—have been re-elected time and again.

The estimated value of the Court House, Jail, Hospital and other property is $25,000. The County scrip on the General Fund and Hospital scrip is worth nearly par, thus showing a good financial status for the county.

SCENERY.

To the tourist the natural scenery of Shasta wields a potent fascination. Other than at Yosemite there are no scenic effects in the State more bewildering and purely grand than those which glorify the face of the country surrounding the Lower Soda Springs. Mount Shasta, whose stupendous beauty has inspired the minds of painters and poets to create art expressions of its magnificence in its towering isolation and ponderous grandeur, is but thirteen miles distant. Close at hand, too—within seven miles—are the picturesque Castle Rocks, which for two miles extend with forms in mimicry of the architecture of man. The storied battlements and turrets of the German Rhine are at one time suggested with varied fidelity; then the illusive scene changes, and before the eye lie castles in ruins, their walls moss-grown and hoary with antiquity, while over all rests the mournful air of desolation and decay. Seen at evening, when the last expiring rays of the setting sun dwell upon the Castle rocks with a mellow touch of pensive life and wistful beauty, the spectacle is profoundly moving to the imagination. Nature, whose prodigality is here so marked, expresses herself again in an exceptional way in the crystal body of water near the rocks, known as Castle Lake. The transparency of the water is marvelous, but the bottom cannot be seen, nor has it even been sounded.

LOWER SODA SPRINGS.

The Lower Soda Springs are situated about sixty miles north of Reading. Since the establishment of rail communications with the southern part of the State the springs have been a favorite and increasingly popular resort. The waters are ice cold, grateful and effervescent to the taste, and possess medicinal value in rheumatism, sterility, and many weaknesses and ailments. The streams everywhere teem with the primest trout, and the woods are abundant in game, large and small. If there is a paradise for the true sportsman it is in the country hereabouts. A good hotel and a store are at Lower Soda Springs. The Burney Falls, regarded by many in attractiveness, as second only to the Yosemite Falls, are situated in the northeasterly part of the county, eighty miles from Reading. The falls are seventy-three feet in height, and the line the water is precipated over is in the shape of half a circle. The Fall River Falls, at Fall River City, consist of a regular succession of water shoots, extending over a distance of half a mile. The Clover Creek Falls are fifty feet high, and considered quite romantic. Other falls beautify the landscape in various portions of the county, but the foregoing mentioned are the most prominent in interest. At the foot of Old Bally Mountain, where Willow, Mill, Crystal and Clear Creeks are confluent, are many beautiful scenes of a picturesque character. The site of the well-known Tower House, a popular Summer resort, is here, being twelve miles north of Shasta. During the heated term the Tower House is a desirable place of residence, owing to the coolness of the atmosphere from the presence of so much running water, and the grateful comforts of luscious mountain fruits, which are in great abundance. The foregoing points of interest thus briefly referred to, and others to which no allusion is made, might be dwelt and expatiated upon as being distinguished for natural beauties, interesting not only to the idle tourist, but to students and men of science. Among the mountains, besides the many minerals and curious conformations of rock, are a numerous flora, petrified sea-shells, and woods and caves of stalactite.

SANTA CLARA COUNTY.

By E. M. ISAACS.

The Santa Clara Valley, which is included in Santa Clara County, is shaped somewhat like an elongated horse-shoe, opening on the north into the southern arm of San Francisco Bay. Its entire length, north and south, is about sixty miles, with an average width, perhaps, of half that distance, from summit to summit of the double chain of the Coast Range of Mountains, which gracefully hold it as in the hollow of a great hand. The western slope of these mountains includes San Mateo and Santa Cruz Counties, the eastern Stanislaus and Merced, Alameda County on the north and San Benito on the south. This is regarded as the garden valley of the Pacific Coast, and its principal city, San Jose, which is the county seat, as the garden city of the West. The nearness of Santa Clara Valley to the ocean, and its separation from it by the western range of mountains, both have an influence on the climate. The western and northern breezes from the ocean and bay are sensibly more invigorating, having swept over the waters, and yet their harshness in Winter is greatly modified by the mountains, which also hold the fogs in check. The coldest weather in Winter here very nearly resembles the average October day in the Eastern States. Ice is rarely seen thicker than a window glass, and comparatively few Winter mornings have even a light frost. The heat of Summer is very nearly in the same proportion; a short time only is the heat excessive, and then only a few hours in the middle of the day. The nights are delightfully cool throughout the year, and nearly the same bed-clothing is requisite in Summer as in the Winter, and, with a fair amount of exercise during the day, delicious sleep is assured.

THE LANDS AND PRODUCTIONS.

There are in Santa Clara County 832,000 acres of land. Fully three-fourths of this area is mountainous and sparsely inhabited; a great portion of it on the east side is being utilized for stock ranges. Horses, cattle, sheep and goats live on these hills and in the ravines the year around, flocks of a thousand and upward being attended by a single shepherd. There are, however, on these same mountain sides many large and well cultivated farms, which produce large crops of wheat and barley, and all of the fruits of the temperate zone, as well as many that are semi-tropical. Fair dwellings dot the mountain sides and foothills, surrounded with orchards and gardens, which look in the distance like pictures hung upon a perpendicular wall. In Winter the background of this picture is woven in all the shades of green, darkly spotted here and there toward the summit with scrub oaks and stinted evergreens; for none of the luxuriant forests, which are a marked feature of the western range, are found on the eastern chain of mountains. If one is the fairer picture to look upon, the other can boast of its deeper riches in mines, forests and oil wells. Nature, always bountiful, if she withholds in one direction, bestows in another with a lavish hand. The land of the valley has every variety of soil, from the light sandy loam to the rich alluvial bottoms. On the west side, below the heavy-timbered region, from the foothills downward to the valley, the soil is a gravelly loam, especially adapted to

the cultivation of the grape, and all other fruits flourish throughout the entire valley in perfection. In that portion known as the "foothills wine district," there are numerous vineyards; some of them very large, and all are remunerative. A farmer who has a well-cultivated grape-patch of no more than ten acres has a sure guarantee of a handsome income. One little vineyard, two miles west of San Jose, of only six thousand vines, brought last year nine hundred and fifty dollars for table grapes.

From the low, marshy land skirting the bay, there is a large income realized every year from strawberries. Through the Summer season there are shipped from Alviso to San Francisco from thirty to seventy-five tons per day of this delicious fruit. It is hard to estimate the possibilities of such a soil in such a climate, when we consider that not a one-hundredth part of the land has been put to the test of its highest productive powers.

The total assessed value of the property in Santa Clara County is $27,603,240; of this amount there is in real estate, $24,181,865, and the personal property of the county is valued at $3,421,375.

TOWNS AND VILLAGES.

Until the gold excitement of 1849, Santa Clara County was almost wholly inhabited by Mexicans and Indians. Considering, therefore, the fact that it is only thirty years since the only human habitations in the valley consisted of a few scattering adobe huts along the now far-famed Alameda, and at each extremity the present sites of the two beautiful cities—San Jose and Santa Clara—it is really surprising how many cities and villages have arisen, and to what extent the varied business projects have already reached. The largest and most important of these cities is San Jose, the county seat. Santa Clara is really a part of San Jose, and they are considered as one, being only three miles apart from centre to centre, and connected by a horse railroad, through a shaded avenue, which is a continued city of palatial residences, and probably the most delightful drive on the Pacific Coast, if not on the continent. San Jose contains a population of 17,000 inhabitants, and Santa Clara 3,000. These cities, and the surrounding country for many miles, is a perfect garden, where roses bloom every month in the year. The markets are supplied with fresh vegetables and fruits from January till December. In short, if San Jose is not the Paradise of earth, the people think so, and that is fully its equivalent. Their reasons for self-congratulations on superiority of location, are many and well founded. That of climate, beauty and fertility of the surrounding country, and the variety and quality of productions, have already been enumerated as the most important. In addition to these, the travelling facilities are an important item in a choice of location. San Jose is highly favored in this also. Being distant from San Francisco only fifty miles, and having a choice of three railroad lines, two on the east side of the bay and one on the west, the only difficulty is in which one to choose, for the scenery on each route opens a panorama of marvellous beauty. A stage line also connects with a steamer at Alviso, which makes tri-weekly trips through the year, and daily trips in the strawberry season.

EDUCATIONAL FACILITIES.

There are in San Jose seven public schools, employing thirty-seven teachers. The total number of school children is 3,431: total number enrolled, 2,329. Five of these schools have elegant and costly school buildings, situated in pleasant and healthy localities, with ample room for ornamental trees and shrubbery and convenient playgrounds. It is believed that no city in the State has a more thoroughly educated and efficient corps of teachers than San Jose. There are also numerous private schools and colleges. The University of the Pacific is located near the Alameda, about midway between San Jose and Santa Clara. The building is an elegant modern structure, costing over $50,000. Connected with it is a young ladies' seminary.

The Academy of Notre Dame, the Commercial College, and a number of others, are giving efficient instruction in all of the branches of science, and the embellishments of music, literature, the arts, elocution, telegraphy, phonography and dancing. Of literary, debating, dramatic, astronomical and reading clubs, for both gentlemen and ladies, there is no lack. These associations are all liberally patronized by young and old.

The Library Association holds an important place in the educational facilities of the people, though all of the efforts of its patrons and friends to make it a free institution have thus far failed. Members only, who pay fifty cents per month, are permitted to enjoy its advantages.

THE STATE NORMAL SCHOOL

Is a credit to this beautiful city. Its building is an imposing structure, erected at large expense. From 500 to 700 pupils here find every facility, in a variety of departments, to add to their knowledge of books and training as teachers, that able instruction, standard works and apparatus can impart.

SANTA CLARA COLLEGE

Has also a large share in the claim of this locality as the educational centre of the Golden State. To the educational advantages here enumerated, and the fitness of the locality, the people of Santa Clara County are no doubt largely indebted for the munificent bequest of the late James Lick, to be appropriated in the erection of a costly observatory on Mount Hamilton, for the purpose of astronomical observations. Arrangements are now nearly completed to put this monster enterprise to a practical test. Not the least of its advantages will be the employment furnished to laborers. Here the educated professors of the science of astronomy will congregate in future years, and their observations and discoveries will add incalculably to the accumulated store of the world's scientists in past ages. Through them and by personal observations all who will can receive a portion of that enjoyment derived from a contemplation of one of the grandest scenes in Nature, a view of her unbounded riches, spread out underneath in a medley of forms—colors, mountains, silvery waters, forests and fields, making a landscape indescribable in beauty—and overhead in the wonders and glories of the starry firmament.

The road to the summit of Mount Hamilton, which was one of the conditions of Mr. Lick's will, was constructed some years ago, at an expense to the county of about $100,000. It is an easy grade, a distance of twenty-seven miles from San Jose. Its course, describing all points of the compass, is like that of the mariner "tacking" ship into port against a head wind. A hint even at description of the many objects of interest on the way—for every point and turn of the road opens a new view—would require a lengthy article of itself.

Each one of the towns and villages of Santa Clara County has not only its own peculiar industry or attraction, but all are gaining in wealth and population. Unlike many of the mining districts of California, there is not a "deserted village" within its borders. The muse of the poet could find here many another theme on which to expand his genius, but not that. Of these towns and villages not already mentioned

GILROY,

Near the southern line of the county, is next in size, the population being from three to four thousand. It is a lively city, and has the best of foundations for future prosperity, a rich surrounding farming country. Dairying is the leading pursuit.

MOUNTAIN VIEW AND MAYFIELD,

Both on the line of the San Francisco and San Jose Railroad, are also in the midst of a rich farming district and yearly adding to their wealth and importance.

ALVISO,

At the head of the bay, has the advantage of a shipping port, and is also a station on the narrow gauge railroad from San Francisco to Santa Cruz. Its steam flouring mill and large storehouses for grain, together with its extensive freighting business, which is quadrupled in the fruit season—and Alviso, with its few hundred inhabitants, never accumulates the rust of indolence.

MILPITAS, BERRYESSA AND EVERGREEN,

All in a straight line with the Coyote River, and about equal distances from it on the east, lie near the beautiful foothills of the eastern range of mountains. The two latter, without the advantages of railroad or other public communication with the outside world, are a little world of themselves, and a charming one too, if well-cultivated farms, gardens, singing birds, flowing rivulets and Nature's smiles, have a charm in them.

SARATOGA,

In the western foothills, with its grand scenery, incomparable climate, its quantity and superior quality of fruit (for it is in the warm belt), and its paper-mills, holds an enviable position in this highly-favored valley, both for its natural advantages and the addition of patient industry. Following around the southwestern curve of the horseshoe-shaped valley, we come to

LOS GATOS, LEXINGTON, GUADALUPE AND ALMADEN.

Los Gatos is a fine place, and it has sensibly felt the quickening of new life which the narrow gauge railroad has given to all the towns through which it passes. Lexington is on the old stage road through the Santa Cruz Gap, nestled in among the hills, hidden from view till the traveller is right in the heart of the town, which consists of a hotel, a store or two and a few shops. Nature must have been in one of her wildest moods—out on a grand frolic—when she fashioned the hills above Lexington. She threw them together with a perfect abandon of recklessness, leaving the deep gorge between, known as Santa Cruz Gap, the bottom of which is the bed of the Los Gatos Creek. Near here is the upper reservoir which supplies San Jose with water, owned by an incorporated company. The road from here to Santa Cruz winds like a serpent around these mountains, in some places with scarcely room for a carriage track, so frightfully near the edge of precipices as to be overpowing to timid people. The railroad finds a lower level, running for miles almost under the wagon road.

The Guadalupe Quicksilver Mine, though formerly very small, yields at present a sufficient quantity to warrant its constant working. The expenses of development, though enormous, will probably be compensated in time.

NEW ALMADEN

Has become far-famed for the depth and wealth of its quicksilver mine. It yields near an average of one hundred thousand pounds per month, giving employment to seven or eight hundred men. The town, which is situated in a deep gorge of the mountain, is a beautiful place, bustling to the finger ends with activity. New Almaden is twelve miles southwest of San Jose, and connected with it by a daily line of stages.

THE SOUTH PACIFIC COAST RAILROAD.

This is a comparatively new project, and, being entirely independent of subsidies, is also a novel project in the history of railroads. The benefit which this road has conferred, and will confer, on the people of Santa Clara County cannot be overestimated, as it is an entire gratuity. Every acre of land they appropriated, they paid for to the full extent of its value, and all damages resulting from it. There are very few men in the world's history of ventured fortunes, who would, if they had the ability and the means, undertake a project involving the enormous expense of tunnelling the Santa Cruz Mountains. The largest tunnel, No. 8, which opens at Wright's Station, is over a mile in length. The first part of 1880 the South Pacific Coast Railroad was opened its entire length (80 miles) from San Francisco to Santa Cruz, and a new medium of transportation afforded between these two important points. There is a terminus at Alameda Point, where passengers cross by ferry to San Francisco. Connections are also made with Oakland (14th street), and hourly boats from the city transport passengers for Oakland and Alameda. The advantages to the public of this competing line are very apparent. Whatever faults are justly chargeable to railroads in general as monopolies and gobblers of the public domain, which rightfully belongs to the common people, the hands of the South Coast Pacific Railroad are washed clean of this accusation. On its line, not only old towns have been brightened up, but new ones have been created. No laboring poor man can look with envious eyes on their possessions and say that he has either a legal or a moral right to the land they occupy. The unoccupied lands contiguous to their route are not only enhanced in value, but easier of access. From Los Gatos southward, up the mountain, through the three tunnels, and down on the other side, the scenery is wild and beautiful, resembling in many ways the route of the Central Pacific through the Sierras. There is a station near the "Felton Big Trees." A visit to that far-famed locality is now very cheap, and easily and cheaply accomplished, the expense being compensated a thousand-fold in one of the grandest sights in the known world.

THE OIL RESERVOIR IN MOODY'S GULCH.

The location of this newly-developed "mine of wealth" is in the township of Lexington, about one and a half miles southeast of Alma Station, on the Narrow-Gauge Railroad. The success of this enterprise is due to the unbounded perseverance of Mr. McPherson, the President of the company lately organized for the purpose of prospecting. Mr. McPherson came to California about six years ago, as agent for Farrar & Co., of Buffalo, N. Y., manufacturers of engines and boring apparatus, for the celebrated oil district of Pennsylvania. He turned his attention first to the Los Angeles district, where he spent his money and efforts, without success. That he is now about to reap the reward of the patient application of years is a matter of congratulation of his many friends. Soon after reaching a depth of 730 feet, which required five or six months' hard labor, the out-pouring stream of petroleum ascended to a height of one hundred feet above the surface of the ground, pouring out a waste of one hundred barrels before it could be stopped. Oil is now being pumped at the rate of a barrel an hour.

If this discovery reaches the proportions that it is confidently believed it will, the Narrow-Gauge Railroad Company will, not unlikely, build a branch road to the well or wells, from Alma Station.

NEWSPAPERS.

There are eight newspapers published in Santa Clara County, six of them in San Jose, one in Gilroy and one in Santa Clara, all of them independent in politics, except the two leading dailies in San Jose—the *Mercury* and *Herald*—the former Republican and the latter Democratic. The oldest of the eight papers, and the one having the largest circulation and influence, is the San Jose *Mercury*.

FRUIT CULTURE.

The leading productive industry of Santa Clara Valley is fruit culture. The Assessor's estimated value of the fruit crop of 1878 was $500,000. Of this amount there were 3,325 acres of grapes, 1450 bearing lemon trees, 3,150 orange trees, and 2,000 olive trees. There were also several large almond orchards, which, for some reason, were not on the assessment list. All of the other fruits included in this cash estimate can be grown in any part of California. The hundreds of fine orchards in Santa Clara County testify to the readiness

with which apples, pears, peaches, plums, prunes, apricots, cherries and nectarines can be produced in any locality of the valley, the tops of the mountains being no exception. The carloads of fresh fruit sent to the East, and that which also finds a ready market in San Francisco, constitute but a tithe of the annual income of the crop. Two drying, and one canning factories give employment to hundreds of women and boys, from May to November. These fruit-preserving factories have made fruit-growing a safe investment of money and labor, and they have given a sure guarantee to the several nurserymen of a handsome yearly income, besides securing a fortune for themselves. The number of cans and pounds preserved reach into the millions.

POPULAR RESORTS.

The principal watering place, and one most frequented by strangers, is the Gilroy Hot Springs, located in the foothills twelve miles east of Gilroy. A fine hotel, two score or more of cottages adjoining, with bathing accommodations, and the medicinal properties of the water, are the chief attractions. Here, through the hot season, visitors from abroad make a long gala day, and return to their homes refreshed in body and spirit.

ALUM ROCK,

Seven miles east of San Jose, is a very popular place of resort for residents of the city, as also strangers who are pleasure seekers. Here are located white sulphur, soda and other mineral springs. This delightful nook is a cañon, through which flows Penitencia Creek; a city reservation, containing 400 acres, reserved for a pleasure park. A hotel, a large dancing floor, underneath the grand old sycamore and evergreen trees, commodious bathing houses, and stables, constitute the main improvements. Otherwise, Nature has her own way here. A legal enactment prevents the use of firearms on the reservation, consequently the squirrels, quails and other birds are very much at home, picking up the crumbs that drop from lunch baskets with perfect assurance of protection. The avenue leading to this park is bordered with a double row of shade trees, making of it a fascinating drive, over a gravelled road as smooth as a house floor.

PUBLIC BUILDINGS.

Of the school buildings mention has already been made, under the head of educational facilities. The Court House is an elegant structure, erected at a cost of $200,000. Its dome is visited almost daily during the Summer season to obtain views of the surrounding country.

THE ELECTRIC LIGHT TOWER,

200 feet high, with brilliant reflectors, excites admiration, and evidences the enterprise of San Jose.

THE GENERAL FEATURES

Of any particular locality, if fairly represented, are more reliable information than the minutæ of statistical figures, unless every article of production and manufactory, and their value, were placed side by side. It is the combined product of a very extensive variety of industries which constitute the wealth of Santa Clara County. It cannot properly be called a dairy country, and yet that constitutes a large item of income. Last year there were 115,000 pounds of butter made and 550,000 pounds of cheese, and there are numerous milk dairies also; but all of them combined are only a drop in the bucket of her income. Her population of 40,000 inhabitants are, as a rule, industrious and provident, and they enjoy the fruit of their labor in an eminent degree. If there are exceptions—the like of whom every country in the world drags along its share—it is, as a rule, their own fault; for the worthy poor in a country whose soil and climate offer everything that is requisite to a luxurous living are very rarely seen. When such cases do occur they are promptly relieved. Here, mention should be made at least, of the San Jose Ladies' Benevolent Society, with the labor of love they have accomplished within the past seven years. They have erected for themselves, a fame, in genuine deeds of charity, more enduring than monumental marble.

Although Santa Clara County has never overdone any particular branch of industry, she now needs, in common with all California, more small farms and small farmers, with a still more diversified agriculture. Cultivation like that which Franco has given her soil, and ten thousand additional families could erect splendid homes within her ample borders.

SOLANO COUNTY.

By ALEX. DUNN, County Clerk.

Solano County has a position about midway between the northern and southern extremities of the State of California, and twenty-two miles north of San Francisco. Its boundaries are mainly natural, having the Rio de Los Putos (commonly called Putah) Creek on the north, the Sacramento River, Suisun and San Pablo Bays, and the Straits of Carquinez are on the south, the Sacramento River and Yolo County on the east, and San Pablo Bay, the summit divide of the Suscol Hills and Blue Mountains on the west. Not exactly square, but about forty miles from north to south, and averaging almost as much east and west. It contains an acreage of about 670,000 acres, 100,000 of which are swamp and overflowed lands, bordering on the Sacramento River, Suisun and San Pablo Bays. One-third of this, perhaps, has undergone the process of reclamation, placing them among the most productive lands of the State.

With an uninterrupted water front of over 60 miles, 25 of which are on the Sacramento River, 25 on Suisun Bay and the Straits of Carquinez, and 10 on Napa and San Pablo Bays, its facilities for transportation are more than an average.

Solano ranks tenth of the 52 counties in the State, in point of wealth and population, and but for the great drawback experienced by so great a portion of California, to-wit, the Spanish grants, would rank nearer first, which, however, from their number and the territory included in their boundaries, are only indications of the superior climate and soil of Solano County.

It has no superior and scarcely an equal in the variety and extent of its agricultural resources. For early fruit and vegetables it stands first on the list, always sending into the San Francisco markets the first of every variety known and grown in Northern California. Grain, wool and live stock are the principal exports, though hay, butter, cheese, vegetables, grapes and the fruit crops generally, constitute an immense source of revenue to the county.

Solano cannot boast of any considerable mineral wealth, having long been denominated a "cow county;" still, it is not entirely devoid of precious metals. Gold has been discovered in small quantities in the northern part of the county. The St. John Quicksilver Mine, in the Suscol Hills, has been good-paying property, and now ships about one hundred flasks per month. Coal, in small quantities, has been found in several localities in the southwestern portion of the county, though not in veins of sufficient magnitude to justify an outlay of capital to prospect very extensively. The quarrying of a very good quality of onyx or variegated marble has assumed considerable importance as an industry. The location of this apparently inexhaustible bed of stone is about five miles north of Fairfield, the county seat, where is also located the excellent Tolenas Soda Springs, now under the management of Judge T. M. Swan, and though not very extensively advertised as yet, are undoubtedly destined, at no very distant day, to be a place of great resort, both on account of the magnificent scenery and medical properties possessed by these waters.

The celebrated White Sulphur Springs, about four miles northeast of Vallejo, are very much noted as a Summer resort, and probably none in the State surpass them in the beauty of the surroundings or the medicinal value of their waters.

The Assessor has classified the lands of Solano County into five grades, to wit: The first, of about 50,000 acres, is the very best quality of vegetable and fruit lands, and in point of richness and productiveness, cannot be surpassed in the State, and is rated at from $75 to $100 per acre. The second, comprising the best quality of grain land, of about 250,000 acres, is rated at from $40 to $50 per acre. The third, a lower grade of farming lands, includes the reclaimed swamp and overflowed lands, with a total area of about 200,000 acres; is assessed at from $20 to $30. The fourth grade, comprising the partially reclaimed swamp lands and the up-lands adjacent to the swamp lands, being of an alkaline soil, are poor, constitute about 75,000 acres, and are assessed at from $10 to $15. And the last, or fifth grade, of about 100,000 acres, comprising the swamp and overflowed lands (unreclaimed), and the high mountain ranges, unproductive, as yet, except for pasture, are rated at from $3 to $5 per acre.

TOPOGRAPHY AND CLIMATE.

The greater portion of Solano County is the southwestern extremity of the Valley of the Sacramento, whilst the remainder is equally as favorably located. Sloping gradually from a spur of the Coast Range, forming the western boundary of the county, to the east, toward the Sacramento River and Suisun Bay, and the southwestern portion gently descending from the summits of the Suscol Hills, westerly to San Pablo Bay and the Straits of Carquinez, the drainage is sufficient to prevent stagnation, which, with the ever-varying coast breeze, makes Solano County what she is—the healthiest county in the State.

The average rainfall is a little more than that of San Francisco, and the Winters of shorter duration than in many other parts of the State, render it better adapted for stock-raising, without the extra expense of feeding.

Solano County, as a whole, has never experienced a drouth, and save in the year 1864 has exported her proportion of the average products of California.

From the report of the Assessor to the Surveyor-General are taken the following

STATISTICS.

Land in cultivation	119,350 acres
Wheat	97,000 acres
Barley	18,000 acres
Hay	9,000 acres
Grape vines	3,288 acres
With other products in smaller quantities to make up the aggregate.	
Total number of fruit trees	450,000
Gallons of wine manufactured	145,000
Gallons of brandy manufactured	1,200
Barrels of flour manufactured	350,000
Number of horses and mules	7,000
Number of horned cattle	10,000
Number of sheep	71,000
Number of hogs	11,179
Seventy-three miles of railroad valued at	$345,122
Assessed valuation of all real estate	$6,000,000
Assessed valuation of all improvements	$1,369,439
Assessed valuation of personal property	$1,624,256.

Rate of taxation is $1 90 on each $100 valuation of property in the county.

Amount necessary to be raised, $165,652, of which $54,500 goes to the State, $43,600 for the expenses of the county, $23,540 for school purposes, $5,230 for hospital and indigent funds, $7,410 for interest on railroad bonds, $8,740 for county loan fund, $872 for interest on court house improvement fund, and $21,800 for road purposes.

The total value of all county property is about $150,000.

From the quarterly report of the County Treasurer, for the quarter ending July 31st, 1879, the following interesting data are taken:

Amount on hand in the different funds.....$ 32,527 60

OUTSTANDING INDEBTEDNESS.

General Fund	$ 46,500
Road Fund (bonded)	31,500
Railroad Bonds	112,000
Court House Improvement Bonds	15,000
Total	205,000
Off amounts applicable	3,500
Total outstanding indebtedness	201,500

A reduction of $31,000 in one year.

There are forty-eight school districts in the county and 4,804 school children, or an average of 100 to each district, and by the State and county apportionment there comes into the school fund over $53,000 annually, or about $12 per child. Teachers receive an average monthly salary of $65, and the grade of these teachers, if not their salaries, is a credit.

And, notwithstanding the many colleges, seminaries and high schools in the different parts of the county, which are creditably maintained independent of public money, the public schools are well attended, and schools are kept in each district on a fair average each year.

Politically, Solano County is sub-divided into twelve townships. First and foremost of these, both on account of its near proximity to the great metropolis of California and its greater wealth and population, is

VALLEJO TOWNSHIP,

Named after General M. G. Vallejo, who represented the Sonoma District, of which Solano County was then a part, in the first General Assembly of the State, and to whom also belongs the honor of selecting the spot on which the city, which also bears his name, is now located. The entire territory of Vallejo township, together with Benicia and the greater portion of Green Valley townships was included in the Suscol grant, ceded to the General by the Mexican Government more than forty years ago. This township lies in the extreme southwest corner of the county, and though far from the largest in the county in area, contains about two-fifths of the inhabitants, and an assessed valuation of about one-third of the whole county.

It is not, strictly speaking, an agricultural township, though many and valuable farms are encompassed within its bounds, and on account of the moisture bearing breezes and gentle fogs from the ocean, the Suscol Hills are never-failing in small grain, and to these is this section also greatly indebted for its superior advantage of climate and health.

It is better adapted, naturally, for grazing purposes, and to this chiefly and profitably utilized.

Many natural advantages conspire to make this section, more than it has yet, or probably will, for many years, attain, besides which, great results combine to make the city of Vallejo a place of almost unlimited possibilities.

For ten years it has been the southern terminus of the California Pacific Railroad, and it is probably speaking within bounds to say that the natural commercial advantages attached to the city of Vallejo are unexcelled by those of any city on the Pacific Coast.

Here, too, is the Mare Island Navy Yard, established by the Government in 1854, and which soon grew to be inferior to but few, if any, in the world, in point of facilities and superior workmanship. The position of the island is admirably adapted for a naval station, the Straits separating it from the mainland being a quarter of a mile in width, with a depth of five fathoms. The Navy Yard is now the main support to the City of Vallejo, employing from 500 to 1,200 men, all of whom draw more or less from its supplies.

The third session of the Legislature of California was held here, and the fourth begun, but for causes best known to its members was during the first few days of this sitting removed to Benicia.

In this township are the White Sulphur Springs and the St. John Quicksilver Mine before mentioned.

Good improvements exist, throughout this township, bespeaking for its inhabitants a laudable thrift.

Next in importance and anticipation is

BENICIA TOWNSHIP,

Lying directly east of Vallejo, with a good water frontage for more than half its circumference.

The City of Benicia, one of the oldest in the State, is beautifully located upon the Straits of Carquinez and in view of the Golden Gate. It stands a sentinel at the very threshhold of the waters of Northern California, upon which annually float millions of commerce.

This township has a varied product, though principally agricultural. Dairy products, live stock, leather and cement are exported, and go far to build up commerce and wealth. The well-improved farms are praiseworthy, and the city of Benicia exhibits care and preservation, notwithstanding its age, being laid out in 1847 by Dr. Semple, Chairman of the Convention which framed our old Constitution, and named by him after the wife of General Vallejo. Here are located no less than five well-conducted and well-patronized institutions of learning, besides a full public school. In 1853 Benicia was the State Capitol, and for eight years the county seat of Solano County. Real estate commands a good price, and is improving. A large plow factory has recently been opened here, employing many workmen at good wages. The California Pacific Railroad, under the name of the Northern Railway Company, has switched off from the old road at Suisun, and by way of Benicia trains of passengers and freight cross the Straits of Carquinez on a ferry, and thence to Oakland.

GREEN VALLEY TOWNSHIP,

Lying north of Benicia, is eleven miles in length, north and south, and averages five miles in width.

Its products are various, consisting of grain, fruit, vegetables, wine, wool and live stock. Wineries are operated profitably and some brandy distilled. Cordelia, a small town on the railroad, is a very thriving little place, and maintains a good share of the export and import trade of the county. In this township are several quarries of very excellent paving stone, now extensively used in paving the streets of San Francisco.

The largest township in area in the county, and directly east of Grass Valley, is

SUISUN TOWNSHIP,

Some fifteen miles north and south, by ten east and west, bordering on Suisun Bay. The southern half is swamp and overflowed lands, comprising some very fine islands, and such as are reclaimed are very productive, but the greater portion of these lands is yet unreclaimed, and only fit for Summer pasture. Suisun Valley constitutes the greater part of the northern half of this township, and is productive in grain, grass and fruit. The many well-improved farms and good substantial farm houses bespeak a thrift and prosperity excelled by few localities in the State. Fairfield, the county seat, composed principally of dwellings, is well laid out, and contains a population of about 800. About half a mile south of Fairfield, and separated from it by a narrow strip of swamp land, is Suisun City, built upon an oasis or elevation in the tules, at the head of a navigable slough of sufficient size to accommodate vessels of a hundred tons burden, and by which is shipped the entire grain crop and a considerable portion of the entire products. Between Fairfield and Suisun the California Pacific Railroad passes, and here the Benicia branch, before mentioned, switches off.

According to the health statistics of the State Suisun bears off the premium. Notwithstanding the County Infirmary is located near by, where an average of thirty unfortunate inmates are provided with a home, and liberally cared for at the county's expense.

The county's buildings are good, well planned, and in a good state of preservation, considering the time they have been erected. A new Hall of Records has been lately erected at an expense of $15,000.

Good public schools are maintained in both Suisun and Fairfield, almost the entire year.

Just east of Suisun township is

DENVERTON TOWNSHIP,

Containing about sixty-five square miles of territory, the greater portion of which is good farming land, yielding an average crop once in two years by Summer fallowing. Large quantities of dairy

products, besides live stock and wool, add to the exports. Almost the entire township is under good fence, and some fine residences are seen.

Denverton, near the west line of the township, a place of some dozen houses, is the Post Office and shipping point, being at the head of a navigable slough, emptying into Suisun Bay. Directly south of Denverton Township is

MONTEZUMA TOWNSHIP,

With an area of 40 square miles, and extending south to the Sacramento River and Suisun Bay. Three-fourths of this township is excellent farming lands of rolling hills, producing this year the best grain in the county. The other fourth is swamp and overflowed lands, as yet only used for Summer pastures, but if reclaimed undoubtedly would yield equally as well, and for some crops better than the high lands. Collinsville, at the mouth of the Sacramento River, and Bird's Landing, four miles north, are both lively towns. At and in the vicinity of the former are several fish canneries, all doing a good business in the fishing season. This, with the extensive traffic carried on from the inland, make both these towns assume an air of places of many times their size. Bounded west by the two townships last mentioned and east by the Sacramento River is

RIO VISTA TOWNSHIP,

Containing perhaps 100 square miles of territory, the southern half being a portion of the Montezuma Hills, about one-half of which in this township is owned by Dr. H. H. Toland, of San Francisco, and others who are purchasers under the Los Ulpinos or Bidwell grant. North of these hills is swamp land, portions of which have been successfully reclaimed, and, except in extremely wet seasons, produce abundant harvests. The town of Rio Vista is on the Sacramento River, fourteen miles above Collinsville, and has a good trade from the islands across the river, and is the Post Office and shipping point for a large area of territory back of it.

The amount and kind of improvements constantly going on are indicative of prosperity, and speak well for its enterprise. A good seminary, under the management of the Catholic Church, is well patronized, as also are the public schools. The exports from here are principally grain and hay.

North of Rio Vista and Denverton Townships is

MAINE PRAIRIE TOWNSHIP,

Containing about seventy square miles, and like Rio Vista Township, is about one-half swamp land, yet unreclaimed, and only fit for Summer pasture. There are some good farms in the northwestern part, but most of the township is better adapted to grazing. In the centre of the township is the town of Maine Prairie, at the head of a navigable slough, and a good shipping trade is carried on here, but far short of what was done prior to the completion of the California Pacific Railroad through the county.

In the northeast corner of the county, extending from Maine Prairie Township north ten miles to Putah Creek, is

TREMONT TOWNSHIP,

Containing an area of about 50 square miles. The northern portion is excellent farming land, and is well improved, with good houses, fine orchards and fields, well fenced; but the southern portion is better adapted for sheep ranges and dairying. There is no town or post office in this township, adjacent towns being near enough to accommodate the inhabitants.

Lying directly west of Tremont is

SILVEYVILLE TOWNSHIP,

Irregular in shape, and containing about one hundred square miles of excellent farming land. Here has sprung up, in the last twenty years, a thickly settled and prosperous community. Every acre of this township may be considered good farming land, and the fine improvements which everywhere greet the eye, are indicative of rich soil, well tilled, resulting in bountiful harvests, Summer fallowing is the universal practice.

DIXON,

On the railroad, which diagonally crosses the southeastern corner of the township, is a very thriving town, regularly laid out and well built, with about six hundred inhabitants. It is incorporated, kept in a condition to command attention, and is the shipping point, by rail, for a large scope of country. Lying west of Silveyville, and extending west to the summit-ridge of the Blue Mountains, the west line of the county is

VACAVILL TOWNSHIP,

With an area of about eighty-five square miles, one-third of which is mountainous and unproductive. In this township are raised the earliest fruit and vegetables sent to the San Francisco markets, and the rich soil of the valleys has gained a reputation for grain-growing. Fine, well improved farms are numerous, and the extensive trade, carried on in the little town of Vacaville, a place of some 500 inhabitants, on the Vaca Valley and Clear Lake Railroad, and four miles from its junction with the California Pacific, is certainly very encouraging, and continues to improve.

The California College, under the management of the Baptist Church, is located at Vacaville, and is well attended and conducted.

The Vaca Valley and Clear Lake Railroad, extending almost the entire length of the township, though perhaps not so remunerative to its owners as some others in the State, has certainly done much to enhance the value of real estate, and bring about some extensive improvements along its line. East of Vacaville and south of Silveyville is

ELMIRA TOWNSHIP,

Having an area of 42 square miles, and strictly speaking is an agricultural township, though its exports are various. The California Pacific Railroad passes diagonally through this township, and Elmira, at the junction of the Vaca Valley branch, is a depot of considerable commercial importance. Almost the entire area of this township is very productive and well improved, and the inhabitants seem to be prosperous and happy.

CONCLUSION.

The inhabitants of Solano County claim that it has no superior in the State, in climate, soil and commercial advantages. The superiority of climate is based upon carefully culled statistics. Never-failing crops and the best health record in the State, have won for her a wide reputation. Her products of wheat, barley, hay, butter, cheese, live stock, poultry, fruit, wine, wool, quicksilver and variegated marble, are conclusive arguments to prove the productiveness of its soil, mines and quarries, and with sixty miles of as fine a water front as can be found, not only will prevent monopoly of transportation, but so cheapen it that her competition in market is too plain to demand argument.

SANTA BARBARA COUNTY.

By M. C. F. WOOD.

The County of Santa Barbara lies between San Luis Obispo and Ventura Counties. It is bounded on the west by the Pacific Ocean, and on the south by the Santa Barbara Channel, with its outlying islands. Below Point Concepcion the coast line bends sharply to the eastward, and parallel with this line the Santa Ynez range of mountains, from 3,000 to 4,000 feet in height traverses the county from east to west. Beyond this range, running in a northwesterly direction, lie the San Rafael Mountains. A large portion of the northeastern quarter of the county is marked upon the official map as unsurveyed land. This is a rugged mountainous region, reckoned worthless except for the mineral wealth which is reported to be concealed there. Yet there are small valleys running up into these mountains, which are pleasant and fertile, and some few adventurous settlers occupy these places. Between the Santa Ynez Mountains and the sea lies the celebrated Valley of Santa Barbara, with its fertile soil and unparalleled climate. Between the Santa Ynez and the San Rafael ranges opens the lovely valley of the Santa Ynez, widening into a broad extent of agricultural land, and watered by the Santa Ynez River, which empties into the Pacific Ocean. The Santa Maria River, on the northern limits of the county, also drains a rich extent of farming lands.

THE ISLANDS.

Three of the channel islands are assessed in Santa Barbara County. San Miguel, the most western of the group, is 7½ miles in length, with an average breadth of 2½ miles, and is assessed to the Pacific Wool-growing Company. Santa Rosa, assessed to the More Brothers, contains 53,000 acres, and attains a height of 1,172 feet. Santa Cruz, lying almost opposite the city of Santa Barbara, at a distance of about twenty-five miles, is 1,700 feet in height, and contains 52,760 acres, assessed to the Santa Cruz Island Company. These islands are all stocked with sheep. Several small schooners ply between Santa Barbara and the islands.

CLIMATE.

So much has been written about the climate of Santa Barbara that further description seems useless; but a few statistics from the best authorities may be of interest. The following table gives the mean temperature of the air and also of the sea water:

	Jan.	Feb.	Mar.	April	May.	June	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year
Air	53	55	56	59	63	67	68	68	67	63	59	55	61½
Water	60	61	61	61	61	62	64	65	66	63	61	60	62

Thus the mean temperature of the air is 54½ in Winter, 59½ in Spring, 67¾ in Summer, and 63 in Autumn, the difference between Summer and Winter being only 13¼ degrees. Three causes combine to produce this equitable temperature. The mountain ranges to the north obstruct the free passage of both the hot and the cold winds which prevail in the interior, while the mountainous islands in front arrest the rain-bearing winds of Winter, and the warm ocean current which sweeps westward along the southern border of the county still further modifies the climate. The rainfall averages about 16 inches. The dryest year in the last twelve has five inches, and the greatest amount of rainfall in any one year during this period was thirty-one inches. The watershed of the mountains add to the supply, so that for ordinary crops irrigation is not needed. These observations apply to the belt of land between the Santa Ynez Mountains and the sea, a narrow strip about forty miles long, from one to five miles wide, and containing about 80,000 acres. Above Point Concepcion the air is moister and cooler, while that of the interior valleys is remarkably dry and pure. The county is noted for its freedom from contagious diseases, as well as for its general healthfulness.

AGRICULTURE.

A large portion of the county is well adapted to farming, but has been hitherto held by the large land-owners and wholly devoted to sheep-raising. Latterly, some of the great ranches have been broken up, notably the Lompoc, and, where a few years ago no sign of occupation could be seen for miles, except an occasional herder's camp, one sees fields of grain, cottages, school houses, and at every hamlet is asked to join the Good Templars. Many of the large land-owners are willing to divide and sell their ranches. Mr. Cooper, of the Santa Ynez Valley, has lately offered the Santa Rosa Rancho at two dollars per acre. The College Rancho, in the same valley, is about to be divided at the instance of Archbishop Alemany, who wishes to rent, in small tracts, to settlers. Both these ranchos have large portions adapted to wheat grazing. Prices of land in the county vary greatly, ranging from $150 per acre for the finest improved land, down through good farming land at $10 to $25, grazing lands at $5 to $10, to the impracticable mountains which have no market value. The semi-tropical belt, which stretches from the Gaviota Pass to Point Rincon, is particularly adapted to fruit and nut culture. Apples and peaches are productive and of good quality; apricots, nectarines, pears, quinces and figs come to perfection; cherries are not a success; the same may be said of some kinds of plums, while others bear well. Of evergreen fruit trees, the orange, lemon, lime, loquat, olive and guava, all do well. Cherimoyas and bananas of good quality ripen. The Litchi, from China, has been introduced, but too recently to produce fruit. Strawberries ripen every month in the year. Tomato vines grow and bear fruit for several years in succession. Almonds have not proved to be as successful as was anticipated a few years ago, although they have borne well this year. The English walnut, however, has outdone all that was ever claimed for it. Russel Heath, of Carpinteria, is the pioneer in this business. He claims to have raised more walnuts than the whole county of Los Angeles, and is in fact the largest walnut-grower in the United States. He, together with Mr. Ellwood Cooper and Colonel Hollister, have just shipped to Philadelphia a carload of olive oil, almonds and walnuts. The oil, which is manufactured by Mr. Cooper, is of extra quality, cold-pressed and unadulterated.

A PASTORAL PRINCE.

A description of the county would be incomplete without a mention of the county magnate, Col. W. W. Hollister, who has large interests in this and other counties. His home place is a little garden spot of 3,600 acres, lying about twelve miles west of the city of Santa Barbara, and he rules over his pastoral dominions according to the advice of Chesterfield, "*Suaviter in modo—fortiter in re.*" The firm of Hollister & Dibblee, in 1874, owned several ranchos, aggregating 140,000 acres, in this county alone, and having an ocean frontage of more than twenty miles. The firm has recently been dissolved, and a division made of the property, much of which will doubtless come into the market as soon as there is any demand for it.

MEANS OF ACCESS.

The shortest way of reaching Santa Barbara from San Francisco is by the coast steamers—distance, 300 miles; time, about 30 hours; fare, $10. Those who dislike a sea voyage can go by rail to Newhall, thence through Ventura by stage; time, 20 hours by rail and 15 by stage; fare, $25. Or one may go by rail to Soledad, and thence by stage through the intervening coast counties. A company has been organized to build a railroad from Santa Barbara to Newhall Station, connecting there with the Southern Pacific. The Directors—W. W. Hollister, D. W. Thompson, S. B. Brinkerhoff, William Sturges and H. Sturges—in 1869, issued an address to the people of Ventura and Santa Barbara, soliciting aid for the enterprise, Colonel Hollister heading the subscription list with a gift of $20,000. Many persons have been deterred from settling in the county on account of its lack of easy communication with the outside world. There is no lack of facilities for communication by sea, there being eight wharves already in the county, namely: Point Sal, for Guadalupe and the Santa Maria Valley; Point Purisima, for Lompoc; Gaviota, for the Santa Ynez Valley, San Julian, etc.; More's Landing, for La Patera and vicinity; Stearns's wharf at Santa Barbara, and Smith's wharf at Carpinteria. There are also wharves at Santa Rosa and Santa Cruz Islands.

STATISTICS.

According to the census of 1880 the population of the county was 9,522, and of the town of Santa Barbara 3469. Since then the city has claimed a population of between 5,000 and 6,000, and a similar increase has taken place in the county. The report of 1880 included the present county of Ventura, which began the year 1873 as a separate county. It is estimated that the present population of the county is over 10,000.

RAPID GROWTH.

Within the last two or three years a marked improvement has been manifested, and the total valuation of property, which in 1878 was given at $3,725,389, in 1882 is reported at $5,337,638, of which $4,395,076 is real estate and $942,562 personal property, and as the advantages of this section become better known still greater increase is certain.

ACREAGE, ETC.

The Assessor's report gives the number of acres enclosed in 1878 at 60,180; acres cultivated, 60,492. There were 18,763 acres in wheat, 26,221 in barley, 75 in oats, 82 in rye, 5,647 in corn, 145 in peas, 4,820 in beans, 621 in potatoes, 85 in sweet potatoes, 2,810 in hay, and 260 in flax. There were 48,400 pounds of butter, 36,550 pounds of cheese, 264,670 pounds of wool, and 9,000 pounds of honey. Among bearing fruit trees the Assessor reports 468 lemon, 204 orange, 4,555 olive, 200 banana, 400 loquat, 620 lime, and 80 guava, trees. There were 260 acres in grape vines, and two breweries, reporting 7,000 gallons of beer. In 1879, 855,000 acres of land are assessed, at an average price of $3 17 7-10ths per acre. The Assessor's report for this year gives 3,720 horses, 493 colts, 11,894 cattle, 240 goats, 164,775 sheep, 8 jacks and jennies, 854 mules, 32 oxen, 12,883 hogs, 2,851 beehives, and 1,454 poultry.

SCHOOLS.

The county is divided into thirty school districts. The total number of children between five and seventeen years of age is 2,976. The last School Superintendent's report gives the number in each district as follows: Agricola, 50; Artesia, 57; Carpinteria, 93; Cathedral Oaks, 54; Bells, 34; Dos Pueblos, 42; Guadalupe, 103; Hope, 51; Jonata, 76; Laguna, 50; La Graciosa, 42; La Patera, 53; Las Cruces, 53; Los Alamos, 28; Lompoc, 187; Maple, 53; Montecito, 137; Mission, 112; Oak Vale, 26; Ocean, 53; Ocean View, 15; Pine Grove, 63; Pleasant Valley, 73; Purisima, 19; Rafaela, 72; Rincon, 61; Santa Barbara, 1,151; Santa Maria, 80; Santa Rita, 52; and Suey, 23. During the past year 1,733 children have been in attendance at the public schools, 311 at private schools, and 927 have attended no school whatever. The number of native born children in the county is 3,219, of native born with one foreign parent 537, of native born with both parents foreign 331, and of foreign born children 48. There are 11 negro and 20 Indian children of school age. Forty-three teachers are employed in the public schools, receiving from $60 to $65 per month.

TOWNS.

Santa Barbara, the county seat, is an incorporated city of about 5,000 inhabitants, governed by a Mayor and five Councilmen. The city lies within a space of three miles square, rising gradually from the sea, and attaining an elevation of 300 feet in a distance of one mile and a half. This slope gives ample facilities for drainage. During the recent business depression, the Arlington, a magnificent structure, has been the only hotel open to the public, although there are numerous private boarding houses in all parts of the town; also, several lodging houses and restaurants. The favorite Morris House is just being reopened under the supervision of the same energetic and popular landlord, who gave it its name. The city contains eight churches, of which two are Catholic, two Episcopalian, and one each of the Presbyterian, Congregational, Methodist and Baptist denominations. The Spiritualists hold regular meetings, and there is also a Unitarian congregation. There are several Lodges of Masons, Odd Fellows, Knights of Pythias, A. O. U. Workmen and Good Templars. The Odd Fellows have a fine library, which is open to the public. There are two banks, a money-order Post Office, telegraph and express offices, the finest theatre south of San Francisco, also several halls used for assemblies. A line of street cars, run from the wharf to the Arlington. State street is illuminated with gas. Water is supplied by the Mission Water Company. There is a planing-mill, steam flour-mill, soap factory, brewery, and commercial houses of all kinds. Among the public buildings are, the Court House, City Hall and two public school buildings, all handsomely built of brick. The Hospital Farm, just outside the city, was purchased at a cost of $9,000. The Fire Department is composed of one engine and one hook and ladder company. There are two newspapers, the daily *Press*, published by H. G. Otis, and the *Independent*, weekly, by Warren Chase & Co. The principal private schools are the Santa Barbara College, for both sexes; the Franciscan College, for boys, and St. Vincent's Academy, for girls. The Union Club is an association of gentlemen. There is also a Woman's Club and a society of Natural History. The city is literally ever blooming. Her gardens contain an immense variety of the flowers of every clime. One garden, that of Dr. Dimmick, on De La Viña street, has growing in the open air throughout the year, in addition to the more common plants, the following: 13 varieties of the palm, natives of India, China, Australia, South America and Africa; 75 choicest varieties of roses; 10 of magnolias; 42 of ferns, one a large tree fern from Australia; 30 of cactus, including the night blooming cereus; 13 of the aloe family from Africa; 4 kinds of crinums, one having a bulb 28 inches in circumference; 2 of pancratiums with their curious cups; 4 of the stapelias from the Cape of Good Hope; four tropical jasmines, the cedar of Lebanon, the Egyptian paper plant, the honey tree of South Africa, the camphor tree of Japan, the Queensland lily, and the magnificent bird-of-paradise flower. It is impossible within the limits of this article even to outline the treasures of a Santa Barbara garden. Almost anything will grow, and with a prodigal luxuriance which astonishes the new-comer who has only seen our common plants pining in Eastern greenhouses.

El Montecito is properly a suburb of Santa Bar-

bara. It is a charming valley about four miles to the eastward, and contains many handsome residences. The valley lies close up to the foothills and opens to the southwest on the sea. The farms are all small, and nearly all in a high state of cultivation. In some places the land is heavily timbered. In this valley the banana, which was tried only a few years ago by Colonel Dinsmore as an experiment, has proved a grand success. Strawberries do remarkably well, as do the principal semi-tropical fruits. Land is held at $30 to $100 per acre, unimproved. Water is abundant throughout the valley.

Carpenteria lies in one of the most fertile valleys in California. It is about fifteen miles from Santa Barbara. The valley is sheltered by mountains on three sides and opens to the sea. It is devoted to farming, the farms varying from 15 to 500 acres. Corn, wheat, barley, sorghum and beets grow luxuriantly. The raising of Lima beans is a specialty, while fruits of all kinds and almost of all zones attain an abnormal perfection. The village proper has a Post Office, two churches, Presbyterian and Baptist, a commodious school house, blacksmith shop, etc. A new industry has just been inaugurated here, namely, the cultivation of flowers for distillation. Land has been bought by a company who will plant roses, violets, jasmines, tuberoses and orange flowers. The company volunteer to furnish cuttings and seeds of the plants required to any person in the surrounding country who wishes to enter the business, and they contract to buy all the blossoms thus produced, to manufacture into perfumery. This enterprise must succeed, as the best of land, from Point Concepcion to Point Rincon seems peculiarly grateful to all the flowering tribes above mentioned.

Goleta is a small village eight miles to the northwest of Santa Barbara, and claims about 200 inhabitants. It has a Post Office and daily mail, two churches, Methodist and Presbyterian, a school house, store, blacksmith shop, and a lodge of Good Templars. The wharf, at More's Landing, is at a little distance. On the beach near the wharf is a rich deposit of asphaltum. Land in the vicinity is worth from $75 to $130 per acre, according to improvements and location.

Lompoc is about sixty-two miles from Santa Barbara, above Point Conception. The Lompoc Valley Land Company, incorporated August 22, 1874, bought the ranchos Lompoc and Mission Vieja de la Purisima, together consisting of 45,-65.4 49 acres, and established the colony of Lompoc the same Fall. The town of Lompoc was laid out so generously that it is still somewhat scattered in appearance. It is a thriving place, and supported by the farming interest. It contains two good hotels, a steam flour mill, a pork packing establishment, three town halls, a drug store, two barber shops, three blacksmith shops, etc. It has a daily mail, express and telegraph, three doctors, a dentist, Lodges of Odd Fellows and Good Templars, no saloons and one newspaper, the Lompoc *Record*. There is a Catholic church, and one, belonging to the Methodists, in process of erection. The Campbellite Baptists hold regular services and other denominations occasional ones. The schoolhouse is a fine and commodious building. Water is soon to be brought into town from the San Miguelito Creek.

Los Alamos is a small settlement on the rancho of the same name. It has a daily mail, a large store, two hotels, two blacksmith shops, and a fine school house. There is also a Lodge of Good Templars. The Los Alamos Valley is of extraordinary fertility, and is mostly rented to farmers in small tracts.

Guadalupe is about ninety miles north of Santa Barbara, and within a few miles of the boundary line of San Luis Obispo County. It is about nine miles from Point Sal, its shipping point. The land about the town is rich and water abundant. Farms in the vicinity varying in size from twenty to five hundred acres, and are worth from $10 to $25 per acre, unimproved. The principal crops raised are wheat, barley, potatoes, hay, squashes, corn and beans. The town has a daily mail, express and telegraph, two good hotels, a public hall, three large stores, a calaboose (branch jail) a school house, brewery, jewelry shop, photograph gallery, blacksmith shop, a drug store, one newspaper (the Guadalupe *Telegraph*) and a Catholic Church. There are Lodges of Masons, Odd Fellows and Good Templars. It is a peaceable community, and has but one lawyer. The population is estimated at about 400. The country around the town is thickly settled.

Central City is a scattered little town, situated about 10½ miles east of Guadalupe, and is chiefly supported by farmers. It has a daily mail, hotel, town hall, church, furniture store, two other stores, two blacksmith shops, a Lodge of Good Templars, and two school houses a little out of town. It has a pleasant climate, and the surrounding scenery is very attractive.

LIGHTHOUSES.

There are two lighthouses in the county. The one at Point Concepcion is 250 feet above the water. It has a Fresnal revolving light, showing a white flash every half minute. A fog-whistle is sounded in thick weather every fifty-two seconds, and a fog-bell, weighing 3,136 pounds, is also used during bad weather, sounding every thirteen and a-half seconds. A small lighthouse upon the mesa just above Santa Barbara has a fixed white light of the third class.

MISCELLANEOUS.

There is a valuable quicksilver mine in the Upper Santa Ynez Valley, distant by rail over the mountains, about fifteen miles from Santa Barbara. An attempt was made to work the mine several years ago, but owing to litigation and the low price of quicksilver the works were abandoned.

There are known to be large quantities of petroleum in various places, but no paying well has yet been developed.

Game is plenty in all the mountain regions. The Upper Santa Ynez is a hunter's paradise, abounding in deer, quail and other game, not to mention the famous grizzly.

The bee business is assuming every year larger proportions. Among the mountains wild honey is plentiful.

The abalone trade is an important item. Fish of various kinds are caught in the channel, and clams are found in several places all along shore.

An industry peculiar to this region is the curing of pampas plumes. These are shipped East by thousands.

There are many sulphur springs in the county, hot and cold. The best known are those of the Montecito. The waters vary in temperature from 60 to 130 degrees, and are much resorted to for relief from rheumatic and other diseases. At these springs there is an excellent hotel.

To sum up the chief attractions of Santa Barbara County, she offers magnificence of scenery, a fertile soil, and the most delightful climate upon the face of the earth.

SAN BENITO COUNTY.

By L. T. BALDWIN.

The county of San Benito, created by an Act of the Legislature in March, 1874, comprises all of that territory, formerly belonging to the county of Monterey, north of the Gabilan range of mountains. It is bounded on the north by Santa Clara and Santa Cruz counties, on the east by Merced and Fresno—the boundary line being the summit of Mount Diablo Range—and on the south and west by Monterey County. It is eighty-one miles in length—lying in a direction northwest by southeast—averages about ten miles in width, and embraces an area of about 810 square miles. The

LAND

May properly be divided into four classes, as follows: First, about 25,000 acres of rich garden land. The soil is of a black sandy loam, and will produce, in abundance, any kind of vegetation. Upon this fertile land are raised the fine vegetables which supply our market. Second, about 34,300 acres of first-class grain land, contained principally in what is known as San Benito Valley (the extreme southern portion of Santa Clara Valley). The soil is a black sandy loam or adobe, with a blue or sandy subsoil, and holds moisture well. It is principally from this land that the large amount of grain annually shipped from this county is raised. Third, about 46,000 acres of what is termed second-class grain land, situated in the foothills, and composed about equally of adobe and sandy soil. This land is not so strong as the valley land, but produces quite fairly, and in dry seasons is more sure of good crops than the richer bottom land. From this land is cut very fine hay, noted in San Francisco markets as "Hollister hay." Fourth, in addition to 105,300 acres capable of producing vegetables and grain, there is a large amount of hill land which makes very fine pasture. More or less of it is connected with many of the ranches in the valley.

The largest body of agricultural land comprises the San Benito and San Juan Valleys, which include all the land from the northern boundary line of the county to Tres Pinos on the south, a distance of 20 miles, and bounded on the east by the base of Mt. Diablo range, and by the base of the Gabilan Mountains on the west, with an average width of nine miles. This tract is watered by the San Benito and Tres Pinos Rivers, and covering an area of 62 square miles, contains about 39,000 arable acres, almost the entire valley being cultivated in grain. The soil partakes of the same characteristics as the land of Santa Clara Valley, except that it is many years younger; hence stronger and more fertile. Adjoining this on the last and next in size, is the Santa Ana Valley, with an area of 15 square miles, containing about 10,000 acres, entirely given up to the production of grain.

Beside these there are numerous other fertile valleys in the southern portions of the county, the principal ones being the valley of the San Benito and Tres Pinos Rivers, Peach Tree, Bitter Water, Dry Lake, Indian, Priest, Cholame and the valleys of the Estrello and Salinas Rivers. In all of these valleys there is more or less good agricultural and grain land susceptible of cultivation to advantage, but much the larger portion is better adapted to stock raising.

Lands may be generally classed and rated as follows: Vegetable land, $60 to $100 per acre, although some choice tracts in the immediate vicinity of Hollister are held as high as $125 to $200 per acre; No. 1 valley land, $40 to $60; second class valley, $25 to $40; rolling land, $15 to $20; hill land, susceptible to cultivation, $5 to $15; pasture or mountain land, $2 50 to $5 per acre.

By referring to the County Assessors books, we find the value of taxable land to be something over $4,000,000, with improvements valued at $563,200; personal property, $531,800. The

PRODUCTS

Include cereals of all kinds, hay, tobacco, flax, potatoes, with fruits and vegetables of every variety, wines and liquors, cattle, sheep and hogs, with wool, hides and tallow, dairying and poultry raising.

Wheat yields as well in this county, as in any section of the State, and flour made from it has no superior in the world. The average yield for a common season, on first-class valley land, is from thirty to forty bushels per acre; second-class valley, twenty to thirty; rolling land, from fifteen to twenty. Some seasons as high as seventy bushels per acre have been harvested in some localities, and sixty bushels is no uncommon yield. There are about 46,300 acres sown to wheat yearly with an average yield of 460,000 bushels.

Barley produces still better than wheat, first-class valley land yielding from 50 to 60 bushels: second-class, 40 to 50, and hill land, 25 to 40. About 12,000 acres are cultivated yearly with barley.

The hay raised in the county, a large quantity of which is exported annually, is of the very best quality, and always brings the highest ruling prices in the San Francisco market. In a favorable season the yield is from 1 to 2½ tons per acre. About 3,500 acres are devoted to the raising of hay, with an aggregate production of 55,000 tons.

The culture of flax, previous to the past two years, has been more of an experiment than a business in this county. Enough, however, has been demonstrated to prove that it can be produced with profit, and farmers are beginning to direct considerable attention to its cultivation.

INDUSTRIES.

Dairying proves quite profitable, and is carried on to a considerable extent, several large dairies being in operation at San Felipe, Paicines, and in the neighborhood of San Juan, milking several hundred cows, and giving employment to a great number of men and boys.

This county is peculiarly favorable to the raising of poultry of all kinds, hence large shipments of chickens, turkeys, geese, ducks and eggs, are daily made to San Francisco. This is found to be a very remunerative branch of industry. In addition to the dealers in common poultry, this county can boast of several yards of fancy fowls, in which are kept every species of blooded poultry.

There is no section of California better watered for stock purposes than this county. The San Benito side of the Gabilan range is watered by Bird and Thompson creeks — both fine trout streams—and with numerous springs along the mountain sides; while the San Benito River runs at its base, near Hollister, for seventy-five miles south, almost to the southern boundary of the county. On the San Benito side of the Mount Diablo range are the Pacheco, Los Picachos, Santa Ana and other creeks, with the Tres Pinos River at its foot, and any number of fine springs of the purest and best quality of water.

Sheep, cattle and hog-raising is here a very important and lucrative business, the larger portion of the southern part of the county being entirely devoted to this branch of industry. Large quantities of live stock, with wool, hides, pelts and tallow are shipped from here annually.

FRUIT RAISING.

In general, it may be said that fruit raising is in its infancy in this county. Experiments have

established, however, the complete adaptability of the soil and climate to the growth and maturity of nearly every species of fruit, as there is no class of fruit that our people have attempted to cultivate that has not been perfectly formed, and that will not compare favorably with the choice fruit of the State. The many young orchards of this county are yielding a profitable return for the money and labor expended in their cultivation, and there is no doubt that in the near future fruits and berries will be produced here in abundance. Some of the oldest almond trees in the State are to be found here in this county. There are several trees of the different varieties on the old Pacheco place, seven miles from Hollister, that were planted over forty years ago, and still bear an abundance of the richest kind of nuts every season. At the almond orchard four miles east from Hollister were planted four years ago some 40,000 trees, nearly all of which have grown finely, and are bearing an excellent quality of nuts. At the same time 20,000 apricot, plum, quince and nectarine trees were set out, which are also producing good fruit. The land of this county is peculiarly adapted to the growth of the English walnut. The black walnut, chestnut, pecan, filbert and other varieties also seem to grow well wherever tried.

MINERALS.

It is now pretty well settled that this county contains pretty good deposits of quicksilver and coal. Already several localities are producing the former in paying quantities. Prominent among the quicksilver districts are the Cerro Bonito mines, about forty miles southeast of Hollister, and the Stayton, Comstock and Mariposa mines, located twelve miles to the northeast. Coal has been found in different parts of the county, but as yet very little work has been done towards developing it. Experienced miners, however, from the samples and indications, are led to believe that it exists in large bodies.

GAME.

Hare, rabbit, grouse, quail, geese, ducks, snipe, and every variety of small game are plentiful, while California lions, bear, deer, etc., are found in abundance in the mountain range.

WATER.

Water is plentiful, and can be obtained in any portion of the county, at a depth of from 10 to 100 feet. In some localities, notably of San Felipe, seven miles to the north of Hollister, artesian water is reached in abundance by boring to a depth of from 60 to 150 feet. There are already over 70 flowing wells in that vicinity.

The county is supplied with two good flouring mills—one run by water power on the San Benito River, twenty miles south of Hollister, and one steam mill in Hollister. The Hollister mill, owned by Shackleford & Hinds, is one of the finest in the State. It was built in 1872, by J. M. Browne, and is in every respect a substantial and model structure. It turns out at the rate of 150 barrels per day. The flour manufactured at this mill is of the most excellent quality, and has more than a local reputation, large quantities being shipped every season, per special order, direct to Europe.

Our market facilities are of a most excellent character. Besides the local market, which affords good prices for the quantity consumed, the town of Hollister, centrally located in the valley on the line of the Southern Pacific Railroad, is within convenient and easy distance from San Jose and San Francisco. Freight hence reaches these points in a few hours. Freight rates are $3 50 per ton between Hollister and the metropolis

The Theophilo vineyard, situated about eight miles south of Hollister, in the foothills of the Gabilan Mountains, contains over 40,000 bearing vines, which produce large quantities of the most delicious varieties of the grape. Mr. Vache, the proprietor, who has owned the place for upward of twenty-five years, informs us that last year 20,000 gallons of wine and 3,500 gallons of brandy were made here. The fruit orchard contains over 600 choice apple, plum, peach, pear, mulberry and other kinds of trees, many of which have been bearing for years, and now produce abundantly of the choicest variety and best quality of fruits.

San Benito County also boasts of having the oldest orchard in the State. It was planted at San Juan soon after the old Mission of San Juan Bautista was founded, about the year 1775. The pear trees have grown to an immense size, and yet bear abundantly, the fruit being of the very best quality. The apple trees are yet bearing, but the fruit is very poor.

The soil of San Benito County also claims the honor of having sustained the first American flag of conquest that was ever unfurled to a California breeze, General Fremont having planted the American flag on Gabilan Peak in March, 1846.

The average climate of this county is the very best on the coast. The Winters are exceeding mild, snow never falls in the valley, and ice has never been known to form much thicker than a sheet of ordinary letter paper. Heavy and destructive frosts are also rare.

The Summers, owing to the cool, invigorating trade winds, which usually set in about the first days of May, and which never fail to fan the country daily during that season, are comparatively pleasant. These winds are not harsh and damp as along the coast line, and are scarcely ever violent enough to be unpleasant. There are virtually but two seasons here—Spring and Summer. Rains commence to fall usually about the middle of October, and continue at intervals until the middle of March, after which time there are occasional light showers until the first of May. Immediately after the first rains vegetation begins to sprout and grow, and from that time until June the mountains, hills and valleys are covered with a mantle of green, presenting a grand and beautiful appearance. The minimum temperature is 40°; the maximum, 100°; average, about 70°.

The health of this climate cannot be excelled in the world, contagious diseases rarely find a lodgment, and by reason of the prevalence of the cool and fresh trade winds during the warmer season, it is entirely free from malaria, ague and like complaints being absolutely unknown here.

Hollister, the county seat, a thriving and prosperous town of some 4,000 inhabitants, is pleasantly situated in the centre of San Benito Valley, 94 miles distant from San Francisco, which is reached by way of the S. P. R. R. The Railroad Company have a fine passenger and freight depot here. Porter's grain warehouses, near the depot, have a storage capacity of 8,000 tons. Hay warehouses, capable of storing some 3,000 tons, are also in close proximity to the depot, and connected to the main road with side tracks. Hollister is easily accessible to many different points of interest, such as watering places, sea-side resorts, mineral springs, hunting and fishing grounds, etc. Located as it is, in the midst of an exceedingly fertile agricultural district, surrounded by lovely scenery, in a delightful and healthy climate, within convenient and comfortable access of the metropolis, possessing all the advantages of an excellent system of town government, splendid water facilities, a well organized and effective Fire Department, flourishing, well attended academies and public schools, churches, banks, good hotels, well edited wide-awake newspapers, wide streets, good avenues, fine brick blocks, and all the necessary concomitants of an industrious, prosperous and well-ordered community, Hollister cannot but be recognized, as designed to be, one of the leading interior towns of the State.

San Juan is located seven miles to the west, and boasts an antiquity nearly equal to that of any town in the State, having been founded by the Franciscan Fathers at the private expense of the King of Spain on the 24th of June, 1755. It formerly was a mission for the conversion of Indians. San Juan now is a quiet, unpretentious town of some 750 inhabitants, about thirty business houses, a fine large school house, two hotels, a Masonic and Odd Fellows' Hall, and two churches. Surrounded by a very productive agricultural district, she is all that a prosperous farming community can make her in point of thrift and enterprise. The other and smaller towns are Tres Pinos, Paicines, San Felipe, San Benito, Erie and Emmet.

LASSEN COUNTY.

By H. M. BARSTOW.

LOCATION.

Lassen County is one of the northern counties of California, and lies on the eastern slope of the Sierra. It was formed in 1864 from the eastern portions of Shasta and Plumas Counties, and derives its name from a pioneer settler, "Old Peter Lassen," as he was generally and familiarly called.

It was bounded on the north by Modoc County, on the east by the State of Nevada, on the south by Plumas County and a small portion of Shasta County, and on the west by Shasta County.

Lassen does not have a high place among those counties of the Golden State which can pride themselves upon having, by their mineral wealth, gained the State its characteristic title and reputation. It was settled slowly and in the manner of the heroic old Argonauts of 1620. Its early settlers found the valley about Honey Lake in the possession of its original owners. But they came to stay, those pioneers did, who braved the dangers of the plains in early days, and it cost them many lives to carry out this resolve, as residents now living, who participated, testify.

EXTENT.

The southern boundary is very irregular, running in a southeasterly direction from Shasta to Sierra counties, thus leaving the eastern boundary on the State of Nevada, 105 miles in length, while the western boundary is almost exactly one-half that distance. The county is seventy miles in width, and embraces an area of 4,850 square miles.

TOPOGRAPHY.

The county is a succession of mountain ranges and valleys, and although in the central and eastern parts the hills seem to have been placed regardless of direction or order, the ranges have a general trend to the southeast and northwest. A ridge, having an altitude of 8,200 feet and called Diamond Mountain, marks the dividing line between Lassen and Plumas Counties. Diamond Mountain forms the southern side of Honey Lake Valley, which extends southeast and northwest a distance of forty-five miles, and is about fifteen miles in width.

In the extreme northwest corner of the county, and extending into Modoc County, lies Big Valley, a large stretch of agricultural land, comprising in Lassen County about 75,000 acres. This valley is watered by Pit River. Ash Creek, and several smaller streams, and has at present about 700 inhabitants.

Long Valley lies in the extreme southeast of the county, contains for its size but little agricultural land, but is remarkable for its singular conformation, which will be noticed hereafter.

Between Big and Honey Lake Valleys lie Grasshopper, Willow Creek, Eagle Lake and Horse Lake Valleys, separated from each other and from the main valleys by intervening ridges of various heights. Each of the last-named valleys are very small, containing but few ranches, and mostly occupied by the bodies of water from which they derive their names.

In the eastern central part of Lassen lies the Madeline Plains a large, level tract of land at an altitude of 5,300 feet. This plain appears to have been at one time the bed of a lake, but, in some of the remarkable changes of Nature, to have been transformed to its present condition. It is about thirty-five by fifteen miles, and is covered by a dense growth of sage brush. The only natural sources of irrigation appear to be the springs about its edge, where there are excellent stock ranches, the surrounding hills covered in bunch-grass affording abundant feed. Any kind of grain will grow upon these plains, which are very fertile if irrigated. There appears to be no good reason why water should not be had by the sinking of artesian wells, for the plains form a basin, surrounded by high mountains, and the surrounding hills afford an abundance of timber for wood, fencing and similar purposes.

The average altitude of the valley lands is about 4,100 feet above the sea level, while the mountains are from 8,000 feet down, the altitude lessening as the ranges find their way from the main chain of the Sierras easterly through the county, until they form foot-hills in the general level.

The timber belt of the Sierras extends into the southern and western portions of the county for several miles, forming an almost solid belt and following the spurs of the Sierras into the county until they fall below the timber line, when the larger timber is replaced by a straggling growth of juniper and mahogany.

The whole county is of a lava formation, but this is not perceptible upon the surface excepting in particular localities, the soil of the county being generally fertile, and where it is as yet unimproved covered with a luxuriant growth of the persistent sage-brush.

Considering its extent, the county does not abound in facilities for irrigation. The principal body of water is in Honey Lake, situated in the southeastern part of the county, and in the lower end of Honey Lake Valley. Though very shallow, this lake has an area of 97 square miles, is fed by several small streams, and has an immense water-shed from the mountains surrounding it. Eagle Lake, in the valley of that name, is next in importance. It covers an area of 55 square miles, is situated twelve miles north of the county seat, and at an altitude of 5,300 feet.

Horse Lake occupies nearly the whole of the little valley by that name, but is small, and can be made available for only a few ranches in its immediate vicinity. Besides these there are several streams, used principally for mill purposes, but none of sufficient amount of water to irrigate lands at any great distance from their immediate course.

CLIMATE.

The climate, considering the altitude, is mild, and generally very healthful, epidemics or contagious diseases seldom occurring. Causes of sickness are usually local, and ascribable to immediate surroundings. The average temperature in Summer is about 80°; in Winter about 45°. Although the surrounding mountains may be covered in snow, it seldom remains long in the valleys, and the Spring is early, though liable to frosts.

VALUATION.

The Assessor's books show statistics as follows:

156,600 acres of land, assessed at an average of $3 34 per acre.

Valuation of real estate in 1879	$393,860
Improvements on same	222,523
Personal property	597,801

There are in round numbers owned in the county—

Horned cattle	18,000
Sheep	50,000
Horses	5,700
Goats	600

There were 25,541 acres of land cultivated in 1878, and 2,416 acres were newly fenced in that time.

POPULATION.

The population, considering the extent of the county, is small, but this is easily accounted for, as the industries and situation of the county are not such as to induce a rapid settlement and development of its territory. It numbers about 3,900 people, most of whom are an industrious and desirable class of citizens.

PRODUCTIONS.

For the year 1878 there were produced: Wheat, 5,876 bushels, on 4,772 acres; barley, 81,630 bushels, on 4,986 acres; oats, 76,740 bushels, on 2,558 acres; rye, 4,860 bushels, on 324 acres; corn, 2,000 bushels, on 96 acres; hay, 15,000 tons, on 12,387 acres; wool, 140,000 pounds; butter, 22,000 pounds; honey, 400 pounds. 750,000 feet of sawed lumber was manufactured, and the value of the fruit crop was about $25,000.

TOWNS.

A great part of the population is scattered on the ranches in the various valleys, and this, in some measure, accounts for the smallness of the towns. The county seat and chief town is Susanville, which was located in 1854 by Isaac N. Roop, then Provisional Governor of the State of Nevada, and named after his daughter Susan. The town is beautifully situated on a slight plateau in the western end of Honey Lake Valley, and viewed from the bluff overlooking it, appears very pretty, the streets being laid out at right angles, and many of the houses being surrounded by their own orchards and embowered in trees.

It numbers about 600 inhabitants, has two churches—Congregational and Methodist—two hotels, two drug stores, four stores doing a general merchandise business, two livery stables, a saw mill on Susan River, which, flowing through the town, empties into Honey Lake some twenty miles distant, and mechanics and artisans enough to keep the population, both biped and quadruped, well shod and housed.

The citizens seem to have an impression that "in unity is strength," for in town there are no less than eight associations, as follows: Lassen Lodge, No. 147, F. and A. M.; Lassen Chapter, No. 47, R. A. M.; and Lassen Commandery, No. 13, K. T.; Silver Star Lodge, No. 135, I. O. O. F.; Laurel Lodge, No. 134, A. O. U. W.; Susanville Lodge, No. 232, I. O. G. T.; and Alpha Council, No. 1, C. of H. Besides these a library association has been recently formed, but is, as yet, supported entirely by private enterprise. Last, but not least, two bright and newsy papers have a home here; the Lassen *Advocate*, edited by E. A. Weed, and the Mountain *Review*, by A. L. & J. O. Shinn, both weekly papers, which are devoted to county interests, and reflect creditably upon their managers.

The United States Land Office for the northeastern district of California is also located here, and adds considerably to the importance of the place.

The dwellings are mostly neat and comfortable, though small. Several new ones, lately erected, show a marked improvement in the latter respect. There is a full supply of the inevitable "John," who, in his peculiar lines of business, possesses a monopoly. The principal building is the Court House, which is situated on high ground, just out of town, is of wood, two stories in height, and cost $12,000.

There are 219 children in the school district, and good teachers are generally had.

For a mountain town, Susanville has unusually good mail facilities. To Reno, which lies ninety miles to the southeast, there is a daily mail and stage line, Summer and Winter; a daily mail to Altmas, in Modoc County, and during the Summer a tri-weekly route to Oroville.

Milford.—Twenty-five miles from Susanville, on the Reno Road, and in the lower end of Honey Lake Valley, lies Milford, a town of about 300 inhabitants. It is situated at the base of Diamond Mountain, about two miles from and overlooking Honey Lake. It has a store, flouring mill, sawmill, and one hotel. About sixty children are enrolled in a school which is kept for from eight to ten months in each year. Opposite the town, and across the lake, which here is about ten miles in width, is an extensive stretch of hay country, occupied principally by stock raisers. In and about this town are some as fine orchards as can be found in this State. Their extent varies from one to twenty acres. The climate is peculiarly adapted to the raising of apples, pears, peaches, plums, etc., the first named fruit amounting annually to many thousands of dollars in value, and being the finest on the coast. Grapes, with the various species of berries, also grow in abundance.

Janesville.—Midway between Susanville and Milford is the town of Janesville, containing about 350 inhabitants. Delightfully situated in a grove of timber, the town is overshadowed by Diamond Mountain, and faces the open country to the north, which can be seen for miles. Here are a store, hotel, blacksmith shop and a fine hall, used jointly by the Masons and Odd Fellows. A few miles from Janesville, and comprised within the same voting precinct, is the small town of Buntingville, having sixty children on its school-roll. In the vicinity are many large and fine farms, having from 160 to 320 acres each.

Johnstonville.—Eight miles farther up the valley, and on Susan River, is the little town of Johnstonville, which, being only four miles from Susanville, is considered an adjunct. In the town and vicinity are about three hundred people. It has a flouring mill, which grinds a great part of the grain grown in the valley, and has eighty children on its school-roll.

Bieber.—A small town in Big Valley, and near Adin, in Modoc County, is but two years old. It is finely situated, and shows signs of prosperity. Already it has two hotels, two stores and a blacksmith shop, and has increased in popualtion more rapidly than any other part of the county. It is about twenty-five miles from Hayden Hill, and a depot of supply for the mines at that point.

RESOURCES.

Lassen County should have a prosperous future. It has at least a million of acres of fertile land susceptible of cultivation. There seems to be no reason why irrigation, by means of artesian wells, should not be practised here as it has been and is in other parts of the State. With comparatively little labor, and the assistance of such irrigation, her boundless acres can be made to produce bounteous crops. In Honey Lake Valley alone there are 150,000 acres that are only awaiting the enterprise that shall put water upon them to produce abundantly. The soil of the vast extent of territory comprised in Madeline Plains, some 300,000 acres, is very fertile. The conformation of the land—the plains being a basin surrounded by mountains—indicates that water could be reached at no great depth, and the now barren waste could easily be made a garden, being susceptible, as has been proved, of high cultivation. One great advantage, or inducement, to the preëmption of this land is, that under the Desert Land Act any qualified person may preëmpt 640 acres.

The ultimate occupation and value of these lands is only a question of time. Much of them now by Summer fallowing and early sowing produce good crops without irrigation. Land is so abundant that only those portions capable of a maximum production with a minimum of labor, offer sufficient inducement for settlement. California is yet only in her youth, but already the tumult, rush and excitement caused by the "finds" of gold without the labor of extracting it have died away and the business of gold getting has become one of the settled and steady industries of the State. For this one reason the proportion of new comers who will enter and improve lands will be greater than formerly, and California's agriculture will be a more important feature in the greatness of the State than its mining. Sooner or later, if the lands are not possessed by workers they will be by capitalists, and "down with the land monopoly" will become the war cry of the mountain people. In addition to its agricultural land Lassen County possesses in

ITS TIMBER

An immense source of revenue. It has an immense supply of large timber, consisting principally of pine, spruce and fir, which only awaits the consumption of that nearer the Comstock lodes and the railroads to become very valuable. It has been well said that the Comstock Lodes are a gigantic mining octopus, which, reaching out its long arms, draws to its insatiate maw a countless quantity of lumber. Exhausting all within reach it will go farther and must apply to

Lassen and Plumas for its food. When it is needed a railroad, which, owing to the conformation of the country, could be easily built from Reno, will, doubtless, furnish the means of transportation, and so still further develop the county.

THE FRUIT CROP

Of the county is also valuable and noted for its quality, "Honey Lake apples" being among the best grown on the coast. In that valley alone the annual value of the crop is about $12,000. The county is capable of growing and does grow, not only the fruits of a temperate climate in abundance as well as the various kinds of berries, but many of those varieties which are raised in the warmer valleys of the lower country.

SHEEP AND WOOL.

The immense ranges of the county afford unlimited pasture for sheep and cattle, especially in the small valleys which intersect the timber belts. Undoubtedly a woollen mill located in Honey Lake Valley, where there is ample water power, would prove a profitable investment. One hundred and forty thousand pounds of wool were raised in this county last year, all of which had to be transported to a place of manufacture. It would also give the county an impetus, as it would furnish a convenient market and induce the extension of a business already important.

THE MINES.

Lassen County hitherto has had no place as a mining district, but now seems to be coming to the front in this respect. On Diamond Mountain, a few miles south of Susanville, are several quartz claims, the owners of which have good reason to believe in their worth, and in which it is proposed to erect quartz mills in the Spring. The mines at Mountain Meadows, on the divide between Plumas and Lassen counties, are said to pay well, and steps are being taken for their immediate development. The mines at Hayden Hill promise to prove bonanzas to their owners, and the following abstract from a recent number of the Mountain *Review*, may be relied upon as being correct: "A short time ago Mr. Farling and Harvey struck a vein of decomposed quartz which was fabulously rich. In a space twenty feet deep by twenty feet in width, they extracted over $8,000. They are now down about fifty feet, and the ledge proves to be a lasting one. In the Brush Hill Mine, owned by Harbert & Hoes, they have a shaft 100 feet in depth; on the 60-foot level there is a drift of 380 feet, and on the 100-foot level another drift of 110 feet. Hopkins & Co. have sunk to a depth of 150 feet, and have taken out considerable bullion. Fairfield & Co. have a tunnel 100 feet in length, and a shaft seventy feet deep on the eastern extension of the Brush Hill lead. There are several other claims which have been worked more or less.

"Three quartz mills are now in operation. The Brush Hill Mill with ten stamps, the Providence and Golden Eagle mills, with five stamps each. The main lead averages about seven feet in width and pays from the top down, although the ore from the 100-foot level is much richer than that above. The assay of the rock from the top down runs from $90 to $150 per ton, and the lowest assay made upon rock from the Brush Hill mine was $48 per ton. The lead is very much decomposed as far as has been worked, and one man with a pick, on the 60-foot level, gets out five tons of ore per day. Some blasting rock has been encountered, but almost everywhere that the lead is worked the rock is disintegrated. There are no base metals to impede the milling, and the process is the simplest that is used. The foreman of the Brush Hill mine informs us that the cost of mining and milling does not exceed $3 per ton.

"There is one feature of this camp that is a source of great satisfaction—the owners of these mines were all poor men, residents of Big Valley, and one of the surest evidences of their prosperity is, that they are able to pass the Winter below, and have plenty of money at their disposal. Another redeeming trait that cannot be found in any other mining town on the coast, is that a saloon will not be tolerated there, and no liquors are allowed to be sold. There is a rumor that one will be started in the Spring, but we hope for the good name of Hayden Hill that it is false.

"There is no doubt but what this camp will be among the liveliest on the coast next Summer."

NATURAL PHENOMENA.

Although there is a great deal of sameness about the topography of the county, there are a few features of interest, among them being

EAGLE LAKE,

A beautiful sheet of water, having an area of 55 square miles, and situated twelve miles north of Susanville, at an altitude of 5,300 feet. The lake, on the south and west, is overshadowed by high mountains. Its waters are as clear as crystal, and the fish with which it has been well stocked by the Fish Commissioners, can be seen at a depth of fifty feet below the surface. It has no apparent outlet or source of supply, excepting from the slight watershed afforded by the surrounding mountains. It is very deep, there being many places where soundings have not yet been had. Its surface is at an altitude of 1,100 feet above Susanville, and the project of tapping it to procure water for the use of the town and to irrigate the valley, has been seriously considered. There are the

HOT SPRINGS,

Consisting of several jets of hot water issuing from the ground in Honey Lake Valley, twenty miles from Susanville, from which place, on a clear, frosty day, the steam can be seen hanging over them in clouds.

An object of much interest, and one which has attracted the attention of scientific men, is

BLACK BUTTE,

An extinct crater, which is crossed by the dividing line of Lassen and Shasta counties. The plain surrounding it is covered by volcanic scoriæ, ranging from the size of a robin's egg to impalpable dust. Numberless small lakes dot the surface, but for which the country would appear a scene of desolation. As it is, the scenery is very remarkable, and the crater, rising almost perpendicularly from the level plateau in the shape of a frustrum, to a height of 472 feet, with a width of 750 feet across the top, looks not unlike a gigantic hat.

LONG VALLEY,

Commencing about eighteen miles west of Reno, Nevada, is worthy of notice on account of its unusual formation. Its south side is formed by a very high, heavily timbered ridge, while the rise in the north is gradual and the country dry, timberless and open. The valley is about forty miles in length, but is very narrow, having an average breadth of only two or three miles. The principal business of its settlers is the raising of stock and dairying, the open country to the north furnishing excellent Winter range, while the timbered mountain in the south is unsurpassed for Summer ranges and dairying purposes. Besides the water furnished by the melting snow of the ridge, there is a stream flowing the entire length of the valley, and fed by hot and cold springs all along its course. This stream furnishes the water for several valuable and beautiful stock farms, and empties into the eastern end of Honey Lake.

STANISLAUS COUNTY.

By L. C. BRANCH.

The Banner Wheat-Growing County of California—A Glimpse of a Portion of the Great San Joaquin Valley.

Stanislaus County can truly boast of being the banner wheat-growing county of California. The statistics of the past few years have placed her first upon the list. This county—though one of the older and more prominent among the mineral counties of California, boasting at one time of her great mineral resources, quietly anticipating the great and important part she was to play in the future development of the resources of the great State of which she formed an integral part, and patiently awaiting the march of time to do justice to her hitherto unrevealed wealth—has, up to the present time, been comparatively little written about for the information of the immigrant who is continually seeking our shores.

LOCATION.

Stanislaus County forms a part of the great San Joaquin Valley. It is bounded on the north and northeast by Calaveras, Tuolumne and Mariposa, on the south and southeast by Merced, on the southwest by Santa Clara and Contra Costa, and on the north and northwest by San Joaquin. Its eastern boundaries extend into the foothills of the snow-capped Sierras, and its western to the summit of the coast range, near Mount Hamilton. Passing through its very heart, within sight of each other, wending their way to the great Pacific, are the San Joaquin, Tuolumne and Stanislaus Rivers. The two former are navigable at certain seasons of the year. The county was organized in 1854, being formed out of a portion of Tuolumne County. It comprises an area of 1,350 square miles, or about 864,000 acres of land, or 37½ townships, which, subdivided into sections, gives 1,350 sections, three-fourths of which is susceptible of cultivation. Within its boundaries is situated one of the most fertile valleys in the world, yielding productions varied in their character and marvellously vindicating the nature of her soil.

RAILROAD COMMUNICATION.

Until the Fall of 1870 this county had no rail communication with the great commercial centres of California. The stage and steamer lines had unlimited sway as means of transportation and communication with other parts of the State. The county is now traversed by three different lines of railway, the most extensive of which is the San Joaquin Valley division of the Central Pacific Railroad. This division leaves the main Central Pacific at Lathrop, crossing through the central portion of the county, and continuing southward, through Merced, Fresno, Tulare, Kern, and the southern counties, affording communication across the continent and with Europe.

The Stockton and Copperopolis Railroad leaves Stockton and crosses through the northern portion of the county, terminating for the present at Milton, in Calaveras County.

The Stockton and Visalia road also extends through the northern part of the county, crossing toward the east, and at present has its terminus at Oakdale, about a mile from the Stanislaus River. By this means the county is now placed within three and four hours' ride of the most important cities in the State, and where before three or four days were consumed in reaching the metropolis, and the Capital, now, with the facilities offered, four hours brings us in contact with the busy circles of either.

There are two railroad companies now in the field surveying a route to Utah, to connect with the California Central of Sydney Dillon and other Eastern capitalists, via Modesto, Sonora and Bodie. One of these—the California and Nevada Company—have already completed ten miles of track from the Alameda end of the road, and are now working on the second ten miles. This will be a narrow-gauge road, and will pass through the great grain-growing belt of this county. It being in opposition to the Central Pacific Railroad Company, the people may soon look for a cheaper means of transportation than any that has yet been afforded. The other company is organized by the Central Pacific Railroad people, who contemplate projecting a road from Modesto over the same route, connecting with the main trunk at this place.

PRODUCTIONS.

Wheat, barley, oats, rye, corn and potatoes, are the staple products. Cotton and hops are cultivated successfully in some parts, and the rich bottom lands along the rivers are well adapted to their cultivation. All kinds of fruits are successfully raised, oranges, lemons, limes, pomegranates, olives, peaches, apples, pears, almonds, walnuts, chestnuts, hickory nuts, peanuts, and grapes of the finest quality. From the latter is made some of the best brands of wine in the State.

A. Schell, of the Red Mountain Vineyard, Pentland Bros., and W. E. Stewart, near Knight's Ferry, in the northeastern part of the county, are constantly furnishing the San Francisco and New York markets with most excellent brands of this beverage. They also make a fine quality of brandy. The earliest fruit in the State comes from the orchards of Stanislaus. Along the banks of her rivers, growing in luxuriant abundance, are to be found the wild grape and blackberry, which are eagerly sought after as luxuries in their seasons. Alfalfa is easily cultivated, and its yield prolific. Wool-growing is successfully and extensively carried on in the foot-hills and Coast Range, where thousands of sheep get pasturage from unsurveyed Government and railroad land.

The greatest portion of its surface is one level unbroken plain, extending as far as the eye can reach. This plain averages between twenty and thirty miles in width, southeast and northwest, and sixty in length, and embraces within its limits some of the very finest agricultural land in California, presenting, when under cultivation, a sight to behold. Imagine yourself riding a circuit of three days through a continuous space of waving grain. Such are the plains of Stanislaus just before harvest.

CLIMATE.

The seasons here are wet and dry. The climate does not vary much throughout the county, and in temperature is about the same as that of the Santa Clara and Sacramento Valleys.

The Summer heat ranges between 80 and 110 degrees, seldom reaching the latter extremity. The Winters are mild and purely temperate, the thermometer varying from 30 to 70 and 80 degrees, rarely going below 30.

In Summer the nights are pleasant and delightful. A gentle breeze sweeps over the valley from one end to the other; it comes from the coast, and in a very great degree adds to the salubrity of the climate. The climate is considered very healthy, and of late many tourists and visitors from the East in search of health have added their attestations to this fact by settling with their families here and influencing their friends to come. There is comparatively little sickness, and where it does prevail it is owing to other causes than the climate. In some of the mining districts, where irrigation is carried on extensively, chills and fever have become prevalent. But even this form of malaria vanishes before the cool, invigorating and healthful breezes of the valley. Old pioneers, who came here in '49 and '50, still retain their vigor and exhibit manly specimens of robustness and health. Many of them have reached their three score years and ten, and seem well preserved for another quarter. A generation has grown up in the county since its settlement and organization, who, with the rising generation, are remarkable for their good constitutions, sturdiness of limb, the perfect symmetry of their forms and the bloom of health upon their cheeks.

Observations show the annual rainfall at Modesto to have been: For 1877-78, 12.18 inches; 1878-79, 8.22 inches; 1879-80, 12.96 inches; 1880-81, 7.20 inches. At La Grange, which is situated nearer the mountains, in the eastern part of the county, the amount of rain is greater on an average than on the plains. The following rain table, kept by Mr. Joseph Domalick, at his place near La Grange, will show the rainfall at that point since 1867. April and May are lacking for 1880-81, which would increase the total rainfall for that year:

YEARS.	September	October	November	December	January	February	March	April	May	TOTAL
1867-68	....	....	2.55	7.91	3.84	3.63	4.67	1.57	1.32	25.49
1868-69	....	0.80	0.20	3.25	4.00	5.13	3.07	1.06	1.15	18.16
1869-70	....	1.56	0.60	0.60	1.87	4.33	1.43	1.83	0.40	12.84
1870-71	....	0.60	0.25	2.19	2.19	2.13	0.81	2.55	0.43	10.55
1871-72	....	....	2.25	6.94	3.69	5.32	2 17	0.80	0.30	20.40
1872-73	....	....	0.12	7.69	1.12	4.67	0 30	0.45	....	14.35
1873-74	....	....	0.14	4.19	3.92	2.32	2.91	1.15	....	14.63
1874-75	0.15	3.52	3.54	0.11	2.30	....	0.41	0.26	....	10.29
1875-76	....	0.40	10.68	1.98	5.63	2.25	3.88	0.67	0.48	25.87
1876-77	....	0.55	0.48	....	2.59	0.45	0.61	....	1.06	6.74
1877-78	....	0.68	1.18	1.12	5.68	5.54	3.09	1.67	0.04	19.00
1878-79	0.05	0.90	0.50	0.20	1.90	2.39	2.16	2.30	0.97	11.53
1879-80	....	2.35	1.61	3.48	0.60	2.68	1.79	6.04	2.04	13.06
1880-81	....	0.16	0.92	4.21	4.58	3.62	1.53	....	....	14.92

DROUTHS.

Drouths occurred here in the seasons of 1850-51, 1862-63, 1863-64, 1870-71 and 1876-77. Three of these occurred before farming had received much attention. The loss to stockmen was great; their stock perished in large numbers, and left many of them without any. Since the reign of Agriculture, commencing in 1869, we have had three drouths, resulting in total failures of the crop.

Within the last few years our farmers have adopted more systematic methods of tilling the soil—Summer-fallowing, double cross plowing and a thorough pulverization of the soil, having taken the place of the slip-shod manner that existed not many years ago, when the surface was merely scratched over. It has been thus demonstrated that by a proper and thorough cultivation our soil will produce good crops with very little rain. This is especially true of the sandy loam soil, and, while it requires but little rain, an excessive amount is readily absorbed by it, and does no harm.

RAPID GROWTH.

The county, since its organization in 1854, has maintained a rapid and steady growth. For many years it was a mining and stock county, during which period its agricultural resources remained undeveloped. In 1867 more attention was given to farming—the broad fields around Paradise, Tuolumne City, Westport, and where the town of Modesto now stands, were sown in wheat, and yielded beyond the expectations of the most sanguine. Since then, the wealth and population of the county have rapidly increased, until few counties in the State can show a like ratio in increase of wealth, in proportion to population, as Stanislaus.

The following table shows the assessed value of property for twenty-eight years:

INCREASE OF WEALTH.

1854	$ 577,973	1868	$1,994,173
1856	642,983	1869	3,047,963
1856	642,422	1870	3,423,808
1857	665,132	1871	3,097,971
1858	730,000	1872	7,105,983
1859	736,652	1873	6,441,864
1860	969,870	1874	7,449,560
1861	851,912	1875	7,436,470
1862	861,912	1876	5,991,605
1863	661,217	1877	5,425,116
1864	824,152	1878	6,232,441
1865	883,419	1879	6,100,069
1866	1,031,561	1880	9,182,010
1867	2,412,303	1881	11,477,922

STATE AND COUNTY TAXES.

The following are the rates of State and county taxes levied upon the people of Stanislaus for each year since 1863:

1864 (on each $100)	$3 33	1873 (on each $100)	$1 56
1865	3 05	1874	1 65
1866	2 98	1875	1 40
1867	3 87	1876	1 65
1868	2 37	1877	1 65
1869	2 30	1878	1 53
1870	1 87	1879	1 60
1871	1 86	1880	1 35
1872	1 50	1881	1 32

The population of Stanislaus County is now estimated at about 10,000. The present rate of taxation is lower than any county in the State, except Colusa, Monterey, Sacramento, San Benito and San Joaquin.

Production for 1878:

AGRICULTURAL.

Land cultivated, acres	374,870
Wheat, 300,000 acres; bushels	5,000,000
Barley, 60,000 acres; bushels	1,500,000
Rye, 7,500 acres; bushels	75,000
Corn, 478 acres; bushels	20,950
Peanuts, 5 acres; pounds	7,500
Potatoes, 100 acres; tons	120

Sweet potatoes, 3 acres; pounds	18,000
Onions, bushels	1,000
Hay, 6,757 acres; tons	8,689
Hops, 30 acres	15,000
Butter, pounds	13,200
Cheese, pounds	3,000
Wool, pounds	1,513,820
Honey, pounds	2,000

FRUIT.

Value of fruit crop	$11,500
Bearing lemon trees	60
Bearing orange trees	200
Grape vines, acres	146
Wine, gallons	55,950
Brandy, gallons	920
Breweries	3
Beer, gallons	32,000

LIVE STOCK.

Horses	21,300
Mules	1,463
Total number of horned cattle	5,228
Sheep	31,014
Cashmere and Angora goats	456
Hogs	5,853

IMPROVEMENTS.

Grist mills	2
Barrels of flour made	14,400
Mining ditches	2
Miles in length	9
Irrigating ditches	2
Acres irrigated	1,300
Estimated population in 1879	12,000
Registered voters in 1879	3,000

County scrip on the General and Hospital Funds is worth 98 and 99 cents on the dollar.

The county indebtedness is $86,000.

Cash on hand in County Treasury January 1, 1882, $20,478 10.

Estimated value of Court House grounds, $60,000.

County Hospital and grounds, $5,000.

In 1879 our productions amounted to: Wheat, number acres 298,978, 3,095,655 bushels; barley, number acres 28,992, 375,380 bushels; rye, number acres 3,385, 23,340 bushels; corn, number acres 234, 11,130 bushels; potatoes, number acres 38, 128 tons; hay, 5,731 acres, 6,620 tons; hops, 100 acres, 50,000 pounds; butter, 125,000 pounds; cheese, 22,000 pounds; wool, 810,600 pounds; honey, 2,500 pounds; wine, 8,400 gallons; brandy, 3,650 gallons; beer, 30,000 gallons.

COUNTY BUILDINGS AND GROUNDS.

The Court House is situated in a square, 300x400 feet, and has obtained a reputation abroad for the beauty of its architecture and the symmetry of its grounds. These grounds are handsomely laid out into well-curved walks, and interspersed here and there with many different varieties of trees and shrubbery, presenting a lovely appearance, and being a favorite resort of the populace. Its architect was A. A. Bennett, of San Francisco, and it was built by Robinson Brothers, of Stockton.

The Hospital grounds are situated about a mile from the county seat, in sight of the town, and comprise about twenty acres of valuable land. The Board of Supervisors now contemplate the beautifying of these grounds at an early day. About one acre, surrounding the main building, has already received considerable attention, presenting a beautiful appearance with its evergreens, flowers, shrubbery, and fruit trees of all kinds. The patients raise their own vegetables, and find many hours of useful employment about their home. Major James Burney, who was Hospital steward for over three years, made many improvements, which now begin to add to the beauty of the place.

FARMING LANDS.

Stanislaus County is in every sense an agricultural county. She produces on an average, over 3,000,000 bushels of wheat, and cultivates 300,000 acres and upward annually. Her lands are naturally sought after for agricultural purposes The farming lands lie in every portion of the county, except the more mountainous. The soil varies in character, from a heavy, black rich soil to the sandy loam, and averages throughout from twelve to fifteen bushels per acre, in some places producing as high as fifty and sixty. There is no vacant agricultural land in the county, except in the foot-hills of the Coast Range. Large tracts are held by Charles McLaughlin, Timothy Paige, John W. Mitchell, Threlfell Bros., J. D. Patterson, R. M. Wilson, E. B. Beard, John Murphy, Mrs. R. P. Ashe and others. Its price varies, according to location. Good land in a central location is held at from $20 to $50 per acre. In other parts of the county land can be bought for from $5 to $10. The railroad company sell their grazing lands at $2 50 per acre. Good terms can be had in purchasing.

PROFITS FROM FARMING IN STANISLAUS.

The following, from the Stanislaus *News* of December 12th, will give an idea of the profits of farming in this county. That paper says:

"We have frequently been applied to by persons residing in other parts of this State, as well as in the East, for information respecting profits realized by our farmers. As an explanation to all such queries, we have applied to an intelligent farmer near this place for a statement of receipts and expenditures, which we herewith give. The farm is within three miles of Modesto, and consists of 640 acres of land. The yield for the present year was supposed to be about an average of this section of the county:

Value of farm	$12,800
Value of teams and implements	2,000
Total valuation of property	$14,800

EXPENSES.

Hired help	$300
Seed wheat	280
Cost of sacks	285
Cost of threshing grain	470
Cost of feeding teams	360
Total	$1,695

RECEIPTS.

Wheat sold in December above cost of storage....$6,408

"The farmer informs us that he has reserved from his crop sufficient for both seed and feed for next year, which should be added to the receipts, and which would swell the total amount for the year in the one item of wheat to $6,983. This gives us as a balance above expenditures the sum of $5,293. Of course, the farmer's work should also be deducted. Yet there were other profits from productions of the farm, such as vegetables, fruit, hogs and fowls, which would probably swell the amount to more than enough to compensate him for his own labor. We have, then, for the year, a profit from farming of $5,293 on 640 acres of our plain lands. And it should also be remembered that the past season was comparatively a dry one, nor was the soil cultivated any better than the average of our lightest lands."

MEXICAN GRANTS.

Stanislaus County, like all the southern counties in the State, embraces within its limits several of those large grants of lands made by the old Mexican Governors in the early days of California, and which have passed into the history of the State under the name of "Mexican Grants." There are five in this county, as follows: The Thompson Rancho, comprising eight square leagues of land, or 35,532 80-100 acres; the Rancheria del Rio Estanislaus, containing eleven square leagues, or 48,836 64-100 acres; Rancho el Pescadero, containing eight square leagues, *echo sitios de granada mayor*, or 35,446 6-100 acres; Ran-

cho del Puerto, containing three square leagues, or 13,340 39-100 acres, and a portion of the Oristimba Rancho, the other portion being situated in Merced County. This rancho contains in all 26,666 39-100 acres. The two former of these are situated in the northeastern portion of the county, extending their boundaries to the River Stanislaus. The three latter lie on the west side of the great San Joaquin River. Their titles have all been confirmed by the United States Government, and many a farmer is fortunately in the quiet and peaceable possession of a home and small farm upon the subdivided tracts of these large ranchos.

VITICULTURE.

Under the Act of the Legislature for the "promotion of the Viticultural Industries of the State," approved April 15, 1880, this county was placed in the Sixth District, comprising the counties of San Joaquin, Stanislaus, Merced, Fresno, Tulare and Kern, and called the San Joaquin District. Mr. Geo. West, of Stockton, was appointed Commissioner. The Commissioners have had time to make only one report to the State Board of Viticultural Commissioners, and in regard to this district a meagre one, owing, as Mr. West says, to disadvantageous circumstances in the failure of grape-growers to cooperate in submitting information, and the extensive territory embraced in the district rendering it impossible for him to visit in person each locality. He says of this county: "The grapes grown compare favorably with those of other localities, the largest vineyards being in and around Knight's Ferry. Good grape lands are worth from $15 to $20 per acre, according to location and easy access to market. Nearly all the vineyards are irrigated by means of canals or ditches. All varieties do well when irrigated, and no disease trouble their vines. Joseph Donnici and V. E. Bangs report the same in substance, except that they do not irrigate."

The Red Mountain Vineyard, the largest in the county, is situated in the foothills of the Sierra Nevada, on Little John's Creek, near Knight's Ferry. It contains seventy acres, according to the report of Mr. H. R. Schell, manager, "two-thirds of which are of the Mission, the remainder of Muscat and Zinfandel, all producing large crops. The grapes ripen early, and are seldom injured by late frosts."

The formation of the country around this vineyard is volcanic, and of the red soil. There are large quantities of land with good facilities for irrigation in that locality, which can be bought for from $10 to $20 per acre. There are several vineyards in the neighborhood of Knight's Ferry, all doing well. H. B. Pentland has twenty-five to thirty acres on the south side of the Stanislaus River. He reports large quantities of suitable land in that vicinity.

We have many advantages in the cultivation of the vine which other localities do not have—these are advantages of climate and soil, for instance. We have the "red mountain volcanic soil," which has the reputation for yielding the best vintages—as to quality. We have the loose, warm sandy soil along our rivers and on our plains, which is recommended by the best authorities as proof against phylloxera—this dread disease has never appeared among the vines in this county; and then, again, we have the heavy adobe soil of the "west side" and the foothills of the Coast Range. Much of this lies in little valleys and on hillsides, and is susceptible of irrigation. We have another advantage in the northwest winds, during the Summer, which prevent mildew and sunburn, and we seldom have late frosts to injure the crops. This industry is beginning to receive some attention here, and in addition to the vineyards already mentioned, several others have been planted within the last year or two. Stephen Rogers, a large farmer near the town of Modesto, has planted a vineyard of many thousand vines on his bottom lands, lying on the Tuolumne River. It has been discovered that the vine does well on our plains without irrigation and without much cultivation. We look for the time soon to come when most of our farmers will cultivate, in addition to their large fields of wheat and other cereals, vineyards containing thousands of vines of the choicest quality.

There and thousands of acres of land suitable for the vine which can be had at reasonable prices, and we say to the viticulturists of the infected regions of Europe, that our broad acres are open and for sale; that we have many advantages over them; that we are free from phylloxera; that we have a climate equal to theirs; that we have as good and better soil; that we have already advantages over them in market. We say this to immigrants of any and all classes who are seeking our shores to build homes. We want you, and we have what you want—cheap lands in the foothills; the place of the vine, the orange, the lime, the lemon, the fig, the pomegranate, the peach, the pear, the apple, the apricot, and all other fruits. The vintage of 1878 resulted as follows: Wine produced, 55,950 gallons; brandy, 920. That of 1879: Wine produced, 8,400 gallons; brandy, 3,650 gallons. In 1880: Wine produced 10,600 gallons; brandy, 700 gallons.

DAIRYING.

This industry is not carried on extensively as yet in the county, though there are many advantages for it. The overflowed lands along the rivers afford green feed the year round, and plenty of timber for the protection of stock. There are many of these ranches excellently adapted to this business. Within the last two years Mr. Samuel Miller, on the Stanislaus, has turned his attention in this direction and met with great success. He is now milking 100 cows, making large quantities of butter and cheese, for which he finds a ready market.

The butter production for the year 1879 amounted to 125,000 pounds, and cheese to 22,000 pounds.

There are many places in the foothills, also, that would make excellent dairy ranches and provide support for many families.

POLITICAL.

Stanislaus is divided into nine Judicial Townships, as follows: North Emory, Camp Washington, Buena Vista, Branch, Empire, Turlock, San Joaquin and Orestimba, each having at least one Justice of the Peace and Constable, and some of the larger ones have two. There are seventeen election precincts, known as North, Knight's Ferry, Buena Vista, Oakdale, Dry Creek, La Grange, Dickenson's, Waterford, Empire, Modesto, Westport, Turlock, Tuolumne City, Murphy's, Hill's Ferry, Crow's Landing and Grayson.

The affairs of the county are at present entrusted to the following officers, whose terms, except that of Superior Judge and Supervisor, expire January 8, 1883:

COUNTY OFFICERS.

Superior Judge, A. Hewel; Sheriff, A. S. Fulkerth; County Clerk, J. W. McCarthy; Recorder, John McCoy; Treasurer, M. H. Hall; District Attorney, W. O. Minor; Surveyor, R. B. Robinson; Assessor, J. F. Tucker; Superintendent Public Schools, ex-officio Coroner and Public Administrator, W. H. Robinson.

BOARD OF SUPERVISORS.

L. B. Walthall, James Warner, T. T. Hamlin.

Terms commence the first Monday in February, May, August and November.

Board of Equalization meets on the first Monday in July.

There are fifteen road districts and forty-nine school districts.

Politically, the county is Democratic. The following is the vote of Stanislaus County for Governors of this State since the organization of the county:

1855—John Bigler (Democrat) received 299 votes; J. Neeley Johnson (Know Nothing), 225; total vote, 524; Bigler's majority, 74.

1857—John B. Weller (Democrat) received 419 votes; Edward Stanley (Republican), 8; G. W. Bowie (American), 130; total vote, 557; Weller's majority, 281.

1859—M. S. Latham (Democrat) received 389; John Curry (A. L. Democrat), 106; Leland Stanford (Republican), 13; total vote, 508; Latham's majority, 270.

1861—Leland Stanford (Republican) received 247; J. R. McConnell (Democrat), 415; John Conness (Union Democrat), 231; total vote, 893; McConnell's plurality over Stanford, 168.

1863—Fred. F. Low (Union) received 347; John G. Downey (Democrat), 399; total vote, 746; Downey's majority, 52.

1867—Henry H. Haight (Democrat) received 451; George C. Gorham (Republican), 219; Caleb T. Fay (Ind. Republican), 3; total vote, 673; Haight's majority, 229.

1871—Newton Booth (Republican) received 527; Henry H. Haight (Democrat) 817; total vote, 1,344; Haight's majority, 290.

1874—William Irwin (Democrat) received 788; T. G. Phelps (Republican), 382; John Bidwell (Independent), 137; total vote, 1,307; Irwin's majority, 269.

1879—George C. Perkins (Republican) received 593; Hugh J. Glenn (N. C. and Democrat), 994; Wm. F. White (Workingman), 74; scattering, 3; total vote, 1,664; Glenn's majority, 324. For the new Constitution, 1,188; against, 423; total vote, 1,611; majority for, 765.

PRESIDENTIAL VOTE SINCE THE ORGANIZATION OF THE COUNTY.

In 1856, the county gave Buchanan 187 majority over Fremont and Fillmore, out of a total vote of 685.

In 1860, Breckenridge had 266 plurality over Lincoln, 201 over Douglass and 366 over Bell, out of a total vote of 899.

In 1864, McClellan received 69 majority over Lincoln, out of a total vote of 623.

In 1868, Seymour received 292 majority over Grant, out of a vote of 992.

In 1872, Greeley received 202 majority over Grant, out of a total vote of 1,130.

In 1876, Tilden received 295 majority over Hayes, out of a total vote of 1,899.

In 1880, Hancock received 397 majority over Garfield, out of a total vote of 2,247.

EDUCATION.

The educational facilities offered by this county are most excellent, as evidenced by the number of school districts into which it is divided, the liberal salaries paid to teachers, and the number of school months in the year. According to the estimates of Professor Bangs, in 1855 the whole number of school children in the county was 84; number of scholars enrolled, 25; cash received from State apportionment of school moneys, $95; from county taxes, $150; number of schools in the county, only 2. In 1880 our school children had increased to 1,845: our enrolled scholars to 1,683; cash received from State apportionment, $11,928: from county taxes, $2,973; miscellaneous sources, $606. The valuation of our school property is estimated at $52,375, and our number of schools have increased to 47.

There are forty-nine school districts; the highest salary paid is $125; the average salary to male teachers is $75 40, and to female teachers is $67 19; and the average number of months taught is eight. There are seven teachers having life diplomas, fifteen holding State diplomas, and twenty-seven male teachers in the county. The State apportionment for the thirtieth fiscal year, ending June 30, 1879, amounted to $11,739 42. This is distributed to the different school districts in the county. The total amount paid the State for school purposes from interest on State school land and from property tax, for the year ending February 18, 1879, is as follows: Interest on school lands, $1,490 78; property tax, $12,331 96. Total amount, $13,822 74. The Teachers' Institute, which meets annually, is always well attended, and a lively interest seems to be taken in educational matters.

TOWNS.

Modesto, the county seat, is situated near the centre of the county, on the San Joaquin Valley Division of the Central Pacific Railroad, twenty miles from its junction with the C. P. R. R. at Lathrop, thirty miles from Stockton, and one hundred and two miles from San Francisco. The town was laid out by the Contract and Finance Company, in the year 1870, being now eleven years old. It is situated in the centre of one of the finest wheat-growing sections in the State, and has made rapid progress within the last few years, now having a population of about 2,500, which is rapidly increasing. Buildings are springing up on all sides, and no town in the State can to-day show a like prosperity in proportion to population.

The town contains many very beautiful buildings, both public and private. Among the former is the elegant Court House, erected at a cost of $60,000; the Modesto School House, the original cost of which was $18,000; the Odd Fellows' Building, a handsome brick building on the corner of Tenth and H streets, costing $22,000; the Modesto Bank Building, Grollman's, Chapman's, and Braun's brick buildings, the Ross House and Prentiss Hotel, also a handsome structure. Among the latter are the residences of many of the most prominent farmers of the county, who have taken up their abode here, with their families, to avail themselves of the educational advantages afforded.

The town now contains fifteen stores, five hotels, six warehouses, four restaurants, three boarding houses, four drug stores, six blacksmith and wheelwright shops, four livery stables, three hardware stores, thirteen saloons (exclusive of hotel bars), three paint establishments, two furniture and upholstery stores, two tin shops, two brick-yards, three draymen, six laundries (a majority of which are Chinese), three butcher shops, one bakery, two breweries, two photographic galleries, five millinery and dressmaking establishments, six barber shops, three variety stores, four boot and shoe establishments, three jewellers, four tailor shops, two harness shops, two undertakers, one soda factory, one barley mill, one coal-yard, two lumber-yards, a branch of E. M. Derby & Co., of Alameda, an Abstract Bureau, containing, when completed, a full abstract to all the lands in the county, under the Durrey system. Mr. George Perley is the projector of this enterprise.

Three dairies, located near the town, afford the inhabitants a supply of first-class milk.

The various professions are well represented—the Gospel, Physic and the Law; the first by seven stationed ministers, the second by six practising physicians, and the third by ten practising attorneys. The township has two Justices and two Constables, who are located here. The Fire Department consists of a Hook and Ladder Company, composed of the "stalwarts" of the town. Modesto will soon realize the necessity of the addition of an engine to her Fire Department. There is a scientific association, which has col-

lected quite a number of volumes in its library; a "Literary Social," which meets once a week. All of these institutions are literary in their nature, and composed of many of the best citizens of the town. There are seven churches—a Catholic, two Methodist, Episcopal, Presbyterian, Christian and Baptist; one Grange of the Order of Patrons of Husbandry, one Masonic and one Odd Fellows Lodge, with Encampment, one Good Templars Lodge, one Order of United Workmen, one Grove of Ancient Order of Druids, one Post Grand Army of the Republic, one Lodge of Knights of Honor, and one Parlor of Native Sons of the Golden West, a Liberal League, three Sunday schools, three newspapers, the Stanislaus *Weekly News*, edited and published by J. D. Spencer, the *Modesto Herald*, owned and published by A. E. Waggstaff. The former is the Democratic organ of the county, and the latter the Republican. Also, the *Modesto Straw Back*, published semi-weekly, at Modesto, by H. L. Bradford. Independent in politics. The town has an excellent supply of good, pure, fresh water, pumped daily, and furnished at low rates by the Modesto Water Company; the rates are as low as $1 50 per month for family use, additional charges being made for irrigating purposes. The town is illuminated with coal gas, and its many advantages are enjoyed by the inhabitants. The latter is furnished by the Modesto Gas Works, which also keeps on hand coal, coal tar, coke and lime, at the lowest market rates.

For these two commodities the town is indebted to the enterprise, the energy and incomitable perseverance of a young man by the name of Chas. F. Leavenworth (a nephew of Dr. Leavenworth, of Sonoma) and his associates.

The main streets of Modesto were graded by the Railroad Company several years ago, at an expense of $3,000, rendering them high and dry. A system of drainage is needed for the town. It is now large enough to be incorporated, and many of the citizens are in favor of that project.

There is a glove factory, a candy factory, a manufactory of ploughs and agricultural implements, a planing mill, a flour mill, and a steam laundry.

The warehouse capacity of Modesto is 15,000 tons. Between 450,000 and 500,000 bushels of wheat are handled here during a season.

Considerable activity has been manifested recently in real estate. One hundred lots changed hands in one day at prices ranging between $20 and $40 per lot. The usual price of lots owned by the Railroad Company is $75 to $125 per lot. Lots can be had at from $40 to $150, on easy terms, by applying to the writer of this article. Real estate is a good investment, both in town and country.

This is the nearest point on the railroad to the great Yosemite. Many go this way, and express themselves well pleased.

The town is very healthy, being located high and dry on the plains, about a quarter of a mile from the Tuolumne River, free from malaria and all other local causes of disease. Society is good, and an excellent class of people are continually settling here. The Sunday law is observed, and peace and quiet reign on the Sabbath day.

Turlock, another agricultural town, is situated in the southern part of the county, about fifteen miles from Modesto, on the line of the San Joaquin Valley road. It is situated in the centre of a large and fertile section. The town was laid out a few years ago by John W. Mitchell, the largest land-owner in the county. In the midst of his broad acres he here resides, displaying considerable executive ability in the management of his large estates, embracing in all over 100,000 acres. Mr. Mitchell owns the large warehouse at this place, having a capacity of 100,000 bushels. The town contains two hotels, one large store and two smaller variety stores, two blacksmith shops, several saloons, one tin shop, two livery stables, three warehouses, one boot and shoe establishment, one drug store, a public school, a Grange of Patrons of Husbandry, post and express office. It is making great progress, and during the harvest season exhibits considerable life and activity. From 12,000 to 15,000 tons of wheat and considerable wool are shipped from here annually. A great deal of merchandise is sold at this point annually. Farmers in the neighborhood are prosperous, and are now busily engaged in preparing for the great harvest of 1882. Land can be had in this section at prices between $5 and $15 per acre, and on easy terms.

OAKDALE.

Oakdale, a thriving agricultural town, is situated in the northern part of the county, near the banks of the Stanislaus River, and is the present terminus of the Stockton and Visalia Railroad. The objective terminus of this road was Visalia, but it has reached no further than this point. The inhabitants of this lovely little town number about 700. The town derives its name from its beautiful situation among groves of innumerable oaks. It is a favorite resort for picnic excursions and pleasure parties from Stockton, Sacramento and nearer points. Considerable business is done here, it being the freighting point to many of the interior mining towns. This is a good location for health and general prosperity. It contains two warehouses, one of which is a large brick, with a capacity of 4,000 to 8; 1 public school, with two teachers; 5 stores, 8 saloons, 1 Union Church, 3 blacksmith shops, 1 plough factory, 2 hotels, 1 restaurant, 1 newspaper published weekly by H. E. Boothby—the Stanislaus *Wheat-Grower*, 1 livery stable and feed yard, 1 barber shop, 1 millinery establishment, 1 butcher shop, 1 tin store, 1 hardware store and agricultural implements, 1 drug store, a Fire Company, and many beautiful residences. Lots are sold very cheap and on easy terms. Land in the vicinity is held at from $20 to $25 per acre. Oakdale is the great storehouse for the grain-producing country of the northern and northeastern part of the county.

Knight's Ferry.—Twelve miles directly northeast of Oakdale, in the extreme northeastern portion of the county, is situate the old mining town of Dentville (after Captain John Dent), commonly called and generally known as Knight's Ferry. It is beautifully laid out, on the banks of the Stanislaus River, and contains many cosey and handsome residences, nearly all of which are surrounded in profusion with the foliage of the tropics. Here oranges, lemons, the date palm, the cocoa and the citron obtain a luxuriant growth. Many orchards abound, and vineyards, weighed down in the proper season with the choicest of varieties, bedeck the surrounding hills. The celebrated Red Mountain Vineyard of A. Schell is located near this place. W. E. Stuart's orchard and vineyard, commanding a fine view from the prominence of its situation, adds to the many attractions of this little village. There is one large flouring mill, three stores, two hotels, a blacksmith shop and a livery stable, a brewery, three saloons, a public library and a Masonic and Odd Fellows Lodge.

This town has become somewhat renowned as the rendezvous for a short while, in 1853, of Captain U. S. Grant, of the United States Army, who has since become so celebrated in the history of our country. Captain Grant paid a visit in that year to his relatives—the Dent family—who lived here in early times. Many of the old residents of the place remember him well.

It was the county seat of Stanislaus County from 1862 to 1871, when it was removed by a popular vote to Modesto. The first agricultural fair in the county was held at this place. The agricultural interests surrounding it are good. It has been generally considered a mining town, but these two industries are nearly equally divided.

It has one of the best water powers in the State, and needs only capital and enterprise to put it into use. This would be a most excellent location for the establishment of woollen mills or other manufacturing industries. A railroad is badly needed through that section of the country, leading on to Sonora and over the mountains. When such is effected, this town will at once revive, and become one of the most important in that section of the county.

La Grange, commonly called in early days French Bar, is a little mining town, situated in the eastern part of the county, near the Tuolumne, Mariposa, and Merced County line. In early days it was a flourishing mining camp, considerable trade being centred here. It was the county seat of Stanislaus County for several years.

The town is still kept up by the mining interests around it. The La Grange Ditch and Hydraulic Mining Company, organized in San Francisco, has been operating extensively in and around the town for several years.

M. A. Wheaton, of San Francisco, and others, have excellent water privileges on the Tuolumne River, a few miles above the town. Gravel mining is carried on extensively in this region. A recent rich discovery in quartz was made a few miles from this place, on the Olsen Ranch. It has passed into the hands of John B. Haggin and other capitalists, who are busy at work in developing its resources.

La Grange has several stores, two hotels, three saloons, two blacksmith shops, one barber shop, a Catholic Church, and many residences. The mining interests, which have sustained this town in the past, still promise it equal prosperity for the future.

There are several fine vineyards and orchards in this neighborhood. They do well, and are sources of profit to their owners.

Waterford—a small town situated on the Tuolumne River, about twelve miles east of Modesto, has two stores, one hotel, one saloon and several residences, a public school, a Grangers' hall, and is a purely agricultural town.

Hill's Ferry—is in the southwestern part of the county, on the San Joaquin River, and near the Merced County line. The town site is laid out on the old Mexican grant known as the "Orestimba Rancho." It was at one time considered the head of navigation on the San Joaquin, but steamers now venture considerably further than this point. This town is maintained by the agricultural interests of the great "West Side," which district contains within its limits an area of the most fertile soil in California. The town has shown fresh signs of progress within the last few years. A new stimulus has been added by the great irrigating projects of Miller & Lux and others. Canals have been cut through the region of country surrounding it, causing the brightest hopes for the future.

It contains two large stores, two hotels, two livery stables, five saloons, a brewery, an extensive lumber yard, two barber shops, a drug store, a Masonic Lodge, a blacksmith shop, two shoemaker shops, a carpenter shop, a silversmith, a public school and three warehouses. "Dutch Corners," an inseparable part of Hill's Ferry, and situate but a short distance from the town, is a retreat kept by a lively Dutchman by the name of Ernest Voight. Large quantities of grain and wool are shipped by steamer from this point. R. M. Wilson, an extensive farmer, owning over 5,000 acres of the fertile lands of the "Orestimba," has been making large expenditures recently in perfecting a system of irrigation for his large tract. He has made a success of the experiment, and now contemplates dividing his land into small farms, and selling off to bona fide settlers, on reasonable and easy terms. A noted day in the history of California will it be when her large land-owners consent to such a subdivision of their immense estates as will enable thousands of settlers to avail themselves of the opportunity of procuring homes for themselves and families at reasonable prices and on easy terms.

Graysonville, another agricultural town of the "West Side," occupies a beautiful site on the banks of the San Joaquin, about twenty miles below Hill's Ferry, and fifteen miles from Modesto. It was settled at an early day, being built on a portion of the "Rancho el Pescadero." The same character of resources surround it that enable Hill's Ferry, Turlock, Oakdale and other agricultural towns in the county to maintain their prominence. J. W. Van Benschoten, Thomas A. Wilson, Mrs. R. B. Smith, J. D. Patterson, and other large land-owners, have their tracts near here. Vast herds of cattle and flocks of sheep are kept in the coast range of mountains, a few miles distant. The town contains one hotel, one store, one large warehouse, one livery stable, one restaurant, five saloons, and other business houses, a post and express office, a public school, Grangers' Order and hall, and many private residences. This is the official headquarters of the "West Side Irrigation Commissioners." A stage line affords communication between here and Hill's Ferry and Bantas. The California and Nevada Railroad will cross the San Joaquin about six miles below Grayson.

Ceres, a small town situated on the railroad, between Modesto and Turlock, was laid out in 1874 by R. K. Whitmore, who owns a large tract of land in the neighborhood, and the large warehouse in which is stored immense quantities of grain from the surrounding country. There is a store here and a blacksmith shop, and a resident minister, also a public school.

Salida, another small railroad town, is situated near the Stanislaus River, between Modesto and Lathrop, on the vast domain of John Murphy, another one of the large farmers of the county. There are two large warehouses here, a Post Office, restaurant and blacksmith shop.

This completes the number of live towns in Stanislaus County. There are several *dead* ones, which flourished in the past, but whose names have now passed into the history of the county as "what was, but are no more." They may revive in the progress of events, and the future historian of the county may be compelled to write the names of "Paradise," "Tuolumne City," "Westport," "Empire City" and "Adamsville," but we are obliged to leave them for the present with the dead.

PIONEERS.

Stanislaus, like all other counties in the State, contains many old pioneers. To be a '49er, or the son of one, is as proud a title of nobility as any American could wish. There is an organization of pioneers in the county. Those who once occupied prominent positions, and whose names are identified in the county's history, are Hon. Robert McGarvey, now of Ukiah, Mendocino County, who was the first County Clerk and afterward County Judge; S. P. Scanlker, now of Sacramento, who was the first District Attorney. William Holden, afterward Lieutenant-Governor under Haight, was the first Representative. P. B. Nagle, attorney-at-law, now of San Francisco, was District Attorney of this county in 1862 and a pioneer of the county. Hon. J. W. Robertson, now of Merced County, came here when a boy, and was one of our Representatives to the Legislature. A. B. Anderson, now of Bodie, was an early settler in the county and elected County Clerk in 1861. Halleck, Peachy, Billings and Stone and General W. T. Sherman had early interests here in a Mexican grant. Dr. John Strentzel, of Martinez, was an early settler. Hon. Charles M. Creamer, now of San Joaquin, was District Judge in 1854, and there are many others who have passed away.

PUBLIC LANDS.

HOW TO OBTAIN THEM—TIMBER CULTURE, ETC.

COMPILED BY G. FITZGERALD.

To anything like a definite understanding of the rights conferred by the public land system of the United States, an explanation of some of the terms used, and of a few facts lying at the base of the system are indispensable. Commencing, then, with the very first, all land in the United States is either public or private; private lands being owned by private individuals or corporations, deriving their titles either from the General Government or a foreign power. All lands owned by the United States are public lands, though usually only those are so termed which are for sale or other disposal by the Government, under general laws. There are also tracts of land donated to the several States by the United States, or obtained otherwise, as in Texas, which are called State lands, and are not subject to disposal under the Land laws of the United States. The public land States and Territories are divided into districts, in each of which is a land office, with two officers in attendance, a Receiver and a Register, who act as agents for the Government, from whom all patents issue, either direct or through the local offices.

Of the different descriptions of public lands open to settlement or possession are agricultural lands, which are adapted, as the name implies, to the raising of crops. They are to be obtained under the laws relating to public sales, and private entry, and the homestead, preemption and timber culture laws; desert lands which will not produce crops without irrigation or artificial water supply, and are to be obtained by purchase as hereafter described; timber lands, unfit for cultivation, but valuable for the timber growing on them; stone, coal, mineral, and saline lands, all to be obtained for settlement, cultivation, and other use under different Acts of Congress.

In the business connected with the taking up of land, the expression "public sale" means a sale of lands at auction. When large bodies are to be sold a proclamation is issued in the President's name, describing the tract and stating the time and place of sale. When only a few isolated tracts of land, not embraced in the regular proclamation, are to be sold, a notice to that effect is published in a newspaper in that vicinity.

The land is sold to the highest bidder for cash only, which must be paid on the same day, the buyer not being compelled to settle on or cultivate it.

Where lands are offered for public sale and find no bidders, they may be bought at any time thereafter at the local Land Office, if not withdrawn from market or reserved for some other purpose. This is called a "private sale" or "entry," a "location" being a transfer of land paid for by a warrant or land scrip, which is issued by the Government, in return for military or other service, and to promote certain public undertakings.

"Offered lands" are those that have been advertised or proclaimed and offered for sale, but that were not then sold. If not withdrawn or reserved they remain open to private entry or location. "Unoffered lands" are such as were never offered at public sale.

The terms "minimum" and "double minimum" lands refer to the price of them. The lowest-priced or minimum lands, when sold, bring $1 25 per acre, the lowest price they are allowed to be sold for at public sale. Double minimum lands are rated at $2 50 per acre. Such are even-numbered sections, located within railroad limits, and supposed to be more valuable on that account.

All public land is not surveyed, although unsurveyed land may be settled upon, and the settler thereby obtain a prior claim to the land upon certain conditions of settlement on its being surveyed and coming into the market.

But before any land can be entered, a fair idea of the system of surveying and laying out land by the Government is necessary. Surveying districts are divided into parallelograms, these into townships, and townships into sections. In the dividing of a district into parallelograms a starting point is determined upon, and a "principal base line," so called, is surveyed on a true parallel of latitude east and west from it. From the same point a line called the "principal meridian" line is extended due north and south. The law requires that the meridianal lines shall be run on the true meridian; therefore, to correct the error that would result from the convergency of meridians as they run to the north pole, and also to correct errors arising from inaccuracies in measurements on meridian lines, "standard parallels" or "correction lines" are run and marked at every four townships or twenty-four miles north of the base, and at every five townships or thirty miles south of it and running parallel with the base. At intervals of forty-eight miles east and west of the principal meridian, what are called "guide meridians" are run north and south, starting north of the base, in the first instance, and running up to the first standard or correction line north, then starting again from the first standard north, but further east or west, according as it lies east or west of the principal meridian line, and running up to the second standard north. The guide meridians south of the base line start from the first standard south, and run north to the base line, but making the junction inside or nearer the principal meridian line than the starting point of the former guide meridian mentioned as running north from the base line. In this way a set of double corners is established at the inter-

section of the standard parallels and guide meridians, which are known as "standard corners" and "closing corners."

These parallelograms, lying between the guide meridian and principal meridian east and west, and principal base line and first standard lines north and south, those north being twenty-four by forty-eight miles in extent, and those south thirty by forty-eight—there being one tier of townships less on the north—from the framework of the rectangular system of surveys. They are divided into townships lying in tiers and ranges, and containing as nearly as practicable 23,040 acres each. The townships are numbered according to tier and range, and are divided into thirty-six sections, one mile square, containing 640 acres each, and these again are divided into quarter sections of 160 acres, and the latter into quarter sections of 40 acres.

Beginning in the northeast corner, the sections of a townships are numbered from 1 to 36, numbers 16 and 36 being reserved for school purposes. The section on the northern and western boundaries do not contain exactly 640 acres. The smaller subdivisions of a section are called lots, and are numbered from 1 upward. The law does not require that any areas of land smaller than a section shall be surveyed, though smaller surveys, at the application of the intending settler, may be made at his expense.

The boundaries of these legal surveys are marked at the corners by posts, trees, stones and mounds, according to the most explicit and careful directions by law, by which the different subdivisions may be recognized. United States public land may be obtained by cash purchase at public auction, by private entry as before described, and by homestead and preëmption settlement.

But little land is now sold at public auction, as the policy of the Government is to encourage preëmption and homestead settlement and timber culture. The manner of the sale, which is very brief and simple, has already been given. In a cash purchase, by private entry, the applicant first presents a written application to the Register for the district in which the land desired is situated, giving its location in whatever township it may be, the area, and an agreement to pay for it at the legal rate, according to a form furnished at the local Land Office, the Register certifying to the fact of the lot containing the number of acres stated and the price per acre, and an affidavit to the fact of its not being mineral land. After which the Register, if it be a vacant tract, will so certify to the Receiver, stating the price, and the applicant must then pay the purchase money. A receipt is then issued by the Receiver, who gives the purchaser a duplicate of it. The Register and Receiver will make returns of the sale at the close of the month to the General Land Office at Washington, from which, when the proceedings are found regular, a patent or complete title will be issued. In the making of homestead settlements the laws under which such settlement is made, give to every citizen, a head, etc., or to those who have declared their intention of becoming citizens, the right to 160 acres of minimum land that has been surveyed and is not mineral in character, or 160 acres of the even sections of townships, or those designated by even numbers within railroad or military road grants, which latter donations are given by the General Government to aid in the construction of those roads.

In applying for land under the homestead laws, an application is made according to a form furnished from the local office, giving the location of the tract and the number of acres, which application, and certain facts relating to the land, are certified to by the Register, and accompanied with an affidavit certifying his eligibility as a settler, that the application is made for actual settlement, cultivation, etc., according to form furnished as before, after which he pays the legal fees and that part of the commissions which is due at the time of entry. Those fees and commissions in the Pacific States and Territories are: Upon 160 acres of double minimum land, $12 when the entry is made, as commission, and $10 as Govment fee, and a further commission of $12 when the certificate is issued. Upon 80 acres of the same class of land the commissions and fees are just one-half those upon 160 acres, and upon 40 acres the commissions are one-half those upon 80 acres, but the fee is the same. Upon 160 acres of minimum land the commissions are $6 when entry is made, $6 on issuance of certificate, and $10 fee. Upon 80 acres of land of this class the commissions and fee are just one-half that upon 160 acres, and upon 40 acres the commissions are one-half that upon 80 acres, and the fee the same. He is then required to live upon and cultivate the land for five years, unless he prefer to purchase it, in which case he may do so upon making the necessary proof of at least six months' residence and cultivation, which is called commuting a homestead entry.

No longer residence after the completion of the five years is required to entitle him to a patent for his land. Within two years after the completion of the five years the settler must file a written notice of his intention to make a final proof of his settlement, and fulfillment of the requirements of the law, in which he must describe the land claimed, and give the names and Post Office address of the witnesses by whom he intends to prove the facts as to settlement, cultivation, etc. A notice of such application will be published by the Register of the local Land Office, once each week, for a period of thirty days, in a newspaper published nearest the land described, and posted in some conspicuous place in his office for the same length of time. At the time of filing the notice with the Register, a sum of money must be paid in with it sufficient to cover the cost of such publishing. Upon the completion of such notice in the Land Office and publishing in the paper, a certificate of those facts, accompanied by a copy of the notice and the affidavit of the publisher or foreman of the newspaper, is issued by the Register as proof that legal notice has been given. The application to make final proof, the notice thereof, etc., are all made according to prescribed forms furnished at the Land Office. Final proof may then be made at the time and place designated in the previous notice, by appearing in person with his witnesses, which proof, duly authenticated by the Court seal, is required to be transmitted to the Register and Receiver, together with the fee and charges allowed by law, which charge is twenty-two and a half cents per one hundred words. The proof required is an affidavit as to citizenship, with record proof of his naturalization, if foreign born, allegiance, fact of settlement, cultivation, and time of residence, together with testimony of the claimant and witnesses, in response to an official form or questions as to identity, family, settlement, character of land, improvements, etc.

If the proof be satisfactory the officers receiving it will give or send a receipt for the fee charged, as the balance of payment for the entry of the land and patent issued for the same, of which the settler is now the legal lord.

Preëmption settlements may be made upon either surveyed or unsurveyed lands, by the heads of families, widows, or single persons over the age of twenty-one, who are or have declared their intention of becoming citizens of the United States, excepting Indians, who have not ceased their tribal relations, and become citizens. Persons owning 320 acres of land, or who have left land of their own in the same State or Territory,

or who are only settling for the purpose of speculation, cannot preëmpt. Nor can a party hold public land, as a tenant, for a claimant.

A quarter section or 160 acres of minimum or double minimum land, may be pre-empted, but where the settlement is made upon unsurveyed land, to which the Indian title must have been extinguished, no proceedings can be had toward obtaining a title to the land until it has been surveyed and returned to the local Land Office. Nothing is paid beyond the fees and commissions for homestead land, while $1 25 or $2 50 per acre in money, or its equivalent, must be paid for preëmpted land, though such settlement may be changed into a homestead entry if so desired.

If the settlement be made upon offered land, the settler must file a declaratory statement of the fact of his settlement within thirty days from the date of settlement, and within one year from the day of such settlement must appear before the Register and Receiver, and make proof of his actual residence and cultivation of the tract, and secure it by paying for it in cash, or warrants, or scrip.

If the settlement be made upon surveyed but unoffered land, the statement must be filed within three months from the date of settlement, and proof and payment made within thirty-three months from that date, or, in the case of unsurveyed land, the statement within three months and the payment within thirty-three months from the date of the receipt at the Land Office of the approved survey. Should he not make his claim before the day of public sale of such land, for which he will have time to do, his claim is forfeited. At the time of proof and payment, of which published notice must be given, as in homestead cases, an affidavit and testimony in person before the Register or Receiver, and of witnesses, which may be taken by any officer authorized to administer oaths, is made by the settler, and the final papers are thereupon issued by the Register and Receiver, if the testimony be satisfactory to them, and a duplicate given him of the receipt for the money paid for the land, for which in due order a patent is issued from the General Land Office, and sent to the local office for delivery upon surrender of the duplicate receipt, unless otherwise directed by the settler as allowed by law.

The timber culture law was enacted with the object of encouraging the growth of timber by assisting the settler to become possessor of the land, on condition of growing trees for a certain time, and to a certain extent prescribed by law. The head of any family, including a woman duly qualified, or any person over twenty-one years of age, a citizen, or who has declared his intention of becoming one, may settle upon and enter 160 acres of land (the claim to it attaching from the day of entry), by application according to a furnished form, accompanied by an affidavit as to citizenship, character of land, object of settlement, etc., upon which a duplicate of the receipt signed by the Receiver for the money received by him is given the applicant.

The fees and commissions for entry for either minimum or double minimum lands, upon either of which he may enter 160 acres, are $2 each to the Register and Receiver at the date of entry, and also at the date of final proof, and a commission of $10 for a tract of over 80 acres; for a tract of under 80 acres, $5. As not more than 160 acres in one section can be entered, a previous entry existing upon which the conditions have been fulfilled, no subsequent entry can be made by other parties, nor can more than one entry be made by the same person.

A few scattering willows and stumps, or a few trees and bushes, do not characterize land as already timber land, within the definition of the law, but an eighty-acre tract upon which are trees, many of them five inches in diameter, may not be entered for timber culture. The land must be naturally devoid of timber. Land acquired as timber land is not, in any event, liable for debt contracted previous to such final acquisition, nor is homestead land liable for debts incurred previously. The varieties of trees that may be cultivated are established by law, and are mostly what are known as timber trees, or such as are commonly used in the construction of houses and ships. The law requires that at least one-sixteenth of the land, unless it be less than forty acres, shall be broken and planted before patent can be obtained, one-half of which sixteenth is to be broken the first year and one-half the second year, though neither half need be planted in trees till the second year after the breaking of each. For a tract under forty acres, one-sixteenth of that area must be so broken and planted. The destruction of the trees, seeds or cuttings by drouth, grasshoppers, or other enemies, entitles the settler to an extension of one year's time for planting for every year of such destruction, upon his furnishing proof of the same.

If at the expiration of eight years from the date of entry, or within five years from such expiration, the party making the entry, or his or her heirs, if the party be dead, can prove by two credable witnesses that he or she has for a period of eight years cultivated and protected the required number and character of trees; that at the time of making final proof there shall be growing 675 healthy trees to each acre, not less than 2,700 to each acre having been originally planted, he or she shall be entitled to receive a patent for such land, and thereby become owner.

What is known as desert land may be acquired by the settler to the extent of one section, by a declaration of intention of reclamation, and the testimony of two witnesses as to the fact of its being desert land. This proof being made, the settler pays a sum of money upon the land, at the rate of twenty-five cents per acre, and will receive from the Receiver and Register a duplicate of a certificate of the foregoing proceedings.

At any time within three years after the issue of the certificate, provided the land has been officially surveyed, the settler may make satisfactory proof by the testimony of himself and that of two credible witnesses as to his compliance with the conditions of the law (one of the principal of which is the conducting of water upon the land), and after surrendering the duplicate certificate mentioned, and making a final payment of $1 per acre upon the land, receives a duplicate receipt for the same of one issued by the Receiver, which entitles him to ownership of it. The spirit of the foregoing laws is to enable those in modest circumstances, either native born or from abroad, or those burdened with debt, to acquire a comfortable home, and to become valuable citizens. That it is accomplishing this object is attested by the many happy firesides scattered all over the land.

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LOS ANGELES COUNTY—Northern Part.

By GEO. C. KNOX.

Los Angeles County has been naturally subdivided into a series of valleys, the areas of which are greater in extent as an approach is made southward to the coast, and whose boundaries are, as a general rule, plainly marked by intervening ridges of foothills, covered with luxuriant growths of grasses, or of mountain spurs, teeming with mineral wealth. It is true, that in its northeastern corner there is a large tract, constituting a portion of the great Mojave Desert, and having an area of 800 miles; but it must be borne in mind that the entire county has a greater width of eighty miles, and extends in length through two degrees of latitude, so that its waste, great indeed in any country of less magnificent detail, is but a small percentage of the total area. To attempt any minute description of the county, within the limits of this article, would be simply impossible. The same amount of space could easily be used in pointing out the natural advantages of one valley-section alone, even of the smallest, and then the half would not be told. Each valley in itself is an Eastern county in size, and the entire county, having so great a length north and south, naturally embraces within its limits much variety of climate, as well as many different qualities of soil. Then, again, in its northern portions, where irrigating facilities are scant, there is a greater rainfall; while in the southern and eastern parts, where irrigation is a necessary adjunct to the cultivation of the soil, water is abundant and requires only a more perfect and systematic development to make the county in fact what it now is in name. On this account it will be as well to attempt simply an enumeration of its different valley sections, presenting them in such a shape as to make their geographical relations to each other better understood, and noting such salient features in each as may be interesting to the tourist or home-seeker.

Passing over the route of the Southern Pacific Railroad, one enters the county near the northwestern corner of the Mojave Desert, and, traveling south, will see to the left hand this desert reaching in an almost unbroken monotony of plain to the far waters of the Colorado River, whilst on the right there appears the foothills of the Tejon range of mountains, enclosing the sheep pastures of La Liebre, Castac and Tejon ranchos. These ranchos and the public lands around them embrace within their limits the Lake Elizabeth section. In the vicinity of the lake are a number of small valleys, whose catchment area of watershed inclines to the lake, and containing here and there small patches of land, adapted to the cultivation of cereals and northern fruits. To this section, however, there are two serious drawbacks—constantly prevailing winds, and the great amount of alkaline deposits in the low lands. Located in and around the mountain pass between the great valley of the San Joaquin to the north and the Mojave Desert to the east, there is but a short period of calm in the twenty-four hours. These lands lie, besides, in a basin, with a lower elevation than the two plateaux above mentioned, and in consequence, the drainage is all directly towards Lakes Elizabeth and Castac, forming the centre of the basin.

Continuing southward through the Soledad range of the Sierra Madre, on a steep descending incline, and passing the mining camp of Soledad twenty miles to the East, the upper end of the valley of the Santa Clara River is reached. At Newhall, the terminus of the Santa Barbara and Ventura stage line, the nucleus for a large town has been established.

This village is situated in the San Francisco rancho, and was projected and laid out by the owner of that tract, H. M. Newhall, of San Francisco. It contains a large hotel, a finer and more completely fitted hostelry than any between Merced and Los Angeles, two large grain warehouses, blacksmith and carpenter shops, livery stables and every adjunct to a thriving and prosperous village. In addition there are located here the farm-house, barns and outbuildings, used by Mr. Newhall in connection with the cultivation of his rancho. He has not yet offered the land for sale in small lots, but is at present engaged in wheat-raising on a large scale. Last year, a very unfavorable one for small grain, he harvested between thirty and forty thousand centals of wheat on an area of three thousand acres. This season he has seeded over ten thousand acres in wheat.

Onward to the south, but now ascending the north face of the San Fernando range, the road passes through the petroleum districts, now being thoroughly developed, and giving promise of quick and profitable returns. The summit is reached still in the oil country, thence through the San Fernando Tunnel—the most difficult of construction and the longest, but one, work of the kind in the United States—on a steep down grade to the head of the San Fernando Valley, and the train stops at the station. Close by is the old Mission of San Fernando, interesting now as the former home and headquarters of Andres Pico, the generalissimo of Los Mejicanos of 1846, whence the army of defence marched forth to spend one long Summer's day in a bloodless combat with the Pathfinder, on the slope of El Gabilan, and whence, at a later date, the same valliant caballeros rode to redeem themselves in the hearts of their señoras, by the disastrous attack upon Kearney's dragoons at San Pascual. The valley is now, par excellence, the wheat field of Southern California, and in an unbroken expanse of green, spreads out, east and south, from the Mission, for miles and miles. In the rancho proper of the same name are more than six townships of land, and, besides, in the plain, are the ranchos of La Providencia, Los Feliz and El Encino. Last year 150,000 centals of wheat was considered scarcely half a crop, although at the rate of sixteen centals to the acre. This year the acreage seeded is fully fifty per cent additional. It is claimed, and no doubt the assertion is well founded on fact, that there are no better wheat lands in the State. The rainfall rarely, if ever, is so slight as to cause an entire failure of the crop; and the soil and location, by reason of its isolation from the sea coast by the intervening Cahuenga hills, is admirably adapted for the successful harvesting of this cereal. Last season was an exceptionally bad year for farmers; still, the result of the harvest—sixteen centals per acre—in some localities would have been considered good. These lands can be purchased in small lots from twenty acres upward, and upon the usual terms—a small cash payment, say one-fourth or one-fifth of the purchase price, and the balance on long time with ten per cent interest. Vines and semi-tropical fruit trees are also successfully grown, but this cannot be done on a very large scale on account of the indifferent facilities for irrigation. Immediately around the Mission, where is one of the oldest and largest olive orchards in Southern California, are lands which can be covered by the existing supply of water, and which, having especial water privileges, are rated above the ordinary prices. It is possible that in the future the deficiency may be supplied by means of artesian wells, but as yet no experiments in that direction have been attempted. Other sections in the southern part of the county, around Westminster, Centralia and Arteria, have overcome the difficulty by this method; but all attempts heretofore to develop artesian water on the higher

levels, immediately adjoining the foothills, have been in a measure failures, Flowing water was obtained in some instances, but not in sufficient quantities to supply the demand or to justify the requisite expenditure. It is possible, too, that the plan, suggested by Assistant State Engineer Schuyler, especially with reference to Los Angeles and San Bernardino counties, may be instrumental in the development of an increased supply, as all the larger cañons, inclining to the San Fernando plains, contain a small flow of water near their heads which is wasted by absorption in its passage.

From San Fernando Station in a southeasterly direction, still on a down grade, and across the San Fernando Plain, the Los Angeles River is reached, and on its north bank, and at a distance of from eight to three miles from Los Angeles City lies the San Rafael Rancho. This track has been partitioned between the owners in large subdivisions, one of which has been further cut up in small parcels and put upon the market. The part so divided is owned by Mr. Andrew Glassell, a gentleman who, in connection with a former partner, originated and built up the settlement of Orange, in the southern end of the county. In offering the land for sale, the Orange plan has been again adopted. Ditches leading from the Tejunga Creek and from the Los Angeles River have been constructed, and each acre is given a water right and an interest in the conducting ditch. Any portion of the unsold lands can be rented, and in addition to the ususual method of selling, land is sold by being planted on shares. Any one wishing to purchase by the latter method makes his selection and enters at once into possession, agreeing to plant the same in vines, orchards, etc., and to cultivate it for an agreed period. At the expiration of the contract time the purchaser is given a deed for his portion of the land so improved, and thus need not expend one dollar in the purchase of his homestead. The nearness of the lands in question to Los Angeles makes them very valuable, with an ordinary demand readily commanding prices, varying from $40 to $70 per acre for unimproved lands. By this method, however, it has been rendered in a great measure unnecessary to fix a value for all, as the land is paid for by labor alone. The objections, urged against the low lands, lying south and west from the city, that, being on a lower level than the town, they are subjected to the miasmatic evils arising from a defective sewerage draining into them, do not apply here, this tract being located on a plateau, elevated between thirty and forty feet above the town. There are no lands in the county at the present time for which there is such an active demand.

Passing this point, our train enters the city and thence a trip by rail will conduct us in four different directions: Southwesterly to the seaside at Santa Monica; southerly to Wilmington harbor, nineteen miles distant; southeasterly to Anaheim, passing Florence Junction, Downey City and Norwalk on the way; and northeasterly on the transcontinental line, to the eastern limit of the county. Let us first take the through line. As the train on this route crosses the river to East Los Angeles, it enters and passes through the point of junction of three converging ridges, two of which to the west enclose the San Fernando and San Rafael plains, and the range to the east and south dividing the San Gabriel section from the coast valley, extending past Downey City and Compton to Wilmington. Through these low rolling hills, now used as grazing lands, but which eventually will be transformed into valuable vineyards, a few miles' travel opens to view the most lovely and picturesque landscape in the whole of Southern California. In front the eye is first caught by the New Mission of San Gabriel—new only in comparison with the older Mission of the same name, situated on the Rio Honda, ten miles to the southeast—whilst all around the picture is dotted with handsome and costly villas, embowered in the perfume-laden and evergreen orchards of "semi-tropicalia," and encompassed on all sides by fruitful vineyards. To the southeast, almost equi-distant from the city and the Mission, and sufficiently remote from the railway thoroughfare to maintain its Arcadian repose, lies the settlement of Pasadena. Started in 1874 by a colony of Indians and located on the high undulating mesa on either side of the Arroyo Seco, its rapid and successful growth has demonstrated that there are no better vine lands than these—a mooted question before its settlement—and further that an economical and systematic use of water in irrigation will go far towards increasing the capacity of the present supply. Within the limits of the colony are contained twenty thousand acres, ten thousand of which it is claimed can be irrigated by the existing water appropriation. It is now proposed to bore into the mountain and obtain a further subterranean supply, which, if the theory of the projectors should be borne out by fact, will afford a sufficient quantity of water for the entire tract. Between Pasadena and the Mission, and constituting a prominent feature in the landscape as seen from the rail, are Mound Vineyard and San Marino. The first named property was the home of the late Hon. B. D. Wilson, an American pioneer of the county, and to whom more than any other person is due the credit of having originated and given an impulse to grape and orange culture. It was, also, by the exercise of his wise judgment and owing to his individual effort, ably seconded and assisted by his son-in-law and partner, that the San Gabriel Valley has outstripped other localities in this section in its settlement, and has kept well in advance in its approach and entrance to that more refined and thorough social civilization which is not generally characteristic of new countries. The Mount Vineyard brand of wines was the pioneer vintage presented to the connoisseurs of the Eastern States from this part of the State; and its excellence, which has in no way deteriorated since the property passed under the sole control of Mr. Wilson's son-in-law and successor, still maintains the pre-eminence which it acquired primarily by reason of its early introduction. Twelve years ago these properties and San Gabriel were synonymous terms; but now, from Pasadena in the southwest to the Santa Anita rancho in the east, a distance of fifteen miles, the country has become almost one unbroken vineyard and orange orchard. To attempt its description in detail would occupy too much space, and besides it has time and again been written up. It is the place of all others for health-seekers who desire to make a permanent residence on this coast and who have the means to pay for improved places. The Mission Fathers were wise in their generation, and it is well known that the sites of the old Missions were located with especial reference to the comfort and convenience of the physical man. This new Mission was the most important one here. The inference is natural, therefore, that to its location more than ordinary care and attention were given.

From San Gabriel Station the road turns almost east, bearing very slightly to the north, and has a steady incline upward from Los Angeles to the east boundary of the county. Between four and five miles from the last station, we come to the villages of Savannah and Lexington, the business centres of El Monte settlement, and being in its northern portion. This section forms properly a part of the San Gabriel Valley, being bounded on the east by the San Gabriel River, and there being no topographical line of demarcation between the two localities. It was at one time the great maize-growing region of Southern California. Indian corn is still the staple product of the farms, and the yearly yield now is much greater than when it controlled the market; but it no longer holds a monopoly in its cultivation, Downey City and Gospel Swamp being formidable and aggressive rivals. The settlement extends from a short distance north of the railway southerly to El Paso de Bartolo, a break in the ridge, dividing the valley from the coast plain, through which the San Gabriel River passes, and has a length north and south of about ten miles, with a greatest width of seven miles. It is entirely settled in small farms, ranging in size from 20 up to 100 acres. In its lower portion on the Rio Honda, and a short distance above the junction of

that creek with the river, is the old Mission of San Gabriel, now a crumbling ruin. The principal residents at this mission, and in its immediate vicinity, are native Californians. The balance of the population is American, chiefly from the Southwestern States. North of the railway and next above El Monte lies the Azura Duarte Rancho. This is a tract of about 9,000 acres, lying on an inclined plain, with slope to southward, immediately at the foot of the Sierra Madre. It was subdivided in small farms about ten years ago. Since then almost the entire tract has been purchased by different persons as subdivided, and it now is one of the most thrifty and prosperous settlements in the county. It is splendidly adapted for the cultivation of the grape. Semi-tropical fruits also do well. The temperature of the daytime, both Summer and Winter, is pleasant and equable; but the nights are always cool, and occasional frosts in the Winter season render orange and lemon culture somewhat precarious. There are a few small orange and lemon orchards, but, as a general rule, the vine and northern fruit trees are the staple industries. Although twenty miles from Los Angeles, lands sell readily at prices varying from $100 to $200 per acre for improved places. Each farmer, having but a small holding, has improved his place to the utmost extent, and no one will sell at all unless the full value of the property can be realized. One especial advantage here is, that being situated in a pocket in the mountain, the settlement is entirely exempt from the dry and hot east wind which periodically blows in other less sheltered parts of the county.

From Lexington the road continues easterly across the San Gabriel River, distant three miles, and enters La Puente Rancho near its northwestern corner. This rancho contains a large amount of valuable farming land, but it has not yet been placed upon the market, being now held in large parcels, and used chiefly as a stock range. Continuing in La Puente, the line passes to the south of the dividing ridge between Mud Springs and San Jose valleys. This ridge is isolated from the hills surrounding the plain, commencing at a point in the valley about three miles east of the San Gabriel River, and ending as abruptly about two miles northwest of Pomona.

San Jose Valley, through which the railway has been constructed, is the narrower of the two, but is well watered by the San Jose creek, which runs through its entire length, emptying into the San Gabriel at El Paso de Bartolo. This valley is generally under cultivation, maize, small grain and potatoes being the principal crops; although flax has been quite extensively experimented in during the past four years, and is now taking its place as one of the leading crops. The hills on the south, dividing the valley from the Anaheim section, are used for sheep pasture.

At Pomona, the next station after Spadra, the shipping point of San Jose Valley, our railway trip will properly end, the eastern limit of the county being only six miles further on at the crossing of San Antonio Creek. This is quite a large village, containing, among other essentials, livery stables, where teams can be obtained to visit its surroundings. Pomona itself sprung up under the homestead association system, town lots being located in the centre of the purchase, and the farm lots increasing in size as they were located more remotely from the village. It was intended originally to be devoted to the culture of oranges, lemons, etc.; but there arose one drawback, in the shape of frosts in the Winter and early Spring, which necessitated a change in the first intention. The soil is well adapted for the growth of those varieties of vines whose fruit can be used in the manufacture of heavy-bodied wines, such as port and angelica. The class of land is the same as in the celebrated Cucamonga Vineyards, which are distant about eight miles from the village, just over the line in San Bernardino County. The water facilities are not perfect, the principal supply of water being obtained from the San Antonio Creek, and the land being of such a leachy description that a great waste necessarily occurs in the carriage of water in an open ditch. Several farmers, however, have tried for artesian water, and with a good measure of success. The flow obtained, although not near so large as in the settlements around Westminster and Norwalk, if properly economized, will be sufficient for small farms. The strongest well that has been bored will discharge an amount of water equivalent to ten miners' inches, or 0.23 cubic feet per second. At Pasadena this is considered sufficient for their lands, and is the basis upon which it is estimated that ten thousand acres can be covered by their present supply. At Riverside, San Bernardino County, twenty-five miners' inches, or 0.585 cubic feet per second, is considered the unit of service. Lying southeast from Pomona first comes El Chini Rancho, a large tract of plain land with scant irrigating facilities. It is now occupied and used by sheep-raisers. Then comes the Rincon settlement, just at the head of the pass in the hills through which the Santa Ana River enters the Anaheim Valley. The farmers here raise small grain almost entirely, having an abundance of water furnished by Rincon and El Chino San Creek. From Pomona northeast lies the Antonio cañon, heading on the southwestern slope of San Antonio Mountain, and containing a small quantity of tillable land. The residents therein, however, are principally engaged in bee-keeping, tilling the land merely for domestic uses. In fact, in every cañon and gulch, and all along the south slope of the Sierra Madre, from San Antonio to the western limit of the county, are to be found settlers on the wild lands who, as bee-keepers, are engaged in developing and building up a very profitable and, in the future, important industry. In this cañon there is also a company at work in hydraulic mining, and at its head small placers are profitably worked.

Rounding the base of the foot-hills on the return towards Los Angeles, we pass the San Dimas Cañon at the head of Mud Springs Valley. Here again come wheat lands, the crops of that cereal very rarely failing. The rainfall is good, and no irrigation is attempted, except on a very small scale. A large portion of the valley is still open for settlement, and would furnish a very eligible location for a colony. Next, the settlement known as the Dalton Azusa is reached. This tract was occupied about ten years ago by settlers claiming the land as belonging to the public domain. It was also claimed by Mr. Dalton, the owner of the Azusa Rancho, as subject to purchase by him under an Act of Congress, the land in question surrounding his rancho, and being within its original limits. A long and protracted litigation has resulted in a victory for the settlers, as regards the outside lands, and additionally, by reason of loans and mortgages to obtain means for legal expenditures, in despoiling the owner of property to which his title was without question. The tract is valuable, being very similar in character and description to the Azusa Duarte, and now that litigation has ceased, is rapidly filling up with a farming population. The two Azusas are fortunate also in possessing large water privileges. Being situated just below the point where the San Gabriel River debouches from its cañon, the entire surface water of the river is appropriated and divided between each settlement proportionately to its number of acres. In the cañon of the San Gabriel and the tributaries thereto, placer mines are worked on a small scale.

Taking the rail again at Los Angeles, south toward Wilmington, for several miles, in fact until Florence Junction is reached, the scene from either window is almost tropical in its surroundings. A succession of orchards of the orange and lemon, hedges of lime and cypress, are broken only by interposing vineyards. At Florence the Anaheim Branch Railway leaves the main line. At this point, too, commences the artesian belt of which Compton, a few miles below, is the central point. These two settlements are distinct only in name, merging the one in the other, and occupying the lower portion of the plain commencing in Los Angeles City, and extending westward to include

the ranchos La Ballona, La Cienega, Sausal Redondo, and La Centinella. The two localities are not dissimilar in other respects, the principal industries in each being growing small grain and preaching temperance and prohibition. From Compton down, the road passes through the San Pedro rancho, owned by a Californian, and used for pastoral purposes. At Wilmington, the southern terminus of the Los Angeles and San Pedro Railroad is the principal shipping port in the county. The breakwater and other works developing the harbor, constructed under Federal supervision, have made material changes in its facilities for receiving shipping. The work is as yet in an unfinished condition, former appropriations having been expended; but the result thus far has been equal to the most sanguine expectations. If the works should be continued to completion, and there is no doubt that this will be done, Los Angeles County will possess a check upon freights and fares far more potent for good than the most incorruptible commission.

I have already exceeded my limits, however, and there still remains much territory to be traversed. The settlement around Downey City, with its crops of maize, pumpkins, and hogs, and its irrigation system, one of the most complete in the county, the valuable grain and vineyard lands of the San Antonio Rancho, a township in itself, lying north of the Anaheim railway, and adjoining the pueblo lands of Los Angeles, the artesian belt encircling Norwalk and Artesia, and the cienega lands lying to the west of Los Angeles are all deserving of more than passing notice. Santa Monica, too, the Long Branch of the Pacific, with its villas and bathing houses and its new wharf, and the section, unknown and unsettled as yet, adjoining Ventura County, should not be omitted in the enumeration. But the subject requires a book in which to be even concisely written, and in any less space much that should be told must be omitted.

ALPINE COUNTY.

By G. E. LUKENS.

Alpine County is located in the eastern part of California, bordering on the State of Nevada, the northern extremity commencing at the elbow, or where the dividing line between the two States turns from a north and south to an easterly direction, and is located in the summit and on the eastern slope of the Sierra Nevada Mountains. It was organized under an Act of the Legislature of 1863-64, from a portion of the counties of El Dorado, Amador, Calaveras and Mono, and derives its name from the Latin word "alpinus," meaning high and lofty mountains, which no one after traversing through the county will doubt but that it was appropriately christened. The people of Alpine County can pride themselves of being "above" many other citizens of sister counties of the State in altitude, which averages from 4,000 to 11,000 feet above the level of the sea. The county was first settled at a small villa in the northeastern part of the county called Woodford's, at the base of the mountain on the old emigrant road leading through Hope Valley from Carson City to the then-called Hangtown. The date of this settlement was in the year 1855. Soon afterward there was a small water-power saw mill erected at this place on the bank of Hope Valley Creek, where lumber was sawed and furnished for building material at Genoa, in Carson Valley, Nevada. The settlement of the county was very slow from that time until the years of 1863-'64, when the excitement of the Alpine gold fields caused many people to emigrate here from all parts of the Pacific Coast in search of the hidden treasure. At that time, and since, many claims have been located and worked, showing rich prospects of gold, silver and copper; but, as the saying is, it takes a gold mine to work a silver mine, and *vice versa*, and as the mines here are of quartz, and to operate them requires considerable capital, which was at that time and since somewhat limited by the owners of ledges and claims, consequently the mines of Alpine are in what may be termed an almost undeveloped state; of which I shall speak of more fully hereafter, the population of the county diminishing as the mining excitement subsided, until the county is at present very sparsely settled, and contains less than one thousand inhabitants.

EXTENT.

The boundaries of the county are somewhat irregular, especially on the north and west, and are about seventy miles in extent from north to south, and about forty miles in width from east to west, embracing an area of nearly 2,000 square miles.

TOPOGRAPHY.

The county is a succession of mountain ranges, with high and precipitous peaks, interspersed with numerous lakes, rivers, creeks and beautiful valleys. Silver Mountain is the highest peak in the county, having an altitude of 10,000 feet above the level of the sea, and is located near the western boundary of the county and about eighteen miles south of Woodford's. The town of Silver Mountain is situated at or near the base of this mountain, from which it derives its name. Round Top is another one of Alpine's towering peaks; it is 10,600 feet high, on the summit of which is located one of the Pacific Coast's signal service stations, which has been under the supervision of Professor Davidson during the past Summer. There are numerous small lakes throughout the county. The water of these lakes are clear, cold, and the most beautiful of all waters. Many of them contain the mountain trout. Of these are Blue Lakes and Caples Lakes in the western part of the county, near the Amador and Hope Valley Wagon Road, which are visited by many people during the Summer season. The county is bountifully supplied with brooks, creeks, rivulets and rivers, many of them heading high up in the mountains, fed by the numerous lakes and the melting snow which keeps them running through the Summer season. Almost all these streams are bountifully supplied with delicious mountain trout. These numerous ravines afford plenty of water for irrigation in the different valleys, which item is looked upon by the ranchers as a great advantage over many other localities where there are not these advantages. The Carson River heads in the southern part of the county, and flows from south to north through the county. It is fed by numerous streams, viz.: the East Fork of East Carson River, West Fork of Carson River, Wool Creek, Silver Creek, Monitor Creek, Smith's Creek, Mogul Creek and Indian Creek. Among these mountains are numerous valleys. The largest and most noted are Diamond, Hermit, Pleasant, Hope, Faith and Charity Valleys.

Diamond Valley lies on the northeastern part of the county, and contains some very rich produc-

tive ranches, producing wheat, barley, hay, oats and potatoes, and as there is no great amount of these cereals and vegetables raised in the county, the farmers of Diamond Valley find a ready home market for their produce at good remunerative prices. The three sister valleys of the county are Hope, Faith and Charity—valleys which are located in the northwestern part of the county, at an altitude of about 7,500 feet above sea level.

These valleys are inhabited only during the Summer months, and then by stock raisers and dairymen. The dairy interest in these three valleys is of considerable importance, and more than 30,000 pounds of butter of an excellent quality is produced annually, which is readily marketed on this side of the mountains in the cities of Carson, Gold Hill, Virginia, and other towns of Nevada, which are much better butter markets for the mountain dairymen than the cities of San Francisco or Sacramento. The merchants of Gold Hill, Carson and Virginia cities also prefer this mountain-made butter from dairymen, whom they purchase of from year to year, and seldom fail in getting a good article, packed in fifty and one hundred pound firkins, for their winter custom. Pleasant valley is near the town of Markleeville, where considerable hay is cut and marketed to the residents hereabouts. There are many other small valleys throughout different parts of the county where sheep and cattle are grazed during the Summer season. The nutritious bunch grass which grows so luxuriantly in those mountainous regions is of an excellent quality, and stock fattens very rapidly upon it. The larger amount of the stock which are grazed in Alpine County during the Summer months are migratory, driven here from adjacent counties.

VALUATION.

The statistics of Alpine County, according to the assessment roll of the years 1878 and '79, show as the value of real estate of the county a total amount of $368,968, with a total amount of real and personal property of $405,039, and of migratory from other counties, the Treasurer's books foot up to the amount of $143,962, of which Amador County furnishes $9080; Mono County, $8,000; Calaveras County, $34,105; El Dorado County, $700; Stanislaus County, $25,711; San Joaquin County, $26,142; Sacramento County, $39,090. The assessment of the same year shows 298 head of horses, 1,639 head of cattle, 3,325 head of sheep, and 19,559 cords of wood, 69 tons hay and 25 tons grain. The number of migratory stock of the same years were: Horses, 219 head; cattle, 2,995 head, and 104,879 head of sheep. The reader will notice from the above statistics that our migratory list is large; consequently, many of the inhabitants of the country during the Summer months are of the migrating class of persons, who spend their Winter months in the warmer climes of the foothills of the Sierras.

SCHOOLS.

The latest school census gives the county only 108 children between the ages of 5 and 17. The apportionment for the present year from the State Treasury is only $63 96. The county is divided into four school districts, each of which has a very comfortable school house, where school is kept during the Summer months.

POPULATION.

The population is small considering the extent of the county, but this is easily accounted for, considering the undeveloped industries and the situation of the county, as there is but a small proportion of its area tillable, and its population principally have to depend upon the mining and timber resources, of which Alpine County will probably have some day a bountiful income of wealth, although there are unoccupied Government lands in the county which might be cleared of its sagebrush by the industrious man, and made to produce grain and hay in a profitable way. But as this county is in her youth yet, we look forth to the future with encouraging prospects to the development of its mines, the improvements of the uncultivated tillable lands, and the time when a large revenue may be added to the county's wealth, from the vast timber forests of fir, tamarack, spruce and pine, which are interspersed in the valleys and on the mountains throughout the county. And as the Comstock mines are reaching out for wood and lumber, their supply from the Lake Tahoe country will soon be consumed, and then no doubt this county will furnish those mines with timber and wood, as Alpine County has a great advantage over many other timbered sections, for transporting wood in drives down the Carson River to Empire, where it is taken from the river and shipped by the Virginia and Truckee Railroad to Gold Hill and Virginia. These wood drives are run during the Spring of the year, while the water is high, and no freight for transportation is paid. There has been many thousands of cords already cut from Alpine's forests, but there is so much timber left untouched that there might be over a million cords of wood cut and shipped down the river. The mining interests of the county have been in somewhat of a dilapidated and undeveloping state for the past few years, up till about eleven months ago, when work was recommenced in our mines with renewed energy, some of which were opened and worked years ago, and as this Spring opens, the mining interests of Alpine are of greater promise, and the people are more encouraged than for several years past. The mining interest is the promise of the future on which largely depends its prosperity. Colorado No. 2, for the last ten months past (the twenty-stamp mill of Colorado No. 2) at Monitor has been running steadily and working in good paying ores of gold and silver. This mine was opened and worked several year ago, but under some financial embarrassments the mine was shut down and mill idle, until last Spring the property changed hands, and the present company commenced work with encouraging prospects, and has made regular monthly shipments of bullion for the past ten months. This company gives employment to over forty men at present. In Monitor District are several well-defined ledges just being opened, one of which is the Lincoln Gold and Silver Mining Company's ledge, located west of Colorado No. 2, and a very promising ledge, although the ore is of low grade, averaging from $6 to $12 per ton. These assays have been made from feeders already struck in the running of their tunnel, which is finished in a distance of 200 feet. The croppings of this location are of mammoth proportions, and so situated that rock from the Lincoln gold and silver mine may be very cheaply worked.

The Olympic Company, of Monitor District, has succeeded in discovering a gold-bearing ledge between solid, well-defined walls, which seems to be related to the quartz bowlders found on Bowlder Hill; those bowlders showing rich in fine gold, caused quite an excitement at the time of their discovery some years ago. Many prospectors searched for the ledge, but were unsuccessful until the Olympia Company made its discovery a short time ago, and now believe that they have found the true origin of these bowlders, and as the advance water-power quartz mill is in close proximity to the newly discovered ledge, which gives it great advantages for the crushing of its ores. There are numerous other claims in Monitor District, which only await capital necessary for their development. Silver Mountain district had considerable notoriety a few years ago as a mining camp, where considerable mining has been done. The advantages of wood and water in this district are excellent. The most noted mines here are the I X L, Exchequer and Isabella G. & S. M. Co. The I X L has been a gold-producing mine, from which over $100,000 of bullion has been shipped. There are two good quartz mills near these mines, only awaiting the developments of the Isabella tunnel, when the new noiseless mill may again commence the crushing of quartz. The Isabella G. & S. M. Co. (limited London capital), under the management of L. Chalmers, is excavating a tunnel, which is at present completed in from the base of the mountain, a distance of

2,300 feet. When completed it will be the longest tunnel in California (6,000 feet) where the Company expect to strike the ledges of the Isabella, I X L, and Exchequer, at a distance of about 2,000 feet from the surface. The company commenced this tunnel about ten months ago with a working force of thirty-five to forty men, running night and day shifts, and excavating an average of over 200 feet per month.

The California Illinois Company, composed of Chicago capitalists, are prosecuting the work in the running of their tunnel, which is now completed in a distance of 1,550 feet. This Company expects to strike some rich rock soon, as the rock found already indicates. This mine is located only a few miles west of the town of Markleeville.

TOWNS.

Markleeville is the county seat of Alpine County, and is located on the banks of the west fork of Carson River, and about eight miles south of Woodford's. It has a beautiful location at or near the base of the mountain on its eastern slope, where almost perpetual snow can be seen looking to the westward. The Legislature passed an Act for its incorporation a few years ago, and soon afterwards a fire company was organized for the protection of the city, but that was in the palmy days of the county, when Markleville was quite a business centre of traffic for the county; now the population has decreased until at present the town contains less than 250 inhabitants. There are two hotels, two stores, school house and many good dwelling houses, some of which are unoccupied at present. The I. O. O. F. have a large two-story frame building; the lower story the county uses for a court-room and offices for county officials.

MONITOR

Is a pleasant village of about 200 inhabitants, and is eight miles southeast of Markleeville, located in a narrow gulch, called Monitor Cañon, on Monitor Creek. It has two large and commodious hotels, two stores, blacksmith and shoe shops, several saloons, with the large and powerful Colorado, No. 2, quartz-mill in her midst, and in fact is a lively little mining-camp. The Monitor *Argus*, P. W. Parker, proprietor and editor, is published here, being the only paper issued in the county.

SILVER MOUNTAIN

Is a small town located on the banks of Silver Creek, at the foot of Silver Mountain peak, and is about eleven miles southwest of Markleeville. This town is in a beautiful location, with a splendid Summer climate, but at times in the Winter it is almost snow-bound and the roads impassible. It is well supplied with stores, hotels, etc., common to other mountain towns.

CLIMATE.

The climate, considering the altitude of Alpine County, is mild and generally very healthful, epidemics and contagious diseases seldom occurring. Causes of sickness are usually local and ascribable to immediate surroundings. The average of temperature in Summer is about 75°, and in Winter about 40°. Although the surrounding mountains may be covered with snow, it seldom lies long in the lower valleys on the eastern slope, and the Spring is early, but liable to frosts.

MINERAL SPRINGS.

In many parts of the county are jets of mineral springs, both hot and cold. The most noted and the only mineral spring in the county where there are accommodations for invalids are situated a short distance west of Markleeville, in Pleasant Valley. They are much resorted to for relief from rheumatism and other diseases. Often the invalid is relieved of his pains from rheumatism after drinking and bathing of its waters for two or three days.

FRUIT.

There is but a small amount of fruit raised in the county, as but few fruit trees have ever been planted; but where fruit is raised, it is of a superior quality. The great want of the people is quantity.

To sum up the chief attractions of Alpine County, she offers labor to the laborer in her mines and wood camps, paying good wages, and presents to the eye of the beholder magnificence of mountain scenery, with the most healthful and delightful Summer climate on the face of the earth.

SUTTER COUNTY.

Sutter was one of the twenty-seven counties into which the State of California was divided in 1849. At that time, however, it comprised parts of what are now Placer and Butte Counties.

BOUNDARIES.

Its present boundaries are: On the north, Butte County; on the east, Yuba and Placer Counties; on the west, Yolo and Colusa Counties; and on the south, Yolo and Sacramento Counties. The county is situated in the Third Congressional, Twenty-fifth Senatorial and Tenth Judicial Districts, in the valley of the Sacramento, the Sacramento River forming nearly the whole of the western boundary, while the Feather River, after forming two-thirds of the eastern boundary, flows through the southern part of the county into the Sacramento.

NAME.

The county was named in honor of General John A. Sutter, its first settler, who, in 1849, had been living for several years upon his estate, known as Hock Farm, on the west bank of the Feather River, then called the Rio de Los Plumas. General Sutter was widely and favorably known, having received with much hospitality at his trading-post, known as "Sutter's Fort," many of the immigrants of 1849-50.

TOPOGRAPHY.

The Buttes, a collection of mountain peaks, are situated in the northern part of the county, rising to the height of over a thousand feet, and occupying an area of twelve by four miles. A number of rich and prosperous farms are situated among the foothills of these mountains, which are almost destitute of timber, but which furnish excellent grazing ground.

The water facilities, for irrigation and navigation, are unsurpassed, comprising the Sacramento and Feather Rivers, and the Bear River, which flows in the southern part of the State into the Feather. With the exception of the Buttes the county is entirely level, and a portion of it, on the Bear and Feather Rivers, is subject to annual overflow. But the farmers settled here have already expended considerable sums in levees, and these tule lands need only to be thoroughly reclaimed to be among the most valuable in the State.

MEXICAN CLAIMS.

While the towns have grown slowly, the county itself has advanced greatly in wealth and population. But a few years ago it presented only slight evidences of permanent settlement and improvement. The only land then thought worth cultivating was that situated along the water courses, and was all claimed under Mexican grants. The actual settlers, therefore, seldom expended much upon permanent improvements, for fear of some future claimant under a Mexican grant. But these difficulties are now removed, and the happy result is apparent everywhere, while the once worthless plains are to-day among the most valuable farming lands.

TRANSPORTING FACILITIES.

The California and Oregon Railroad, touching at Yuba City, passes through the northern part of the county. When the California Pacific Railroad was first finished it ran through the county, crossing the Sacramento at Knight's Landing, in Yolo County, and passing through the tule lands by about four miles of piling, terminating at Marysville. But the flood of 1872 washed away part of the tule section, and the road at present extends only to Knight's Landing.

The Sacramento River is navigated by steamers at all seasons of the year, thus giving the greater portion of the county good market facility by water. Freight steamers run regularly from Yuba City (on the Feather River) to San Francisco, transporting the county products at cheap rates.

DEBRIS.

In 1850, Bear River was a clear and beautiful stream, flowing between wooded and well-defined banks, from the foot-hills of the Sierra Nevada, through some twenty miles of the plains, into the Feather River.

The original channel, however, has been almost obliterated by means of the hydraulic mining carried on at its source, about sixty miles distant, thus filling the stream with the "slickings" from the mines (composed of coarse sand and gravel), to an average depth of twenty feet, and covering the land on each side of the original channel, for an average width of one and one-half miles, to a depth of two feet and more. A levee now crosses the old channel in several places, materially altering the course of the stream.

This portion of the county, densely settled in 1860, is now very thinly-populated, owing to this continual encroachment of debris. Mr. James H. Keyes, who owns a large tract of land on the south side of Bear River, in 1876 instituted a suit in the District Court of the county, and in 1878 was granted an injunction enjoining the miners (the Little York Mining and Water Company) from fouling this river or its tributaries with their washings. But the case was appealed to the Supreme Court of the State, where it yet remains undecided.

SOIL.

Most of the soil of the county is a rich loam, and is capable, with the well adapted climate and the abundance of rains, of producing profitably nearly every product of the temperate and semi-tropical zones. The average yearly rainfall is about twenty inches.

POPULATION.

Sutter has a total estimated population of 6,500, of whom 1,427 are registered voters, and 1,571 census school children.

TOWNS.

The first county seat was established at Oro, a city which existed only on paper, consisting in fact of a bare and treeless tract of land on the bank of the Bear River. A county court house, the first building in town, was erected, being a zinc structure, twenty feet square, with a floor of rough boards, and with apertures, shutterless and glassless, cut for the doors and windows. This house was, however, so intolerably warm, that the following year (1850) the county seat was removed to Nicolaus, on the Feather River, and then, as now, a town of about four hundred inhabitants.

YUBA CITY.

In 1856, the county town was established at Yuba City, where it still remains. This city, founded in 1849, is the most considerable town in

the county, having about 650 inhabitants, and is situated opposite Marysville (in Yuba County), on the Feather River, being fifty miles from Sacramento and one hundred and forty from San Francisco. Surrounded as it is by good agricultural land, it maintains its existence as a small but prosperous town. Its buildings, constructed very generally of wood, include one hotel, several boarding houses, two grocery stores, one drug store, one brewery, four blacksmith shops, and four large warehouses, two of which are owned and operated by the Farmers' Union. There are also a Court House (built in 1872 at a cost of about $25,000), two churches, and a public school building, with competent teachers and an average attendance of 150 pupils.

A large hall is owned by the Masons, but is used by several additional societies (I. O. O. F., A. O. U. W., K. of H., I. O. G. T., etc.), all of which are well attended and in a flourishing condition. Four Granges also meet regularly in Yuba City.

There are also in town the offices of three doctors, three lawyers and the County Surveyor; the Post Office, having four mails daily, and a livery stable and express line.

Among the most attractive of the private residences of Yuba City are those of Dr. N. S. Hamlin, S. J. Stabler and J. H. Craddocks.

The *Yuba City Journal*, Democratic, and *Sutter Banner*, Independent in politics, are published here weekly.

A double gangway bridge spans Feather River, closely connecting this place with Marysville, which, in 1860, was the third town in size in the State, and which is still the principal trading point for this and other northern counties. Communication with San Francisco is maintained by river, and by the California and Oregon Railroad, which passes through Marysville.

SMALLER TOWNS.

The other towns and precincts of note are Auburn, Barry, Bear River, Browns, Brittans, Central, Columbia, Clay, Eagle, Fairview, Franklin, Gaither, Grant, Illinois, Jefferson, Knights, Kirkville, Lee, Lincoln, Live Oak, Marcum, Meridian, Murray, Nicolaus, North Butte, Noyes, Prairie, Pleasant Grove, Rome, Salem, Slough, Sutter, Union, Vernon, Washington, West Butte, Wisship and Willow Pond.

PRODUCTIONS.

No other section of the State contains handsomer or more comfortable farm buildings, which fact alone is suggestive of the prosperity of the county. The climate is equable and favorable to continuous labor, the nights being cool in Summer as well as in Winter. Grain and fruits are principally raised, three car-loads of fruit, which was wrapped in paper and carefully packed in boxes, having been shipped from Briggs' Ranch, on the line of the railroad, to Chicago already this season. The adobe lands west and south of Briggs' yield 30 to 40 bushels of wheat to the acre, and the grain receipts at the Farmers' Union Warehouse, in Yuba City, for the first week of the present month show 1,490 tons. The following statement will give an idea of the annual amount and kinds of the most important products. There are 281,815 acres enclosed, and 202,215 acres cultivated (there not being any Government land remaining in the county):

Wheat, 91,266 acres, yielding	1,368,575 bushels.
Barley, 25,000 acres, yielding	450,000 bushels.
Oats, 230 acres, yielding	4,600 bushels.
Corn, 1,871 acres, yielding	45,425 bushels.
Buckwheat, 1,200 acres, yielding	36,300 bushels.
Beans, 175 acres, yielding	5,250 bushels.
Potatoes, 625 acres, yielding	1,875 tons.
Sweet Potatoes, 325 acres, yielding	1,208 tons.
Onions, 12 acres, yielding	600 bushels.
Hay, 14,925 acres, yielding	11,715 tons.
Hops, 13 acres, yielding	10,1.5 pounds.
Sugar beets, 10 acres, yielding	100 tons.

There are also in the farmers' stock 75,182 pounds of butter, 20,387 pounds of cheese, 160,185 pounds of wool, and 3,875 pounds of honey.

The value of the fruit crop is estimated at $270,000. There are 863 acres in grape vines, from which 7,000 gallons of wine are annually made.

The live stock comprises 4,923 horses, 575 mules, 4,465 horned cattle, 30,087 sheep, and 9,943 hogs.

The improvements include one 86-horse power grist mill, grinding 2,078 bushels of corn; one irrigating ditch, used over 480 acres, and valued at $300, and 22 miles of railroad, valued at $110,500.

The assessed value of real estate (Sutter contains 576 square miles), about $3,000,000; assessed value of improvements and personal property, in the neighborhood of $4,000,000.

GAME.

The principal game in Sutter County consists of quail, dove, snipe, rabbit, and, in the Fall and Winter, geese and ducks, while the latter come by thousands to the large wheat fields in search of food. A few deer are still harbored by the Buttes. In the Sacramento River are salmon and numerous other, and less important, fish. Trout are found in abundance in the head waters of all the streams.

In this county, as in others, the price of land varies according to location and improvements, and investments depend for their success upon the energy and ability of the purchaser. Sutter County presents favorable inducements to enterprising and competent settlers, and those desiring to locate will find it of advantage to examine the same.

FRESNO COUNTY.

Fresno was organized in 1856, and is one of the largest counties of California, being about one hundred and fifty miles long and sixty-five miles wide, and containing nearly ten thousand square miles. It is bounded by Benito, Monterey, Mono, Inyo, Tulare, Merced and Mariposa counties.

TOPOGRAPHY.

It is situated in the great San Joaquin Valley, or, rather, it crosses the valley, extending down the Sierra Nevada Mountains, on the east, across the plains of the San Joaquin, and up to the summit of the Coast Range, on the west. Thus a variety is afforded to the county which renders its resources almost unlimited, and, while it harbors the miner, the manufacturer and the herdsman, gives the farmer the very best field for his labors.

Both the mountain ranges are wooded, some of the finest timber in the world being found upon the slopes and in the cañons of the Sierra Nevada. In the county are two groves of big trees, one in the northeast and one in the southeast. Both mountain ranges contain some lofty peaks, among them being San Carlos, San Benito and Centre Peaks, in the coast mountains, and, in the Sierras the Dome Mountains, 9,825 feet; Mount Abbot, 12,500 feet; Mount Brewer, 13,825 feet; and Mount Gardner, 14,000 feet. The valley portion of the county, that between the foothills of the two mountain ranges, nearly square, and contains about 4,000 square miles of rich land, almost all of which is capable of being irrigated.

WATER SUPPLY.

The San Joaquin River takes its rise in this county, among the snows of the Sierra Nevada range. After flowing about fifty miles in a westerly direction, this river suddenly changes its course, and flows north, on its way to the Pacific, which it reaches by the way of Suisun, San Pablo and San Francisco Bays. At the point of turning to the north, this river unites its waters with those of Fresno Slough, the outlet of Lake Tulare, and, during a part of the year, is navigable thus far, being two hundred and twenty miles by river from Stockton. The Chowchilla and Fresno Rivers also rise in the Sierra Nevada, flowing westerly into the San Joaquin; and, in the southern part of the county, King's River, a large stream from the same source, flows westerly into Lake Tulare.

IRRIGATION.

Irrigation is all that is required to make every acre of this county a garden-spot; and there is, fortunately, an abundance of water to be used for this purpose. Besides the large rivers and the numerous lesser streams, which supply every facility for irrigation, several large canals have been constructed, by means of which thousands of acres are provided with a perennial water supply. A number of artesian wells have also been bored, and streams of running water thus obtained. A canal, in the course of construction, already extends several miles from the west bank of the San Joaquin, by means of which several thousand acres are irrigated, producing large crops of wheat, barley and alfalfa. The land, under the system of irrigating ditches, is particularly adapted to the growth of alfalfa; and large tracts, once considered almost worthless, now irrigated and planted with it, are held as very valuable.

This alfalfa, it may be said in passing, is a sort of clover, which is sown in February. The first year it is cut about three times, each cutting yielding from one to one and a half tons per acre. When two or three years old each cutting yields two tons or more per acre, and it is cut five or eight times a year, the rule in Fresno being to cut it every six weeks. The market price depends upon the season, but ranges from $5 to $10 per ton.

TRANSPORTING FACILITIES.

The soil, generally speaking, is a dark, sandy loam, admirably adapted to the growth of wheat, and producing grain and potatoes, in many places, without irrigation. But the want of a cheap means of transportation retarded, for many years, the agricultural development of the county, and, at first, stock raising and herding, and afterward sheep raising, were the principal occupations of the inhabitants; cattle, horses, sheep and hogs constituting, until within a few years, the exports of the county. There are still over 500,000 sheep in the county, but it is fast becoming an agricultural district, the construction of the San Joaquin Valley Railroad, which extends through the central valley portion of it, having given a new impetus to farming pursuits. During the last five years, the unoccupied land has been rapidly taken up by settlers, intent upon the permanent development of the county. The Railroad Company has immense tracts for sale in Fresno, all capable of being highly cultivated, a number of persons having within a few years bought land from the railroad at prices which were less than one-tenth of what they now consider their farms worth.

PRODUCTS.

Wheat, corn, oats, barley, potatoes and alfalfa are the chief productions. Any crop, however, is successfully grown here, that can be raised in the Middle, Eastern or Southern States, including tobacco, coffee, peanuts and figs. Sweet potatoes, beans, peas, onions, beets, radishes, carrots, parsnips and tomatoes all thrive here. Garden vegetables, in fact—which, however, require irrigation—all attain a remarkable size and degree of perfection.

The orchard fruits of the temperate zone, the apple, peach, pear, quince, etc., are all cultivated, and by their side thrive the oranges, lemons, figs, limes and pomegranates of the tropics. Fresno ought, in time, to become the orchard of the State, and to export large quantities of fresh, dried and preserved fruits, such labor being light and otherwise adapted to the weather in Summer, being a reason in addition to the peculiar advantages Fresno possesses for raising the fruit.

Grapes grow to a perfection here, for wine and for raisins, hard to be excelled, one acre of good vines yielding from $100 to $200 per annum, the profit, per acre, being perhaps a little greater from raisins than from wine.

The cultivation of cotton has been a success throughout the valley, averaging half a bale to the acre, but the present cost of raising it prevents its cultivation from being a financial success.

Tobacco, hops and the castor bean thrive well; Egyptian corn grows luxuriantly, and millet and sorghum may be cut from three to five times from one planting. Timothy and lawn grass, red

and white clover, all grow, but have been superseded by alfalfa. And it is claimed that any shrub which grows in Florida can be raised here.

TEMPERATURE.

The Autumn corresponds with the Eastern Indian Summer, and the Winter with the Atlantic Coast Spring, with but few exceptions. The thermometer, during this latter season, averages about fifty degrees during the nights, the days being much warmer. The Summers, speaking from a Californian standpoint, are exceedingly warm.

Some cases of fever and ague have been known to be contracted near the river, but it is stated that this disease is successfully avoided by all those who sleep habitually at a reasonable elevation from the ground, and are careful not to drink stagnant water, or water containing an excess of vegetable matter, during the Summer months.

The rainfall at Tulare averages six inches per year.

TIMBER AND MINERALS.

Lumber is abundant in the mountains, and there are seven sawmills in the county, their number being bound to increase with its growth.

NEW IDRIA,

One of the most productive quicksilver mines in the State, is situated in the western part of the county, in the Coast Range; while there are some paying quartz mines, besides placer diggings, which have been valuable, in different parts of the county. Copper is found in the foothills of the Sierra Nevada, and coal and iron abound in the Coast Range. Granite, slate, marble, lime, coal, lead and petroleum have all been discovered within the county limits.

FRESNO CITY.

Millerton, an old mining town in the foothills of the Sierras, was the county seat until the opening of the railroad, when it was removed to Fresno City, a station on the line. This town is centrally located in the valley, on the San Joaquin branch of the Central Pacific, twelve miles from the San Joaquin and twenty miles distant from King's River. It is the trading and distributing point for a large tract of country, east and west, which is rapidly filling up. When located, only a few years ago, there was not a building near the site—a barren, sandy plain, having now its city of 1,500 inhabitants, which is gradually building up in a very substantial manner. Among the public buildings are a Court House, erected at a cost of $60,000, and a $10,000 public school building, both handsome edifices.

The average monthly cash receipts at the railroad station in Fresno City are $5,500, about four-fifths of this amount being received for freight, and one-fifth realized from the sale of tickets.

Kutner & Goldstein occupy a large brick store, where they do a heavy mercantile business, their annual sales averaging $120,000. They have a warehouse of 1,000 tons capacity, and their annual shipments of wheat are between 1,500 and 2,000 tons. This firm carries on a banking business in addition to dealing in feed, grain and farm produce, and in general merchandise, including every variety of goods in demand by the settlers.

Fresno City has also a County Hospital, Water Works, Lodges of Odd Fellows, A. O. U. W., and Good Templars, a literary society, and a library, and three weekly papers, the *Republican*, the *Fresno Expositor*, and the *Review*.

There is in town about 400 dwelling houses, with new houses being constantly constructed; a public school with efficient teachers, a Methodist Church, 4 hotels, 1 restaurant, 4 stores of general merchandise, 2 drug stores, 2 variety stores, 1 clothing store, 3 blacksmith and wagon shops, 2 shoemakers, 1 cabinet-maker, 2 barbers, 1 paint shop, 1 bakery, 3 carpenter shops, 1 dentist, 1 windmill factory, 2 physicians, 13 attorneys, 1 dressmaker, 2 meat markets, 1 grist mill and 1 lumber yard.

Fresno City is a place of great promise, on account of the vicinity of the two rivers, the San Joaquin and King's, making all of the land susceptible of irrigation. A large number of acres are already made very productive and valuable by the extensive system of irrigating ditches which has been constructed in this vicinity, first-class land bringing $20 and upwards, and second and third-class choice lands bringing $5 and $10 per acre.

COLONIES.

There are six colonies planted and being planted within from three to six miles from Fresno City, the Central California Colony being only three miles distant from the town. Here fifty or sixty families are already located, on a level, productive tract of land, having comfortable homes, a school house and other conveniences. The growth of trees and shrubs, but more especially of alfalfa, during the few years since the settlement was founded, is something remarkable. The originators and managers of the scheme have constructed a complete network of ditches for the benefit of the colony, the price of the water right being included in the sum paid for the land. The lots contain twenty acres each, and are sold on the instalment plan, twenty per cent down and five years' time in which to pay the remainder.

The grapes grown here are claimed to be the best in the State, the raisins, in some instances cured and packed by lady land-owners, bringing the highest price in the San Francisco market.

WASHINGTON COLONY

Is five miles from Fresno City, and contains 7,000 acres of productive land, having now twenty-five or thirty families settled permanently. Its lots contain ten and twenty acres each, and a town, one-half mile square, centrally located in the colony, is laid out. The colonists have a school, and are employed in raising grapes, other fruits and alfalfa. The ten-acre lots sell for $400 and $500, and the twenty-acre lots from $500 to $700, on the instalment plan.*

TOWNS.

The towns and precincts of importance are Arcola, Auberry Valley, Big Sandy, Centreville, Cherry Hill, Chowchilla, Clark's Valley, Daulton, Dry Creek, Duke, Fancher, Fair View, Fresno, Fort Washington, Hazelton, Hill's Valley, Kingsbury, Kingston, Lake, Liberty, Modesto, Mendocino, Mechanicsville, Mill Creek, Millerton, Mississippi, New Idria, Orange Centre, Panoche, Pleasant Valley, Sycamore, Washington and Webster.

STATISTICAL.

The area is 10,000 square miles, only about one-fifth of which has been bought by private ownership from the Government; and comparatively only a very small portion of the county is enclosed and under cultivation. The average value of the land is $3 or $4 per acre. There are 59,855 acres enclosed, and 63,869 acres cultivated. There are planted in wheat, 32,944 acres, yielding 296,860 bushels; barley, 24,652 acres, yielding 327,960 bushels; hay, 5,816 acres, yielding 6,328 tons; grapes, 239 acres; corn, 576 acres.

There is an annual yield of 2,000,000 pounds of wool. There are 5,368 horses, 460 mules, 28,476 horned cattle, 686,652 sheep, 5,180 goats and 18,532 hogs in the county. Under the head of improvements are one water-power grist mill, one quartz mill, and two steam-power saw mills, from which latter 1,500,000 feet of lumber are annually sent out. There are three irrigating ditches, valued at $100,000. There are sixty-one miles of railroad in the county. The assessed value of real estate is a little over $5,000,000; the value of the improvements thereon over $5,500,000; the assessed value of personal property is a little over $2,000,000; making a total of nearly $13,000,000.

The estimated population is 9,000, of which 1,889 are census school children; 1,671 are registered

voters, the county returning a Democratic majority at the last State election.

* NOTE.—In addition to the above, we append the following, written by Mr. C. A. Henry:

On the north side of the town of Fresno, the county seat, and distant about six miles, is the Church Colony and also the celebrated "Eisen Vineyard." This vineyard, one of the finest in the State, contains 640 acres, nearly all of which are under a high state of cultivation. A large, commodious wine cellar on the premises is quite a favorite resort of the Fresnoites in the hot season. About two miles from Fresno, also on the north, is the "Scandinavian Irrigated Colony," organized in November, 1878, by Charles A. Henry, of San Francisco. This colony contains 5,480 acres, divided, as the others are, into twenty-acre lots.

Although considerably younger than its sister colonies, it has made considerable headway over most of them. This is partly due to the settlers, the majority of whom are Scandinavians, and partly to the fact that this colony was sold at a price considerably below the price charged elsewhere. Although, as the name implies, it is Scandinavian, one finds here by the side of the hardy sons of the north the enterprising Yankee, the phlegmatic German, the rollicking son of Erin, and the sturdy Scot. In fact, almost all parts of Europe and this country find their representatives.

Take all these colonies together, they have drawn to Fresno an enterprising, industrious class of people, people that would be an honor to any community. They have their churches, schools, social and literary societies, and thus by living together in a colony many of the otherwise objectionable features of farming life are lost.

There is in this county plenty of room for more settlers; and land in abundance, suitable for irrigation, may be had here, either for colonies or individual settlers, at prices ranging from $2 50 to $30 per acre.

As there is no other county in the State where so many advantages can be obtained in any one place, Fresno County will doubtless enjoy an era of unprecedented prosperity, together with a large influx of immigration.

SAN DIEGO COUNTY.

San Diego, at the extreme south of the State, is a large county, and contains a great extent of fertile land. It is bounded on the north by San Bernardino, on the east by Arizona, or rather by the Colorado River; on the south by Lower California, bordering for about 175 miles upon this Mexican territory; and upon the west by Los Angeles County and the Pacific Ocean.

TOPOGRAPHY.

The county may be considered to be naturally divided into three sections. The first of these divisions is that part lying east and southeast of the San Jacinto Mountains, and is, in truth, only so much Colorado desert, being a great waste, in many places below the sea level, and characterized by granite points, sand hills, dry lakes, mud volcanoes, hot springs, a growth of cactus and intolerable heat.

The second division of the county lies west of the San Jacinto Mountains, and comprises a series of valleys and plains, rising in the west to the foothills of the Coast Range. Thousands of sheep and cattle graze here, and there is an extensive growth of timber upon the higher lands. Little was known of this region until recently, but those who have examined it, find that it is equalled in richness of land and diversity of resource by but few portions of California.

The third section of this county lies between the foothills of the Coast Range and the ocean, the surface of the country being what is known as *mesa* or rolling land, and valleys, which are well watered during more than half the year. Their streams, however—the San Diego, San Bernardino, Tia Juana, Sweetwater, San Luis Rey, and Santa Manzanita—though of good size, are pretty generally dried before the Summer is passed. Fully two-thirds of the population of San Diego reside in this section of the county, and nearly all of the improvements are to be found here.

The most important topographical feature of the county, however, is the Bay of San Diego, which is one of the few natural harbors of the world. It is a fine sheet of water, twenty miles long by three wide, almost landlocked, having a safe entrance, and giving free anchorage to the largest vessels.

SOIL.

In the fertile portion of the county, or in the two sections west of the desert region, are more than thirty valleys, from two or three, to fifteen or twenty miles long, embracing from a few hundred to upward of twenty thousand acres. Three valleys are of an exceedingly fertile, dark, alluvial soil, while the rolling lands are of a reddish earth, underlaid with a stratum of clay or adobe. These rolling lands were formerly supposed to be of little value, but recently it has been proved by experiments that with proper cultivation they are among the best agricultural lands in the State, the under stratum of clay serving to retain the moisture, thus rendering less irrigation necessary than upon the adjoining bottom lands.

COMMUNICATION.

The Southern Pacific Railroad has been carried through the county, traversing the desolate region east of the San Jacinto Mountains. It enters the county just below the San Gorgonio Pass, striking the foot of the snow-capped peak of San Jacinto, following the great Coahuilla Valley, which lies in the northeastern part of the county, between the San Jacinto Mountains and the San Bernardino range; and then passing over the desert in a southeasterly direction to Fort Yuma and the Colorado River, making 165 miles of rails in the county. San Diego City is not included in this course of this railroad, but the Atchison, Topeka and Santa Fe Railway Company are now (1882) rapidly laying their rails eastward, and ere long a connection will be made. In the neighborhood of Colton, in San Bernardino County, with the Southern Pacific Railroad for the north and east. With this connection, San Diego will occupy an important position as the principal seaport for a great stretch of country, and will doubtless become a large metropolis as the terminus of the above-mentioned railroad. This road, in Arizona, will connect with the branch from Guaymas, Mexico, now in course of construction. The principal mover on the part of San Diego in this important matter is Mr. Frank Kimball, of the National Rancho, who has donated a large tract of land to the Company. The rail-

road will have altogether the use of about 1,200 acres, and the energetic citizens have raised in addition about $30,000 for the purchase of necessary rights of way.

The Pacific Coast steamers touch regularly every five days at San Diego, and there are daily stages connecting with San Francisco by the way of Los Angeles and Santa Ana, this being an excellent line in every respect, under the personal supervision of the owner, a veteran stageman. A stage is also run once a week to Fort Yuma.

IRRIGATION.

Irrigation is at present in advance of railroading and every other interest, the great need of San Diego County, for it is all that is wanted to make fertile and productive, in other words, very valuable, immense tracts of land now almost worthless, including the whole Coahuilla Valley and almost all of the country along the Colorado River. Several careful examinations have been made and sites selected for the construction of ditches and canals, but so far this is about all that has been accomplished.

PRINCIPAL RESOURCES.

The settlers in San Diego County formerly engaged extensively in sheep-raising and in lumbering; but, as in so many of the other counties whose resources are gradually being developed, agriculture is becoming the leading industry, the recent rate of progress in this occupation being astonishing. The middle portion of this county, particularly, is beginning to be taken up by farmers and breeders, since the fertility of its soil was discovered. Mining at one time largely occupied the population of the county, but farming and orchard culture prove the more profitable employments; and millions of people can be, and, doubtless, at some time will be, sustained in comfort and prosperity in this favored county, when all these remote and sparsely inhabited, but rich and fertile portions of our State, come to be claimed and worked to their best advantage.

FARM PRODUCTS.

The statistics show that last year the yield from the soil in this county from farm productions, fruit and honey, was more per capita than in any other county in the State. Having so warm and favorable a climate, trees and plants of every description have a wonderfully rapid growth, in this fast growth of trees and the early maturity of crops surpassing Riverside, Orange, San Gabriel Mission, and Los Angeles Valley, all so well known as ranking high in this respect.

It is claimed that the profits per acre from the wheat crop are larger in this than in any other county, in Cajon Valley, twelve miles back of San Diego, fifty-seven bushels being raised to the acre on a farm having 7,000 acres planted in wheat, and the statement being made that in this vicinity no man need ever lose a crop. On this same ranch there are over eighty acres in fruit, including all the varieties known in northern and semi-torrid latitudes, 2,000 Muscat vines and 600 orchard and walnut trees having been planted during the past year. Almond trees here grow six and eight feet in a year, and two-year-old pear trees bear large, fine fruit.

Ten acres of olives make a splendid showing on this ranch, as does the large orange orchard. San Diego, as an orange belt, ranks with San Bernardino and Mission San Gabriel, the two localities in the State of superior matured trees.

On this ranch, just mentioned, in the Cajon Valley, three wells, with windmills, supply all the water necessary for those crops requiring irrigation.

NATIONAL RANCHO,

Or Rancho de la Nacion. This tract of land has a frontage of about six miles on the bay of San Diego, and extends back seven miles, embracing twenty-seven thousand acres. In surface it is slightly undulating, gradually rising from the bay, and diversified with plains, rolling hills and valleys; the soil, all good quality, varying from heavy adobe to the lightest loam. The finest of garden vegetables, melons and sweet potatoes grow here, remarkably large and early matured, tomatoes ripening every month in the year, for years in succession, on the same vines. One piece of ground will yield five crops of Irish potatoes in thirteen months, and sweet potatoes have been raised weighing from fifteen to twenty-five pounds. All berries do well, the strawberry excelling, this fruit attaining a very large size. For raisins the table varieties, known East as hot-house grapes, are raised here with less trouble and two or three hundred per cent more profit, than a field of corn there. Peaches grow finely, there never having been a failure in the fruit crop, nor any trouble at all with worms. Almonds are of a fine quality and grow rapidly, beginning to bear at two years from the bud. English walnuts, limes, lemons and oranges do equally well. There are over 20,000 orange trees now growing here, some on the high *mesa* lands, and all showing a splendid growth, six-year-old trees bearing two hundred fine oranges.

OLIVES.

The olive excels in every respect, in rapid growth, early maturity and yield, all other trees raised here, its natural home seeming to be on these rolling or mesa lands. It is raised from cuttings as easily as grapes or willows, and bears the second year, the third year the yield being considerable. The finest olive orchard in the United States is at the old Mission of San Diego, and a single tree in this orchard has produced 192 gallons of fruit at one crop, which, selling for 80 cents per gallon, wholesale, realized $150. Eighty to 100 olive trees are set to the acre, and one man can start the cuttings and take care of twenty acres. As age increases the yield and the trees are long lived, the profits become enormous.

Shade and other ornamental trees do finely in San Diego County—the eucalyptus, acacia, pepper and Monterey cypress being among the most rapid growers.

BEES.

In the Fall of 1869 the first bees were brought into this county by one of the most scientific and best apiarians in the country, the result being the development of this important industry to a most praiseworthy extent. In 1875 there were 10,000 stands in the county, and in 1880 there are 26,000. Mr. Harbison, the pioneer apiarian, has six apiaries and over 2,000 hives, employing twelve men continually. He produced 100 tons or 200,000 pounds last year, and shipped East for himself and others twenty car-loads. The foothills in this county are probably the best bee range in the United States, and harbor many apiaries.

SAN DIEGO.

There are, in reality, two San Diegos, the old adobe town with its tile-covered roofs being situated four miles inland, and quite distinct from the more recently erected city, with its expensive and substantial buildings, and wide streets leading down to commodious wharves upon the bay.

This bay was first entered by a white man in 1542, by Cabrillo, who called the place San Miguel Viscaino. The second visitor, in 1602, remained here ten days, and changed the name to San Diego. In 1769 the Dominicans, under Father Junipera Serra, made the first permanent settlement of California by establishing the San Diego Mission, which ancient monument of early days is still standing, about five miles east of the town. Father Junipera describes this "goodly country" in glowing terms, speaking of vines hung with

grapes, and roses "like the roses of Castile." The Indians, however, were naked and degraded, subsisting on seeds and by fishing, going a considerable distance to sea in their rush built or tule canoes.

San Diego proper, or the new town, is the county seat, and is a beautiful city, pleasantly situated upon the bay, and destined to be a great one, when the railroad, at some future day, and a further development of the natural advantages of the adjacent country, shall make it a large commercial centre. It is distant from San Francisco from 482 to 607 miles, according to the route travelled, by land or by water. The city has a fine system of water works, a weather signal station, a military station, and a Custom House. The Horton House, a fine hotel, is well kept. The San Diego *News*, daily and weekly, and the daily *Union* and *World*, are published here; and there are Presbyterian, Methodist Episcopal, Episcopal, Baptist, Unitarian and Catholic churches in town.

The fisheries of the port and vicinity are of great importance, whaling being carried on off the entrance to the bay. This entrance is easily distinguished from the sea, and is safely passed, there being at all times twenty-two feet of water over the bar.

There are excellent public schools, in good condition, in city and county, besides two select schools in the city—Miss Sarah Gunn's San Diego Academy and Mrs. Gates' Point Lomo Seminary.

Its salubrious climate, which is very mild, and certainly the most equable in the world, has made San Diego a noted sanitarium. It has a very exceptionally low death rate, and in midwinter the tuberoses are seen blooming in the gardens.

BANNER

Is a new town about fifty miles northeast of San Diego, in the San Felipe Cañon. Gold mining was commenced here in 1871, and the place grew rapidly. It has now good hotels, schoolhouses, a Post Office, etc. The town is situated at a great elevation, and has a splendid climate. Grain, fruit and vegetables of all kinds grow in the neighborhood.

JULIAN

Is a very pretty mining town, forty-five miles northeast of San Diego. It is situated among thickly wooded hills, in a grazing and agricultural section. Its scenic features are magnificent and its climate unsurpassed.

FORT YUMA.

One hundred and ninety-five miles east of San Diego is the extreme town of the State. The fort was established in 1849, when the territory across the river belonged to Mexico. The post is on the right bank of the Colorado, 180 miles from its mouth, and directly opposite the mouth of the Gila. The fort is, from its position, one of importance, though it is generally occupied by a very limited number of soldiers. The town of Yuma, formerly Arizona City, is on the opposite bank, in Arizona, the river being crossed by a ferry. Yuma is about the hottest place on the coast, the sun being unclouded some 350 days out of the year.

OTHER TOWNS

And precincts of San Diego County are: Alpine, Atkinson, Bear Valley, Ballena, Bernardo, Cajon, Descanso, El Casco, Fall Brook, Forster City, Hope, Homestead, Jamul, Jamasha, Lyons, Monument, Malava, Mount Fairview, Mountserratte, Milquettay, National City, Otay, Oak Grove, Potrero, Pala, Poway, San Dieguita, San Jacinto, San Luis Rey, Spencer Valley, Sweetwater, Valley Centre, Tia Juana, Temerula, and Viejas.

STATISTICAL.

Two thousand five hundred and thirty-seven acres of land are enclosed, and 14,039 acres are cultivated in San Diego County:

	Acres.	Yielding.
Wheat	6,225	104,209 bush
Barley	2,689	62,748 bush
Rye	72	1,205 bush
Corn	294	6,485 bush
Beans	15	151 bush
Potatoes	40	58 tons
Sweet Potatoes	7	7 tons
Onions	2	32 bush
Hay	4,597	5,613 tons
Tobacco	1	300 lbs

The agricultural products also embrace 14,130 pounds of butter, 2,900 pounds of cheese and 495,420 pounds of wool.

The value of the fruit crop is estimated at $4,035, there being, in addition to the ordinary orchard trees, 417 lemon, 271 orange and 432 olive trees, in matured orchards. There are 216 acres in grape vines, from which are annually made 4,240 gallons of wine and 3,840 gallons of brandy. There are also in San Diego two breweries, which make annually 45,000 gallons of beer.

The live stock numbers 5,202 horses, 555 mules, 18,362 horned cattle, 191,174 sheep and 2,075 hogs.

The improvements include 1 steam-power grist mill, making 6,735 barrels of flour, and grinding 36,548 bushels of corn; 7 saw mills, 6 steam and 1 water-power, sawing 1,875,120 feet of lumber and making 70,000 shingles; 6 quartz mills, and 1 railroad, 165 miles in length.

The assessed value of real estate is, in round numbers, $3,000,000; that of improvements, $440,000; that of personal property, $100,000, making a total of $3,500,000.

San Diego has a population of 13,278, of which number 4,280 are registered voters, and 1,693 are census school children. The county went Democratic, by a slight majority, at the last State election. San Diego was organized in 1850, and contains 15,156 square miles of land, all but 600 square miles being government land, and the average value of land in the county being from $1 25 to $2 per acre.

MONO COUNTY.

Mono was organized in 1861, with Aurora, now included in Esmeralda County, Nevada, as the county town. It is a long and narrow county, its length lying along the boundary line between California and Nevada. It contains 4,176 square miles, all but eighty of which are still Government lands, the average value of land, however, being $3 or $4 per acre.

BOUNDARIES.

The length of Mono runs from northwest to southeast, the State of Nevada, or rather the boundary line between that State and California, bounding it on the north and east. Inyo County is on the south and Fresno, Tuolumne and Alpine on the west.

TOPOGRAPHY.

The western portion of the county lies among the Sierra Nevada Mountains, the heights being clad in snow, and the slopes of the range covered with forest trees. Among the highest peaks in the county are Mt. Dana, 13,627 feet high, Mt. Lyell, 13,217 feet high, and Castle Peak, 13,000 feet high. Among the mountains in the western part, particularly in the vicinity of Bridgeport, to the north, are a large number of valleys, which constitute the agricultural or cultivated lands of the county.

The eastern portion of the county, which is usually spoken of as a strange, mysterious country, is of a desert-like, volcanic character, abounding in salt pools, alkali and volcanic table lands, the characteristics of this portion of the county being significantly indicated by some of the local names, such as Hot Springs, Geysers, Sulphur Springs, Black Lake, Soda Pond, Volcanoes, Obsidian Mountain, Deep Cañon, Volcanic Tableland, Red Crater, Adobe Meadows and Oasis.

MONO LAKE.

Mono Lake, situated in the centre of the county, is about fifteen miles long by ten miles wide, its waters being a somewhat unusual compound, various chemical substances being found in solution in them. This lake has the appearance of having once been the scene of volcanic action; the country surrounding it, as Bodie, Aurora and Benton, abounding in minerals. A number of volcanic cones having extinct craters lie to the south of the lake, and a great portion of the formation of the district may be considered volcanic; debris, consisting of porphyry, granite, lime-stone, and a remarkably pure obsidian, while deposits of lava are found at Aurora and Table Mountain. The fires of the ancient volcanoes may not yet be all extinct, for upon the islands in the centre of the lake jets of hot vapor escape, and there are a number of boiling springs of water.

The great bluffs and rocky ravines of the Sierras come almost to the western shore of the lake, while upon the western side salt deposits and lines of drift-wood mark the plain, showing very distinctly what were the former more extensive shores of this sheet of water. For upon the bluffs of the western side are water marks, which make it seem highly probable that the waters were once almost a thousand feet above their present elevation, spreading out over the plains to the east to form a great inland sea.

The lake receives a number of small streams, but is without a perceptible outlet. Owens River in the south, which takes its rise in a high peak of the Sierras; Mt. Kitten; and Walker's River in the north, being the principal streams in the county; the one passing through the southern part of the county into Inyo, the other continuing its course, after rising in Mono, to the State of Nevada.

SCENERY.

In picturesque variety and grandeur, the scenery in the mountainous region of this county surpasses many of the celebrated views in the Alps. Some standpoints above the western shore of Mono Lake are very grand, the mountains rolling off, one beyond the other, to the horizon, snow which never melts being upon the highest summits, while the pine forests form a dark fringe upon the outlines of the less lofty ranges.

It is predicted that tourists will eventually extend their trip to include with Yosemite and the Big Trees a portion of this mountainous scenery of Mono County, when the tour will, indeed, be unsurpassed in natural features by any similar journey in the world.

TRAVELLING FACILITIES.

There are comparatively few roads as yet in the county. One, by way of which the mail is carried, leads from Aurora, Nev., through Blind Springs and Owensville, in Mono County, to Independence, Inyo County. A wagon road, which cost a large amount of money, has been constructed from Bridgeport, the county seat, over the mountains by way of the Sonora Pass, to Stockton. Bridgeport may also be reached by way of the Central Pacific Railroad and Aurora; The Carson and Colorado Railway opened 150 miles of its line to Bellville January 1, 1882, and from the station called Hawthorne (100 miles from Mound House, on the V. & T. R. R.) a stage connection is made for Bodie. The V. T. road also propose an extension to Aurora, and traveling facilities are improving rapidly.

RESOURCES.

The eastern part of the county, which has been mentioned as of an alkaline nature, with volcanic traces, and which is little known and almost entirely unimproved, yet without doubt possesses much undiscovered richness, of a mineral character and otherwise, which will yet be developed.

The western portion, among the wooded slopes of the Sierras, contains a great number of valleys whose soil and other advantages adapt them for grazing and agricultural purposes. At Bridgeport, which is situated in the northern part of the county, on the eastern fork of the Walker River, there is an extensive valley of this fertile nature, known as Big Meadows, and from whose farms a considerable country around is supplied with hay and vegetables, while flour, barley, corn, hay, beef, and other staple articles are produced in abundance in the Adobe Meadows District. There is also considerable rich alluvial land along the streams that empty into Mono Lake, yet farming is necessarily limited by the extreme elevation of the county, many grains and vegetables not being sufficiently hardy to be successfully cultivated. Fruit trees do not do well in the county, but honey

is produced from the flowers, about five hundred pounds being averaged annually.

Fifteen thousand acres are made productive by means of irrigation, and the grazing and agricultural interests are, on the whole, increasing, but the lumber trade is destined to be one of even greater importance, there being already several saw-mills at work among the forests near Bridgeport. Nut pine, yellow pine and tamarack are abundant, the former being used for fuel, and the two latter for building purposes. The Mono Lumber Company has secured a valuable tract of timber land south of Mono Lake, with a view to furnishing lumber to Bodie, where the price has been very high. The timber will be carried by flumes to Mono Lake, floated across the lake, and then conveyed by a good road to Bodie, which town will be greatly benefited by the enterprise.

However, the wealth of Mono County is, of course, in its minerals—gold, silver and partzwick, with traces of copper, iron, zinc, jasper, chalcedony, and other metals and stones being found, and a great number of silver veins in different portions of the county being in the process of development, the principal mining districts being Bodie, Blind Springs, and Castle Peak. Mills and reduction works have been established, and the yield from the silver ledges of the county, already considerable, promises to be greatly increased in the future, when the management shall have become more experienced and economical.

Gold is found in the county equally with silver, the Bodie being a gold mine, the quartz yielding also a small percentage of silver. The mines are especially fortunate in knowing no lack of fuel and water, the latter being supplied in sufficient quantities by living springs.

When the agricultural and timber interests are considered, in addition to the mining advantages, it becomes evident that Mono County will yet be much more thoroughly developed, and her population augmented by the establishment of numerous permanent and prosperous homes.

BODIE.

Bodie was originally prospected in 1859 by Bodie, or rather, Body, and three companions, who pushed on from Monoville, which was being worked as early as 1857, being one of the first placer mining districts located east of the Sierras. W. S. Body came to Mono from Sonora, Tuolumne County, but he was a native of New York State, of Dutch descent, and of an easy, lazy, not at all energetic temperament. He lost his life during this Winter at Bodie, in the midst of a prolonged snow-storm. Two of his companions of this trip are still living, neither of them, however, any richer for their discovery of this mining district, its wealth being little guessed by them at the time. The "original shanty," or cabin, of Body is located, by various traditions, upon sundry and several different sites in and around Bodie—for of such is the nature of tradition; and it is surmised that many of the anecdotes related of this, the original Bodie miner, are due largely to the fertile imaginations of his successors.

The county was almost totally abandoned after the placer mining of 1860-67, until 1877, when the Standard mine attracted attention, a rush of prospectors, the investment of capital, and rich developments in the mines following each other in quick succession, and making this what it has since been, one of the most active mining districts on the coast.

Bodie town site was laid out in 1877, in rather an unsheltered situation, there being no trees on the spot, but this aspect is common to the towns east of the Sierras, and water, which is more important, has been supplied in sufficient quantities by wells and springs. The first building in the new town was a wooden structure which was moved over from Aurora to give shelter to an express office, a post office, and a store of general merchandise. In two years' time the town had risen from insignificance to be the most considerable mining town in the State, in rapidity of growth being entirely unequalled in the annals of cities, unless, perhaps, in the instance of Leadville. The town is a wooden one, but contains many imposing and substantial structures. In addition to the houses comprising the town proper, there are more than one hundred additional structures about the mines, there being upward of two dozen mining organizations working their claims in the district and employing several hundred men. All the arts and industries needful to administer to the necessities and comforts of the mining population have quickly collected, until the town numbers seven thousand inhabitants, of exceptional enterprise, energy and intelligence. There are in the town several banks of large capital, good hotels, daily papers, and the United States Land Office, which was removed from Independence, Inyo County. A line of railroad to Carson, soon to be established, is very much needed. The distance from San Francisco, via Reno and Carson, to Bodie is 438 miles, the last 113 miles of the journey being performed by stage. The fare from San Francisco is about forty dollars, the trip occupying thirty-six hours.

The altitude of Bodie is the highest of any town in the United State, being 9,000 feet above the sea level, yet the climate is exceedingly healthful, the Winters rarely being rigorous, and the Summers never being too warm.

OTHER TOWNS.

Bridgeport, the county seat, depends mainly upon the mining interests for support. It is 117 miles distant from Carson, and is reached from that city by stage. It contains two hotels, a Post Office and express office, schools, a number of lawyers and the county officers, three general merchandise and grocery stores, one contractor and builder, one blacksmith, stable, liquor dealers, etc.

When this county was organized, in 1861, Aurora was made the county seat, and in four years it had become a prosperous city of 3,000 inhabitants. But when a new survey was made, Mono County had the misfortune and mortification to lose at one stroke this valuable portion of her territory, which was found to belong to Nevada, and Aurora is now the county seat of Esmeralda, in that State.

Benton lies seventy miles southeast of Bridgeport, and is the largest town, aside from Bodie, in the county. It is locally known as "Hot Springs," on account of the occurrence of those natural phenomena at its site.

Mammoth City is a considerable town, having a newspaper, a stage line, three hotels, a brewery, a flour mill, a steam sawmill, seven lawyers, a mining recorder, an assayer, two surveyors, a doctor, a photographer, one general merchandise and two hardware stores, a butcher shop, two stables, three saloons, one tobacco stand and two restaurants.

The lesser towns are Bishop's Creek, Coleville, Dogtown, Dexter's Well, Leavitt's, Monoville, Montgomery, Oasis, Partsville and Roachville.

STATISTICAL.

Mono County has 21,578 acres of land enclosed and 25,000 acres cultivated. Of these, 25 acres of wheat yielded 500 bushels, 200 acres of barley yielded 4,000 bushels, 25 acres of oats yielded 500 bushels, 2 acres of beans yielded 100 bushels, 200 acres of potatoes yielded 500 tons, 15,000 acres of hay yielded 15,000 tons.

The list of live stock includes 2,500 horses, 100 mules, 11,000 horned cattle, 13,000 sheep, 1,200 goats, and 750 hogs. There are 50,000 pounds of butter churned annually.

The improvements include one water-power grist mill; four saw mills, one steam and three water-power, which produce annually 250,000 feet of lumber; five quartz mills, which crush 3,000 tons of rock annually; three mining ditches, fifteen miles in length, and 100 irrigation ditches, valued at $10,000, which are used to irrigate 15,000 acres, the land being valued at $45,000.

The taxable property in Mono County increased in value one-third during the ten years between 1868 and 1878. It is now estimated at something over $1,500,000. There is a population of about 10,000, of which number 3,000 are voters.

YOLO COUNTY.

Yolo County, situated in the fine farming country of the Sacramento Valley, having the river of that name flowing along its entire eastern limit, is bounded on the north by Colusa County, on the east by Sutter and Sacramento Counties, on the south by Solano County, and on the west by Napa and Lake Counties.

THE NAME.

The county was organized in 1850, and it was originally called Fremont, the name being changed to Yolo on the suggestion of Jonas Spect, a settler in the county, who was then at the State Capital. Mr. Spect desired to perpetuate the name of a local tribe of Indians, the word being a corruption of their name, "Yo-doy," which means rush or tule lands. At that time these Indians had their principal settlement on the Yo-doy mound, on the present site of Knight's Landing. The boundary lines of the new county were afterward considerably readjusted.

EARLY HISTORY.

The first white man to settle in the county was William Gordon, who came here from Los Angeles in 1842, and built himself a house on the banks of Cache Creek—then called Jesus Maria River—by setting poles in the ground, plastering the spaces between with mud, and covering the structure with oak branches. The following year the Guesisosi grant, covering a tract of land a league wide by two leagues long, was given to Mr. Gordon, who resided here many years, dying, however, in Lake County in 1876, aged 75. Mr. Gordon's grandchild, born in 1846, was the first white child to be born in the county.

In 1843, Nathan Coombs, Thomas J. Shadden, Thomas M. Hardy and Wm. Knight added their names to Mr. Gordon's as Yolo County pioneers, followed gradually by others in the succeeding years, several grants of land being made to these early settlers.

In 1845 Mr. Gordon raised seven acres of wheat, which in thirty years he saw increased to 196,847 acres sown in wheat in the county. In 1846, it being the custom in those days to capture the Indians by force and make slaves of them, several of the pioneers of Yolo County joined in such an expedition, going to make a raid upon some Southern tribes.

During 1848, gold having been discovered, almost every inhabitant of the county went to the mines. In 1849, Jonas Spect sailed up the Sacramento River with a schooner loaded with mercandise for the mines, but not being able to go any further on account of low water, he deemed it advisable to establish a trading-post at what was the head of navigation, and accordingly landed on the Yolo side of the river, opposite the mouth of the Feather River, pitching a tent and opening in it the first store and hotel kept in the county. A rancheria of ten or twelve Indians was already there, and later in the year arrived one A. R. Lovell, from Sydney, who with his wife opened a saloon in a tent. W. J. Frierson, "with six companions, in a whale-boat," and a couple of families, from Oregon, soon followed, making a population, all told, of from thirty to thirty-five persons. During the Winter, however, men came in from the mines, and the town grew to number some 1,500 inhabitants. Unfortunately for its prospects, higher water came into the river, and in another year the "head of navigation" was moved on to where Marysville now is, schooners with mercha dise for the miners leaving Fremont (for such was the town founded by Jonas Spect) behind as a mere way station, and before the end of 1850 there were not 300 people left, such being the vicissitudes of those mining days; and although Fremont was for a while the seat of the Court of Justice, which Court was afterward removed to Washington, it finally succumbed, and there is not now a solitary house to mark its former site.

These were exciting and lawless times, in this as in other portions of the State, and cattle and horse stealing, prevalent crimes, met the penalties of whipping, shooting and hanging. One stock-raiser had the vexation of discovering that an enterprising fellow had been skinning his calves and shipping them to market as venison. In one part of the county a man was whipped for killing his mule, which he stabbed with a knife while in a fit of passion, but another man was not even arrested for shooting and killing a comrade. One man came very n ar being hanged, according to the records of the first Justice of the Peace, for the stealing of two mules, of which crime he was quite innocent, but found great difficulty nevertheless in clearing himself; while another was severely whipped for making off with one of the same animals, though he proved his innocence of the theft some time after the whipping.

The State poll-tax in 1850 was $5, and the county poll-tax being $2 50, the male settlers in Yolo paid that year $7 50 poll-tax. The same year potatoes were 15 cents per pound, flour $10 per sack, and a wooden faucet cost $8, while $16 was paid by a settler in the county for a pair of spurs.

In 1850 the first Fourth of July celebration was observed on the Cache Creek, where his neighbors had been assisting Wm. Wadsworth to build a small log house. It was finished about noon, and it was then decided to celebrate the day. An American flag, the first to float in the county, was temporized out of an old blanket, a shirt contributing the stripes and oat leaves being utilized as stars. The flag pole was nailed to the gable of the new house, and the celebraters, Mr. Wadsworth, D. P. Diggs, John Morris and J. J. Estell sat down to a picnic dinner of pickled pork, codfish, a bottle of pickles, pancakes and molasses.

TOPOGRAPHY.

The county is a prosperous and beautiful one, occupying one of the most fertile sections of the Sacramento Valley, having the river of that name along its eastern boundary and the foothills in the western part. Along the river is a belt, some miles wide, of tule or overflowed land; but this land is singularly productive and richly repays the work of reclamation, much having already been accomplished, particularly in the vicinity of Sacramento City, to the south, and Grand Island to the north. The levees and other expenses of reclamation in the county have already cost nearly $14,000, the value of the reclaimed lands, however, making it a very profitable investment. Cache Creek is the outlet to Clear Lake, in Lake County, and enters the county at the northwestern corner, flowing for a number of miles through a rocky cañon, beyond

which the mountains widen out, forming Capay Valley, which is the finest wheat land in the State; after which the stream continues, in a general southeasterly direction, through the county, until it is lost in the tule lands skirting the Sacramento River. The whole county is dotted with moderate-sized and highly prosperous farms, with their comfortable and substantial buildings.

RAILROADS.

The California Pacific Railroad extends across the southeastern part of the county, from Davisville to Sacramento, while a branch of the same road passes north, through Woodland, the county seat, to Knight's Landing, and a second branch extends on from Woodland, through the northern part of the county, into Colusa. Prosperous little towns are along these lines of railroad, while everywhere the value of the land is greatly enhanced, having advanced in some places from ten to one hundred dollars, now that grain is shipped so readily and rapidly to San Francisco. The county roads are all in good condition, and considerable traffic is also carried on by way of the Sacramento River.

CATTLE-RAISING.

The land in this county was considered worthless, at first, except for grazing, and the high prices paid for beef and mutton in the mines, together with the abundance of grass all Winter, made it originally a great herding country, the price of a saddle horse or a mule, in 1840, being ten dollars, while a cow or an ox brought five dollars. Ten years later the prices had gone as far the other way, and a pair of oxen brought $500, with other prices in proportion. During and immediately after the flood of 1861-2, 800,000 cattle were starved to death, and their skins were sold, 2,000 skins per week being shipped to the bay during this period. The next year being dry, stock went down to four dollars per head, and farming began to receive more attention. However, stock-raising has ever since been profitable, and sheep-raising, horses, cattle and the dairy interests are all of importance now, there being nearly 100,0000 sheep in the county at the present time. The following table will give some information concerning these occupations, the middle column showing the highest number of any one year between 1837 and 1852. There were in the county,

Horses in.....1852— 1,808	1870— 9,773	1879— 7,124
Mules in.....1852— 314	1866— 1,976	1879— 767
Cattle in.....1852— 9,626	1865— 23,480	1879— 3,401
Sheep in.....1852— 1,855	1876— 92,477	1879—79,921
Hogs in.....1852— 2,607	1855— 55,000	1879—19,960
lbs Butter in....1855—50,000	1874—186,920	1879—85,000
lbs Cheese in...1855—10,000	1857—135,900	1879—18,126
lbs Wool in.....1856—45,510	1877—823,761	1879—36,300

FARMING.

As has been said, Mr. Gordon raised seven acres of wheat and five of corn, in 1845, this being the first farming done in the county, and Mr. Gordon harrowed his fields by dragging over them a brush made of the branches of an oak tree, tied to the pommel of a saddle horse. This was the harrow commonly used in California at that time; the plough being a crooked stick, tipped with iron, and drawn by an ox, scratching the ground (for the earth was never turned over by it), first from north to south, then from east to west, and sometimes a third and fourth time, from northeast to southwest, and from southeast to northwest. Harvesting was done with a sickle; threshing accomplished by turning unbroken horses on to the grain, in a corral, where they trampled it out, and the chaff was separated from the grain by tossing into the air on a windy day. The farm wagon used at that day was equally primitive, the wheels being sections sawed from a log, the tongues extremely heavy, and fastened by yokes and strips of hide to the horns of the oxen—the whole being an exceedingly painful, heavy and clumsy affair.

Since that time the whole valley has been made highly productive, fifty bushels of wheat to the acre being frequently obtained. It is, nevertheless, an undeniable fact that the farmers are slowly exhausting their land, for want of preserving a wise rotation of crops. However, Summer fallow is found to produce astonishing results, in one case an acre producing six bushels of grain without and thirty bushels with the use of that system.

There was formerly an extensive organization of Granges in this county, and they will probably be reorganized in the near future, for they have been almost entirely abandoned since the failure of the transporting company, Morgan & Sons, in 1874.

The price of land in Yolo County averages between $75 and $100 per acre, though very good farming lands may be obtained all the way from $25 to $75.

OTHER RESOURCES.

In the northwestern part of Yolo, situated among the foothills, is a paying quicksilver mine, whose average yield is fifteen pounds of quicksilver to the ton of cinnabar ore. There are five chimneys of ore opened, the largest having a width of forty-five feet, and extending 227 feet into the ledge, with the ore improving with depth. Eleven tunnels have been made on the ledge, aggregating 13,300 feet, and if the mine was worked to its full capacity it would employ 150 men and take out 160 tons of ore per day. The present facilities for working include four furnaces—two for coarse ore, one for fine ore, and one for soot.

Cotton has been successfully raised in the county, and silk culture has been extensively experimented with. A little further experience is all that is required to make this a leading industry of the county, but at present the enterprise is abandoned.

Grapes for wine and raisins are extensively raised, there having been, two years ago, over a thousand acres planted in vines, from which over 200,000 gallons of wine, and over 4,000 gallons of brandy were annually manufactured. And the acreage of vines has greatly increased in the last few years, since the introduction of California wines into foreign markets. Raisin grapes are raised in the county by R. B. Blower, D. C. Rumsey, S. P. Pond, N. Wyckoff, J. Y. Dillon, G. G. Briggs, and the Oakshade Fruit Company. Every sort of fruit and vegetable grows as readily in Yolo as the cereals do.

IRRIGATION.

Irrigation has been resorted to in some parts of the county, greatly increasing the natural yield of the land. Moore's Ditch is a valuable property, having had a revenue in 1878 of $7,000, and the expenses being very light. The Cacheville Agricultural Ditch, the Capay Valley Ditch, Cottonwood Ditch, and Adams' Ditch, are all more or less extensive systems, watering a large number of acres, and, while they were very expensive in the beginning, all very valuable properties. These ditches are all from Cache Creek, and others are contemplated, while several minor ones are already in operation.

Alfalfa is made a highly valuable crop by irrigation, and it will be even more so when the water is still more abundant, the farmers often wanting it before the Ditch Company is prepared to furnish it. One acre of alfalfa near Woodland realizes an annual profit of $71. Vineyards are irrigated in November or December for the next year's crop, and some farmers use the water in the Spring also, as that keeps the birds around the vines, and is the best way to be rid of injurious insects. There is a prejudice in the county against the irrigation of grain, as it is held that the soil is too stiff, and becomes baked and soured; but this result is probably due to a want of proper drainage. It is also claimed in Yolo

County, with what degree of justice it is hard to tell, that the irrigation of grain causes malarial fever and other diseases in the neighborhood. Be that as it may, it is certain that the distribution of water has been of great value in the county, while the results ought to have been still greater for the large sums expended.

CLIMATE.

The climate in this county is warm but very healthful. It is quite hot in Summer, with prevailing cool winds from the south, interspersed with hot north winds. The annual rainfall varies from eight to thirty inches, the average being twenty inches. There have in former years been very destructive floods in this county during the Winter months, but a great deal of money has been expended in making the settlers secure, and it is certain that after being overflowed the land has always been richer, being in a certain measure renewed.

WOODLAND

Is the county seat, an honor enjoyed in turn by Fremont and Cacheville, and by Washington twice, before it was conferred upon Woodland. This town, distant 16 miles from Sacramento and 82 miles from San Francisco, is pleasantly situated among the oak trees, in the midst of some of the best farming land in the county. It is connected by railroad with Sacramento to the southeast, Knight's Landing to the northeast, and Colusa County to the north. It contains many good business blocks and handsome residences, and is largely supported by the prosperous farming community in its vicinity. The Court House and other public buildings compare favorably with like buildings in other towns of the same size, while the public square is a feature of the place, being finely stocked with shrubs and rare plants. Wine making and brewing are carried on. The flouring mills have a capacity of 100 barrels per day, while there are planing mills, gas works, marble works and water works in town. They have also, in this active little city of between three and four thousand inhabitants, a bank, a brass band, a fire department, five churches, a high grade school, Hesperian College, in addition to excellent public schools; several newspapers, seven hotels, three restaurants, five stables, three harness makers, six shoe stores, six groceries, five hardware stores, two dry goods stores, two clothing stores, two furnishing goods stores, four fruit and candy and two furniture stores, two meat markets, two bakers, four barbers, two tailors, three drug stores, four milliners and dressmakers, one candy factory, three photographic establishments, four warehouses, two lumber yards, three planing mills, one carriage trimmer, twenty-four saloons, one machine shop, an express office, five house and carriage painters, with doctors, numerous lawyers, and seven Chinese wash-houses.

Davisville is a rapidly growing town of some 500 inhabitants, situated at the junction of the Knight's Landing Branch with the California Pacific Railroad, in the midst of a country of rich farms and large orchards.

Langeville is situated at the lower end of the beautiful Capay Valley, among the hills, in the northwestern part of the county, and at the entrance to the Garden of Eden of the local Indian traditions. This town has a stage line to the quicksilver mine and to Lake County, twenty-five miles of the route of sixty-five miles being through the mountains, where there are some very fine scenic effects. The town has twenty-five dwellings, a hall, two hotels, a post office, a school, and a dozen or so different shops and stores.

Madison is the terminus of the Vaca Valley and Clear Lake Railroad, and is important as a shipping point, having sent 15,000 tons of grain over the road between August 11, 1878, and October 1, 1879. The town, most of whose buildings were moved bodily from Cottonwood, has a large flour mill, twenty-five dwellings, a school, a hotel, two churches, with stores, etc.

Knight's Landing is the most important town in the northern part of the county, carrying on a good deal of traffic both by the railroad and the Sacramento River. It has a large flouring mill of one hundred and twenty barrels daily capacity, churches, schools, lumber yards, warehouses, brick business buildings, local lodges of the I. O. O. F., I. O. G. T., F. & A. M., etc.

Winters, the terminus of the Vaca Valley Railroad, is twenty-five miles southwest of Woodland, to the west of the valley portion of the county, in the foothills. The railroad is a paying one, immense quantities of wheat being raised in the neighborhood, the vineyards yielding abundantly, and other fruits and vegetables being extensively raised.

Washington, having one hundred residences and a few stores, was formerly, as the county town and an avenue to the mines, of considerable importance, but now that it is connected by bridge and railroad with Sacramento City, it has become quite merged in that place, its people carrying on all their business in the larger town.

Cacheville has two hundred and fifty inhabitants. This is a place where there was formerly a Chinese washhouse, but it is now vacant, the citizens, who believe in carrying to a practical end their opinions, combining to pay the rent and keep it empty, that no Chinaman may have an abode or a place of business within their town limits.

OTHER TOWNS

In the county are Buchanan, Buckeye, Black's, Cottonwood, Cañon, Capay, Centre, Clover, Cache Creek, Cacheville, Clarksburgh, Dunnigan, Eureka, Enterprise, Fairville, Franklin, Fillmore, Fairview, Gordon, Grafton, Haight, Jefferson, Liberty, Lisbon, Monument, Montgomery, Monitor, Mount Pleasant, Mountain, Merritt, Occidental, Prairie, Putah, Pine Grove, Pleasant Prairie, Plainfield, Quicksilver, Spring Lake, Rock, Union, Vernon, Woodland Prairie, Willow Slough and Yolo.

STATISTICS.

The county contains 547,148 acres, of which 135,340 acres are enclosed, and 138,935 acres cultivated.

122,695 acres in wheat yield	3,322,269 bushels
18,559 acres in barley yield	40,063 bushels
536 acres in corn yield	12,573 bushels
59 acres in peanuts yield	43,975 bushels
433 acres in beans yield	43,463 bushels
305 acres in potatoes yield	1,555 tons
125 acres in sweet potatoes yield	1,247 tons
16,122 acres in hay yield	27,206 tons
178 acres in hops yield	874,327 pounds

There are also 89,756 pounds of butter, 11,792 pounds of cheese, 739,976 pounds of wool, and 6,573 pounds of honey, produced annually in the county. There are 25 lemon, 207 orange, 30 olive and 198,630 orchard trees, together with 6,730 horses, 876 mules, 7,714 horned cattle, 92,497 sheep and 19,675 hogs. The three breweries in Yolo make annually 70,590 gallons of beer.

The improvements include four steam power grist mills; three irrigating ditches, used over 12,000 acres and valued at $8,000; and three railroads, 52 miles in length, valued at $357,000. The assessed value of real estate for 1880 is $7,200,752; value of improvements, $1,352,965; personal property, $1,335,163; amount of money, $26,350; total value of property, $9,915,235, while the assessment per acre is $12 40.

There are in Yolo County seven Lodges of Odd Fellows, dating from 1863; five Lodges of Masons, dating from 1855, besides Lodges of other societies. There are 57 schools, with 45 school houses, and an average daily attendance of 1,453. In addition to the efficient public schools, Hesperian College, a school of high grade, is situated at Woodland, the Pacific Methodist College, inaugurated in 1859, at Cacheville.

Yolo has an estimated population of 11,500, of which 3,637 are registered voters and 3,046 the census school children.

[The writer is indebted for much valuable information to Jas. De Pue, Esq., of Oakland, who is about to publish a large and handsome volume, containing a complete history and description of Yolo County.]

SAN LUIS OBISPO COUNTY.

San Luis Obispo is bounded on the north by Monterey County, on the east by the Mount Diablo range of mountains, which separate it from the low Tulare Valley, in Kern County; on the south by Santa Barbara County, and on the west by the Pacific Ocean.

TOPOGRAPHY.

The county averages about seventy miles in length, from north to south, and sixty miles in width, from east to west, having an area of about 2,025,000 acres, in great part undulating and mountainous land. The Santa Lucia range extends through the length of the county, parallel with the coast. The eastern portion of the county, which includes about two-thirds of its whole area, is a beautiful country, as lovely to look upon as an English park, and consisting principally of low, rolling hills, covered with grass and well wooded with white oak, pine and live oak. The county is not by any means fully developed, and agriculture is carried on only in its western and better known part, between the Santa Lucia Mountains and the ocean. Irrigation is not required in this county, as it is one of the best watered districts in California, brooks and rills trickling down every hillside, and good-sized trout streams running through every valley, the San Juan Creek, the Estrella Creek and the Santa Maria River being among the most considerable.

The west line of the county has several indentations, notably Estero and San Luis bays. Several towns, as San Simeon, Morris, and others smaller, but just as pleasantly situated, are located along the coast and are attracting invalids and tourists from San Francisco and still greater distances by the advantages of their natural beauties and beautiful climate.

COMMUNICATION.

There is as yet no railroad in the county, excepting the short line connecting the town of San Luis Obispo (which is ten miles inland) with Port Harford, on San Luis Bay. But the surveys have been made for a projected branch road, which will cross the northeastern part of the county, connecting the present terminus of the road from San Francisco, in Monterey County, with the Southern Pacific line in Kern County. In the meantime the Pacific Coast steamers ply regularly between San Luis Bay and San Francisco, making stops at several of the coast towns; and a stage of the Coast Line, carrying the United States mail and Wells, Fargo & Co's Express, passes daily through the town of San Luis Obispo, while there is communication by stage line between San Luis Obispo and Cambria, connecting with Morro, Old Creek, Cayucos and other towns. There is also a telegraph line from San Francisco south to Santa Barbara, by way of the town of San Luis Obispo, with offices in several towns in the county.

CLIMATE.

The county is situated between the 35th and 36th parallels of latitude, being included in that temperate portion of the State which enjoys warm days in Winter and cool nights in Summer. The climate is mild and even, attracting those in search of health resorts to its mineral springs and seaside towns, while the purity of the atmosphere in most of the valleys has become favorably known to persons suffering from consumption and other diseases of the throat and lungs, who find relief, lengthened lives and complete cures in this portion of the State. The temperature, whose annual average is about 65 degrees, does not vary more than 11 degrees during the year; and the annual average rainfall is about 21 inches. The rainy season generally extends from the middle of November to the first of May, but this period includes long intervals of the mild, pleasant weather peculiarly known as the "California Winter."

RESOURCES.

This is not in any sense a mining county, although it possesses several paying quicksilver mines, including the Oceanic, Sunflower and Mahoney mines. Nor have its agricultural resources been adequately developed, while manufacturing in this, as in nearly every other portion of the State, is an untried power, to be more fully resorted to in the future, which peoples more densely the fertile, but now sparsely settled valleys of California. Of the 2,025,000 acres of land in San Luis Obispo, 500,000 acres are held by virtue of Spanish grants, while the remaining 1,525,000 acres are all Government land, excepting the small portion now in process of being taken up by actual settlers. The average value of land in the county is about $3 50, but thousands of acres of fertile land may be obtained for sums that are almost nominal. There are a number of sheep ranges in the county, and San Miguel, in the northeastern part of the county, is the centre of an extensive stock raising district. Dairy farms are numerous, and grazing is carried on in the eastern part of the county, where the tiller of the soil has not yet penetrated, though the presence of a variety of nutritious grasses would indicate that the natural advantages required by agriculture are not wanting in the soil. Grain is raised abundantly, and with very little cultivation, the same being true of the fruit crop, from olives and figs to apples and peaches.

THE CITY OF SAN LUIS OBISPO

Was incorporated in 1876, and contains an estimated population of 2,500, and about 800 registered voters. The town, which is the county seat, is very prettily situated at the end of a large valley of excellent farming land, and is completely surrounded by the mountains. San Luis Creek, which rises at the highest part of the Santa Margarita Pass, flows through the centre of the town, along the edge of what was the old Mission Garden, but which is now occupied by private residences. Stenner Creek, which also rises in the mountains, and which takes its course through the productive Chorro Valley, also flows through the town, emptying into the San Luis Creek.

The first settlement at San Luis Obispo was made in 1771, when the Franciscans established the mission here, the old mission church still standing, and the olive and fig trees planted by the padres almost one hundred and ten years ago still bearing fruit in the Mission garden. Water is supplied to the town by a company, which brings it from springs which maintain their clearness and purity during the most prolonged rain-storms, and which are situated near the town, in a small

rocky and densely wooded ravine. San Luis Obispo has also a gas company, whereby her streets and buildings are conveniently lighted at night. The County Court House, erected in 1874, cost $50,000, while the City Hall, built in 1878, cost $8,000. The Hospital, on the outskirts of the town, cost the county $10,000. There are four churches in the town, two public school buildings, constructed at a cost of $11,000, and a Catholic seminary. During the past five years the town has very greatly improved in appearance, owing to the more substantial nature of the residences and the buildings erected, while shade and other ornamental trees upon the sidewalks, with the extensive flower gardens, attractive to the eye and grateful in fragrance, and the fine appearance of the fruit orchards, add greatly to the graces of the place.

The harbor, with an excellent wharf and a large warehouse, is on the Bay of San Luis, and is connected by railroad with the town of San Luis Obispo. The harbor is here a well sized and safe one, but a mile and a half further up the bay is a small indenture, surrounded by abrupt cliffs, and with water of a great depth, where the largest vessels may lie safely at any season of the year. This point is called Port Harford. Besides communication by the coast steamers, San Luis Obispo has ample travelling facilities by stage, either north or south. The climate here is unsurpassed, the temperature averaging about 65 degrees, while the ground is never frozen, although frost is sometimes seen upon its surface.

OTHER TOWNS.

Cambria, with a population of 300, is situated in the pretty and productive Santa Rosa Valley, in a cañon about one mile from the beach. The valley is twelve miles long, having Santa Rosa Creek, a considerable stream, flowing through it to the ocean. The town is 34 miles north of San Luis Obispo and 160 miles from San Francisco. It has stage line connection with San Simeon, Paso Robles and San Luis Obispo. It has also a post office, telegraph and express office, and a most excellent hotel, three stories in height, well kept for the convenience of visitors. The dairy farms are the principal support of the town, together with the barley, potato and bean crops. There are several valuable quicksilver mines in the vicinity, but they are lying idle at present. A wharf and a warehouse accommodate passenger steamers and schooners.

Morro is situated upon Morro Bay, twelve miles from San Luis Obispo. The site is an admirable one, the climate and the surf attracting visitors, and the fertile farms of the surrounding country supplying the local productions of hay, potatoes and the dairy products. There is stage communication from this point with all the neighboring towns, and the steamers from San Francisco touch regularly.

Cayucos is a small but pretty town, 180 miles from San Francisco and seven miles north of Morro, situated on the coast, with a good wharf, where the coast steamers touch, and from which the dairy and other products of the country back of the town are shipped.

San Simeon is a Post Office town on the sea coast, in the northwestern part of the county. It is the principal landing-place for Cambria and the neighboring district, and has also quite an extensive whale fishery.

San Miguel is in the northeastern part of the county, about forty miles from the town of San Luis Obispo. It was first settled in 1797, when the Mission of San Miguel was established by the Franciscan padres, the old buildings standing (although considerably dilapidated) just as they were erected almost a century ago. The town is on the Salinas River, and the inhabitants of the surrounding country are extensively engaged in stock raising.

Paso Robles is a well-known resort, favorably noted for its hot springs. It is pleasantly situated in a grove of trees, thirty miles from San Luis Obispo. The visitors, who are especially numerous in Summer (though the place is not deserted during any month in the year), are conveyed to and from Soledad, on the Southern Pacific Railroad, by stages of the coast line, which make daily connections.

Newcom's White Sulphur Springs, about fourteen miles south of San Luis, and the Pecho Warm Springs, fifteen miles northwest of San Luis Obispo, and two miles from the coast, both attractively situated, are among the numerous mineral springs having valuable medicinal qualities in the county.

OF LESSER NOTE

Are Arroyo Grande, Adelaide, Biddells, Cholame, Cuyama, Estrella, Flint, Josephine, La Panza, La Playa, Los Osos, Nivonia, Old Creek, Osgoods, Oso Flazo, Piedra Blanca, Potrero, Pozo, San Marcos, Santa Margarita, Santa Rosa, Salsipuedes, and Sulphur Springs.

STATISTICAL.

There are 201,000 acres enclosed in the county, with 60,000 acres cultivated. Of these—

30,000 acres in hay yield	16,000 tons.
30,000 acres in barley yield	900,000 bushels.
6,000 acres in wheat yield	150,000 bushels.
1,000 acres in potatoes yield	4,000 tons.
300 acres in corn yield	100,000 bushels.
200 acres in beans yield	4,000 bushels.
200 acres in sugar beets yield	1,200 tons.
20 acres in onions yield	1,200 bushels.
20 acres in pease yield	400 bushels.

Hops yield 1,000 pounds per acre, and buckwheat yields 50 bushels per acre. There are 100 acres planted in oats, and 25 acres in rye, used as hay, and 50 acres are planted in flax.

There are also produced 2,000,000 pounds of wool, 600,000 pounds of cheese, 500,000 pounds of butter, 5,000 pounds of honey, and 500 gallons of wine.

The fruit crop is valued at $10,000, the lemon trees numbering 50, the olives numbering 2,000, and the grape vines covering 30 acres.

The live stock includes 200,000 sheep, 30,000 horned cattle, 9,000 hogs, 5,500 horses, 1,000 cashmere and Angora goats and 200 mules.

The improvements include four gristmills, two steam and two water-power, making 7,000 barrels of flour and grinding 10,000 bushels of corn annually; one steam-power sawmill, turning out annually 100,000 feet of lumber; one brewery, making annually 30,000 gallons of beer; several irrigating ditches; and one railroad, eleven miles in length.

The assessed value of real estate is $4,000,000; the value of improvements, $1,000,000; the value of personal property, $1,500,000; making a total valuation of $6,500,000.

The population of San Luis Obispo County, which is constantly increasing, is estimated at 12,000, including 3,000 registered voters and 3,000 census school children.

PLUMAS COUNTY.

This is one of the medium-sized counties, organized in 1854, and having an area of 2,736 square miles, and is in the northeastern part of the State, quite close to the boundary line between California and Nevada. Mountain chains define its limits on several sides, its bounding counties being, on the north, Shasta and Lassen; on the east, Lassen; on the south, Sierra and Butte; and on the west, Butte and Tehama.

TOPOGRAPHY.

Plumas is up among the mountains, lying in the midst of the Sierra Nevada range. Its scenery is among the wildest and most picturesque in the State, snow covering the summits of the mountains; their slopes being clothed in magnificent forests of pine, fir and oak trees; and high ridges alternating with abrupt chasms and deep cañons, through which tumble running streams. There are grassy valleys of considerable extent throughout the county, which are cultivated by agriculturists, among them being Big Meadows, Mountain Meadows, Indian Valley, Genesee, American, Beckworth and Meadow Valleys. Big Meadow Valley, fifteen miles long by four miles wide, is the largest of these mountain valleys, and is immediately adjacent to Mountain Meadows, of nearly the same size, and also to several smaller valleys, also cultivated, the whole constituting a plateau high up in the mountains, the elevation being 4,500 feet. Indian Valley, an important and prosperous district, is eleven miles in length by two miles in width. American Valley being of about the same size. Both connect with smaller valleys, and support several small towns, as well as the farms scattered over their extent, and being fertile and well-watered, are capable of supporting a much larger population.

Among the highest mountain peaks in Plumas are Butte Mountain, Beckwith Peak, Goodwin's Peak, Mount Adams, Mount Claremont, Mount Onjumas, Mount Taylor, Mount Wellington, Penman's Peak, Pilot Peak, and Rock Creek Hill. Among the mountains in the extreme north of the county are two small lakes, Lake Annie and Lake Louise, and several boiling springs.

STREAMS OF WATER.

This county has an abundance of water, mountain rills falling through every cañon and ravine, and streams of more or less importance taking their course through every valley. Two important branches of the Feather River (El Rio de Las Plumas), the largest tributary of the Sacramento, take their rise in the Sierras, in this county, being fed by numerous lesser streams. The North Fork of this river rises in Lassen's Peak, and waters the valley of Big Meadows, being in that place a rapid stream, one hundred yards wide. Kush, Indian, Spanish and Cherry creeks are all tributaries of the North Fork of the Feather River, flowing through cultivated valleys and important mining districts in their course.

These streams of water are all highly important to the county, making the valleys through which they flow most inviting in the sight of the husbandman and herdsman, and being used in irrigating the land, in the agricultural districts; to construct flumes for the transportation of lumber, in the timber country; and in the furthering of extensive operations among the hydraulic mines.

CLIMATE.

This county has the finest mountain climate in the world, invigorating, healthful and delightful. It is extremely pleasant in Summer, and only moderately cold in Winter, although there is an abundance of snow, of course, in the mountains, and the average rainfall is 40 inches annually. The valleys of Plumas will yet be counted among the most desirable Summer resorts in the State, abounding, as they do, in game and mountain trout; having cool, delightful weather, so much pleasanter than the excessive heat of so many of the mineral springs of California, extensively patronized in Summer; having, also, good water, hundreds of romantic and shady retreats, with the novelty and picturesqueness of mountain scenery; and, withal, good hotels and cheap accommodations, it being practicable to spend a month in some of the Plumas valleys for almost what it would cost to remain at home. Undoubtedly, this county will be extensively sought by Summer visitors when railroad communication is established.

RESOURCES.

Though having a comparatively small area of level land, its fertile and well watered mountain valleys made agriculture practicable in this county, and farming is extensively carried on, and the farms are highly prosperous, while in some of the adjacent mountain counties none of the cereals at all are raised. In addition to grain and vegetables, this is an important fruit county, orchards many miles in extent, making of the foothills a continuous belt of fruit-bearing trees. The average value of land is about $5 per acre, but a considerable portion of the valuable land has been taken up, and is held, according to location and improvements, at from $10 to $50 per acre.

The mountains, as have been said, were clothed by Nature in this country with the most magnificent forests in the world, and although there are districts where logging is carried on, the timber transported by means of flumes and the sawmills furnishing several millions of feet of lumber every year, there are extensive sections where the trees are not yet perceptibly thinned, and it is evident that Plumas, for many years, will possess a valuable lumber interest.

The wealth of this county, however, is claimed to be in its mines, the hills having a great many gold- and copper-yielding claims, and extensive operations being carried on in many different places, both by placer and hydraulic methods, by those in search of the gold-bearing gravel or quartz. The auriferous gravel is occasionally found in drifts and ridges hundreds of feet in depth, and although it is sometimes loose and easily washed, it is often incorporated with an obstinate cement or hardened volcanic matter, and blasting has to be resorted to. The mining interests have brightened considerably during the

past few years, operations which had been abandoned since early times having in many instances been recently resumed.

COMMUNICATION.

There are, as yet, no railroads in Plumas County, and although there are numerous good wagon roads and established stage lines, and although there is an abundance of water for transporting lumber, there is no doubt that railroad communication will be most important and valuable to the county. The mines have sometimes been worked at great expense, owing to the lack of convenient transporting facilities, and to tourists and travellers, and in some measure to emigrants and settlers, any county remains more or less unknown, however important its attractions, if travelling is not conveniently rapid and cheap.

All of the principal towns are connected by stage lines, and have communication to the west with Oroville, in Butte County, and to the east with Reno, in Nevada. Some of these eastern counties of California may, indeed, more readily communicate with Nevada than with the western portion of their own State, owing to the great altitude of some of the mountain passes in the western ranges of the Sierra Nevada, the pass on the road to Stockton from Alpine County, which is also on the eastern boundary of California, but considerably south of Plumas County, being almost 10,000 feet high.

QUINCY.

This town is the county seat, and is equally dependent upon its mining interest and upon agriculture, being situated in the American Valley, which has an area of 5,000 acres of arable land, producing grain, vegetables, and all the temperate-zone fruits. The location of the town is pleasant and attractive, as it is in the midst of the Sierras, covered, as they are here, with dense forests, and clad in snow during half the year. The climate, which is vigorous and healthful, is not among the least attractive features of the place, which is comfortably reached by stage from Oroville, sixty-five miles distant, and also from Reno, the latter trip being made in a day, and the Quincy and Reno stage line passing through, in Plumes County, the towns of Long Valley, Jamison, Eureka, Johnstown, Beckwith and Summit. Quincy has, in addition to the county officers, a weekly newspaper, three physicians, five lawyers, one dentist, one insurance agent, two surveyors, a church and a school, a Lodge of the I. O. O. F., A. O. U. W., and also of the F. and A. M.; a telegraph agent and Postmaster, two hotels, two stores of general merchandise, one market, one variety store, one bootmaker, one barber, one carpenter, one jeweller, one painter, two blacksmiths, one drug store, one clothing store, one brewery, and two saloons.

LA PORTE

Is a mining town, situated at an altitude of 4,500 feet, upon the divide between the Feather and Yuba Rivers. It is about thirty miles south of Quincy, and is situated upon the Oroville stage line. Placer mining, and also lumbering, are extensively carried on, this being the same place that was formerly called Rabbit Creek. Snow falls in Winter, sometimes attaining a great depth, and travelling being carried on by means of snow shoes. The town has a bank, a hotel, a flouring mill, a livery stable, a gunsmith, a tailor, an undertaker, a druggist, a doctor, three lawyers and two saloons.

TAYLORVILLE

Is the principal town in Indian Valley, one of the most prosperous agricultural regions in the county. The valley has connection with several smaller but equally fertile valleys among the hills, the most important being Genesee Valley, and the whole constituting a large acreage of productive and valuable farms. The mountains are high and steep in the vicinity of Taylorville, but good roads have been constructed, and a stage runs regularly to Reno, on the line of the Central Pacific Railroad, distant seventy-five miles, the stage road passing through Red Clover Valley, Silver Valley and Beckworth Pass. There is also communication with Quincy, twenty miles distant. There is a stage line also from Oroville, and from Chico, by the way of Big Meadows. The town has a flouring mill and a saw mill, while in the neighborhood are quartz mills and valuable mines of gold and copper.

MEADOW VALLEY

Has a fine situation, on a stream which is tributary to the North Feather River. It is in a ravine, at the foot of high mountains, from whose summits the snow scarcely melts during any part of the year. The town is several miles from Quincy, on the road to Oroville, and has also good roads constructed to various towns and rich mining localities of the county.

Summit is a small town, situated in the southeastern part of the county, upon the range which forms the eastern boundary of the county, 7,000 feet above the sea. It consists principally of a hotel, a Post Office, three farmers, a stock raiser, a shoemaker, a blacksmith, a wholesale butter dealer and a store of general merchandise.

Greenville is not an inconsiderable town in the nothern part of the county, having a hotel, a bank, iron works and a tin shop.

OTHER TOWNS

Of less importance are: Antelope, Buck's Ranch, Bedsworth, Buckeye, Crescent Mills, Carriboo, Clover Valley, Coppertown, Diamond Springs, Eureka Mills, Greenville, Gibsonville, Hot Springs, Island, Indian Bar, Jamison City, Johnstown, Junction Bar, Lincoln, Lassen Buttes, La Porte, Longville, Mohawk, Meadow Valley, Marion Flat, Nelson Point, Prattville (Big Meadows), Pioneer, Pilot Creek, Rich Bar, Spanish Ranch, Soda Bay, Summit, Sulphur Springs, Seneca, Taylorville, Union and Wash.

STATISTICS.

There are in the county 53,000 acres of land enclosed and 6,000 acres cultivated.

15,630 acres, planted in hay, yield	19,800 tons
2,600 acres, planted in oats, yield	55,280 bush.
1,200 acres, planted in wheat, yield	12,890 bush.
300 acres, planted in barley, yield	9,213 bush.
169 acres, planted in potatoes, yield	823 tons
10 acres, planted in rye, yield	130 bush.

The fruit crop, consisting of 6,000 apple trees 2,000 peach trees, 1,000 pear trees, 500 plum trees, with lesser number of cherry, quince, crab-apple, prune, nectarine and apricot trees, is valued at $5,000.

The live stock include over 9,000 horned cattle, 5,000 sheep, 2,000 horses, nearly 2,000 Cashmere and Angora goats, 900 hogs and 250 mules.

Among the improvements in Plumas County are 2 water-power grist-mills, which make 1,500 barrels of flour annually; 9 saw-mills, 4 with steam and 5 with water-power, which turn out 3,000,000 feet of lumber annually; 8 quartz-mills, crushing 100,000 tons of quartz; 325 mining ditches, 613 miles in length; 28 irrigating ditches, watering 2,800 acres, and 3 breweries, making 4 000 gallons of beer. The yield from the flocks and from the dairy consists of 250,000 pounds of butter, 7,000 pounds of cheese, 5,000 pounds of wool and 2,600 pounds of honey.

The real estate is valued at $1,000,000; improvements, at $500,000; personal property, at $1,000,000; making a total of $2,500,000.

The estimated population of the county is 7,000, which includes 1,500 registered voters and 1,200 census school children.

TEHAMA COUNTY.

Tehama County, which was organized in 1856, and has an area of 2,800 square miles, lies in the northern part of the State, being bounded on the north by Shasta County, on the east by Plumas County and Butte County, on the south by Butte County, Colusa County and Mendocino County, and on the west by Mendocino and Trinity counties.

TOPOGRAPHY.

The Sierra Nevada Mountains occupy the eastern part of the county, while the Shasta Mountains, belonging to the Coast Range, are in the western portion. The middle of the county, between the two ranges, is in reality the most northern section of the great and well-known Sacramento Valley, having the river of that name flowing from north to south through the county. In addition to this level land, there are many small valleys among the mountains, also extremely fertile and knowing a greater or less degree of cultivation. The mountains, which are covered with timber, and which have also mineral richness, give to Tehama what has been its principal source of wealth, though the farms and grain fields make also a fine showing. There are several conspicuous peaks among the mountains, the most noticeable being Mount Linn, on the western border, and, to the northwest, Lassen Peak, which in reality belongs partly to Shasta County, but whose grand height is a landmark from nearly every part of Tehama, and which is the extinct cone of an ancient volcano, almost 11,000 feet high.

RIVERS OF TEHAMA.

The Sacramento River flows from north to south through the county, in the midst of that level or valley portion which lies between the Shasta and Sierra Nevada Mountains; the other rivers of the county, and they are numerous, being tributary to it. This river is 465 miles long, and it is navigable at all seasons for sailing vessels for 310 miles of its course, or to a point thirty-six miles above Red Bluff, though the latter place is considered the head of navigation for steamers. This important stream of water is, however, in yearly danger of having its value too seriously if not entirely impaired, through the neglect to clear and to keep clear its channel, where sand banks are gathering and greatly impeding its course. However, in Tehama County it is still a magnificent stream of water, being broad, deep and clear. The South Fork of the Cottonwood Creek, Reed Creek, Red Bank Creek, Elder Creek, Thomas Creek, Dry Creek, Regan River, Moon River and Coyote Creek—all take their rise in the Shasta Mountains, flowing easterly into the Sacramento. Having their source among the Sierras, and flowing westerly into the Sacramento, are the Antelope Creek, Dye Creek, Mill Creek and Deer Creek. These are all clear and impetuous mountain streams, abounding in trout and other fish, and passing, in nearly every case, through valleys and sections of level land in process of cultivation by the farmer. They are also extensively used, during a part, at least, of their course, for the floating down from the hills of timber.

TRANSPORTATION.

The California and Oregon Railroad passes directly through the county, following the general course of the Sacramento River through the central valley portion. About twenty miles north of Tehama County, in Shasta County, Redding is the present northern terminus of the line. The stations on the railroad serve as centres of trade for their surrounding districts, and the freight trains, together with the Sacramento River, being thus convenient to the whole farming section, with the county wagon roads, and the streams being used in conveying lumber from the mountains, the transporting facilities of the county are seen to be most excellent.

RESOURCES.

This is a county which has been favored by Nature in the variety of its capabilities, and, prosperous now, with its scanty population, there is no reason why it should be less so were the number of inhabitants augmented many thousands, with support demanded for large manufacturing towns upon its promising streams. Among the mountains, mineral indications are scattered everywhere, traces of gold, silver, copper, sulphur, petroleum, iron, coal, and mercury having all been found, with gold claims now being worked at a profit by means of placer diggings and hydraulic methods along the creeks, while in many of the gulches Chinamen are industriously employed in working over the abandoned ground occupied by the early miners.

Among the mountains are also the vast belts of magnificent timber, pine, fir and oak, the present source of the principal wealth of the county. The lumber business was never before carried on so extensively as at the present time, although it has received a good deal of attention through all the northern part of the State during the last sixteen years. So extensive, indeed, is this business, that a majority of the inhabitants of the county are now engaged either in getting out the logs, in sawing them at the mills, or otherwise in dealing in lumber. Besides the streams, a great number of flumes, some of new and improved patterns, are used in transporting the timber, and the sawmills of the county actually turn out for use between thirty and forty million feet of lumber annually. The Sierra Flume and Lumber Company has a V flume forty miles long, whose dump is at Chico, in Butte County, and they float over 100,000 feet of lumber down from their mills, in Butte and Tehama Counties, per day.

However, agriculture is fully as important a source of revenue in Tehama as are the forests. Grain of every kind grows readily in the rich and productive valley lands, and the side hills are planted, to a considerable altitude, with orchards, the temperate zone fruits and grape vines all doing well here, the hardier trees being planted on the hill slopes to an altitude of 5,000 feet. The grass covered mountain slopes and valleys are also valuable to the ranchmen, whose cattle are herded in the higher ranges of the county. There are two kinds of productive valleys in California, the level lands bordering on the rivers, such as the Sacramento Valley being one, and the small, park-like hollows in the mountains constituting the other. The fertility of these depressions found between abrupt declivities and towering heights, is, indeed, a feature of the State. As for the Sacramento Valley, its whole extent is highly productive, in Tehama County as elsewhere, the Summer heats only serving to make the grain ripen rapidly and yield largely. In a well-watered county like Tehama, the yield is abundant without artificial irrigation,

but with additional moisture, it is, verily, made to blossom as the rose. Very little in this county has been done towards establishing artificial methods, and it might be found of advantage to utilize the mining ditches as irrigating ditches also, as has been done with the best of results in some of the neighboring counties.

The soil here is, for the most part, a sandy loam, though sometimes is encountered that clayey adobe which was once considered utterly worthless, but which, under the "summer fallow" system of working, now produces crops unsurpassed either in quality or quantity. In truth, every variety of soil is found in California, but not one which has not all the elements of productiveness, if only sufficient water and proper handling be secured. Wheat is the largest crop of this, as of so many other counties, although farmers are very gradually coming to perceive the folly of planting invariably the same crop, and are beginning to turn some attention to other products. The land along the creeks is suited in every way for the production of corn, and it may be added that potatoes, which were formerly shipped up from the bay, are now found to attain here a large size and superior quality.

CLIMATE.

The mountain climate is very nearly perfection itself, and in the lower parts of the county, while the Summers are "ardent," with frosts in Winter, the extremes only slightly exceed those of Los Angeles, and owing to the dryness of the atmosphere and to the nights being cool and refreshing, even the heated terms of Summer are not found so oppressive as might be supposed by those who notice that deaths from sunstroke prevail upon the Atlantic Coast at very nearly the same temperature. There is an annual mean of about 62 degrees, or an actual range between 45 degrees in January and 80 degrees in July, while the average annual rainfall is about 30 inches.

RED BLUFF.

This town is the county seat, and is an incorporated city, located upon the west bank of the Sacramento River, at the head of navigation for steamboats on that river, and on the Oregon Division of the Central Pacific, 135 miles from Sacramento (or 250 miles distant by river), and 274 miles from San Francisco. The town is a prosperous and even an important one, being the centre of trade for the surrounding country, that of the lumber interest being especially important, while those natural advantages which would indicate a permanent and steady growth are many. A productive agricultural country surrounds the town site, and new lands are being continually taken up, and an increased acreage of grain planted, large crops being realized in this part of the country. The greater part of the wool annually clipped in the southern and eastern part of Oregon and in the northern part of California passes through Red Bluff, the annual clipping of wool in Tehama County alone amounting to 2,000,000 pounds, and constituting a very considerable source of revenue to Red Bluff, whence it is shipped. It is hoped by the settlers here that large woollen mills will yet be established in the town, and, considering the superior water and other facilities, it would seem that this is one of the probabilities held in the near future for the place.

The town, which has a population of 3,500, with about 650 voters, is a lively but well-ordered one, with various factories and mills, including several carriage and wagon factories, harness makers, marble works, gas works, etc. The Blue Ridge Lumber Company has its office here, with a sash, blind and door factory, which employs quite a large number of men. Many of the public buildings are very fine ones, the public school building being the most substantial one in the northern part of the State. There are in town also a bank, two newspapers, and churches of all the denominations.

Tehama has a very pleasant location upon the west bank of the Sacramento River, its site being a plain, dotted with oak trees, with the Shasta mountains in the distance. It is a station upon the line of the Oregon division of the Central Pacific Railroad, as is Red Bluff, and is distant twelve miles south of that town. The settlers of the surrounding country make farming and stock raising their principal occupation, and Tehama may, indeed, be said to be the most northern of the agricultural towns, the mountain settlements in the northern part of the State having generally had a mining origin. The town is a very prosperous one, and is steadily growing larger, although its importance as a shipping point upon the river, to schooners and steamers, is not as great as formerly, now that the railroad runs through the county. The road crosses the river at this point, continuing north on the west, instead of on the eastern bank. The town was formerly called Hall's Crossing, and was the junction of two wagon roads leading to the north of the State and to Oregon, one continuing up the western bank of the river, as does the railroad now, and the other by the way of Marysville, Neal's and Lassen's ranches.

THE OTHER TOWNS

And precincts in the county are Antelope, Butte Meadows, Coast Range, Cascade, Copeland, Cottonwood, Elder Creek, Elktown, Elmore, Elkins, Farquhar, Floyd, Gleasonville, Henleyville, Howell, Hunter, Johnston, Junction, Lowery, Liveoak, Lassen, Moon's Ranch, Montgomery, Murray, Oak Creek, Orion, Paskenta, Payne's Creek, Riceville, Rawson, Reed's Creek, Red Bank, Sierra, Stoney Creek, Jesma, Toome's, Vina, and Washington.

PRODUCTIONS.

There are in this county 14,520 more acres cultivated than are enclosed, there being 122,430 acres enclosed, and 136,950 acres cultivated, there being still a considerable quantity of Government land not yet taken up. There are planted—

72,114 acres in wheat, yielding	792,512 bushels.
43,510 acres in hay, yielding	48,940 tons.
15,554 acres in barley, yielding	234,206 bushels.
1,250 acres in oats, yielding	28,750 bushels.
650 acres in corn, yielding	19,500 bushels.
600 acres in rye, yielding	7,200 bushels.
100 acres in peanuts, yielding	190,000 pounds.
80 acres in potatoes, yielding	240 tons.
220 acres in sweet potatoes, yielding	495 tons.
18 acres in beans, yielding	660 bushels.
12 acres in onions, yielding	600 bushels.

There are also produced in the county, 2,000,000 pounds of wool annually, 25,000 pounds of butter, and 4,000 pounds of honey. The annual fruit crop has a valuation of $25,000. There are 500 acres in grape-vines, from which are made 6,000 gallons of wine, and 4,400 gallons of brandy; 20,000 gallons of beer are also annually manufactured in this county.

The live stock includes 400,000 sheep, 13,000 horned cattle, 9,000 hogs, 5,000 horses, 600 mules, and over 600 Angora and Cashmere goats.

Among the improvements in the county are nine saw-mills, one with water power, and eight with steam power, which saw 35,000,000 feet of lumber annually, and grinding in the same length of time 6,000 bushels of corn; one mining ditch, five miles in length; seven irrigating ditches used over 400 acres of land; and forty-one miles of railroad.

The real estate in the county is valued at $2,000,000; the improvements are valued at $1,000,000; the personal property is valued at $1,500,000; making the total wealth of the county $4,500,000. However, the difficulty which the Assessor invariably experiences in ascertaining the value of property is well known, and it is generally safe to put the valuation at least a quarter more than his figures.

Tehama County has an estimated total population of 7,000, of which 2,400 are registered voters, and 700 are census school-children.

SISKIYOU COUNTY.

Siskiyou County was organized in 1852, and contains 3,040 square miles. It is bounded on the north by the State of Oregon; on the east by Modoc County; on the south by Shasta and Trinity Counties, and on the west by Humboldt and Del Norte Counties. Its lying so far from the commercial centre of the State, and in so broken a country, has tended to keep Siskiyou in an undeveloped state, and only of late years has the annual Assessor's report carried the promise of agricultural advancement, or, indeed, attention to any interest save that which first drew adventurers to the county, that is to say, mining.

TOPOGRAPHY.

In this county, two great ranges of mountains meet—the Coast Range and the Sierra Nevadas. The former, under the local names of the Salmon and Siskiyou Mountains, are in the western part; while the outlying ranges of the latter are in the southeastern part of the county. Mount Shasta, the grandest peak in the State, whose famous height has made this portion of California remarkable to her travellers—or to those of her travellers who do not hasten across the world to view the Alps with appreciative eyes which have never looked upon their own Shasta—is a part of the Coast Range, and is between the two ranges in the southern part of the county. The mount is 14,450 feet high, being perpetually hooded with snow. The valleys here are from 2,000 to 4,000 feet above the sea-level, the mountains all being among the highest in the United States. The Coast Range is, indeed, at its most picturesque in Siskiyou County, the summits being very unlike the rounded hills surrounding the Bay of San Francisco, for they rise, with their rocky formations of granite and slate, into ragged and precipitous peaks. The Sierras also consist in great part, in Siskiyou, of rough and rugged buttes, much of the county thus comprising cañons, gorges, ravines, abrupt mountain walls, precipices and sudden little valleys. Fortunately for the material interests of the county, this wild country is covered with magnificent forests of fir and sugar pine, while the valleys and level lands along the rivers are all extremely fertile.

In the northeastern part of the county lie lava beds, although the "Lava Beds" proper, of local Indian depredation history, are across the State line to the north. All of the country, in fact, in this northeastern portion of the States embracing Siskiyou, Modoc and Lassen Counties, is a high plateau, part of which is called the "Central Basin," having beds of lava divided by volcanic peakes. This plateau is from 3,500 to 4,000 feet above the sea level, having steep mountains rising still 10,000 feet higher. This whole table-land would seem to have been formed by some great volcanic overflow of a former period of history.

RIVERS AND LAKES.

This county includes a portion of the lake region of California, although Tule, Klamath, Haight, Goose, Cowhead, Surprise, Upper and Lower lakes, and others, are now embodied in Modoc County, Lower Klamath, a portion of Tule or Rhett, and several smaller lakes, are within the present limits of Siskiyou. Modoc was formerly the eastern part of this county, but the Legislature of February, 1873, organized it as a separate county, with its present name, thus taking from Siskiyou about two-thirds of her area, the lakes and a great deal of arable land surrounding them. In this eastern part of the county were also the localities having a historical interest as the scene, of the early encounters between the Indians and the settlers and garrison at Fort Bidwell.

Two great rivers start toward the sea from Siskiyou, the Klamath and the Sacramento, thus making it the divide between two divergent water sheds, one trending to the west, and the other to the South. Its streams, which are extremely numerous, empty, generally, into one or other of these rivers, though several creeks in the northeastern part of the county take their course into Lower Klamath and Tule Lakes. Shasta and Salmon Rivers and innumerable lesser mountain streams flow into Klamath River; while Castle Creek, Bear Creek and many other streams belong to the Sacramento River system, the most important being the McCloud River, which rises in Mount Shasta, and flows south into Shasta County, where it joins the Pitt River, just before the latter empties into the Sacramento. The McCloud River is one of the most picturesque mountain streams in the State, tumbling its waters, for some ninety miles, through stony cañons and rocky ravines, over abrupt cliffs and around little green valleys. It is a favorite fishing stream, and is the place of the fish propagating apparatus in this State of the United States Fish Commissioners.

RESOURCES.

Gold mining by placer methods first attracted settlers to this county, but mining yields less than formerly, and is not so extensively prosecuted as in early days. However, it has not been totally abandoned by any means, and is still in the foremost rank among the sources of revenue to the country, nearly a hundred mining ditches, aggregating some 600 miles in length, and six quartz mills, annually crushing over 40,000 tons of rock, being in active operation. Mining was at first confined to the beds of the creeks, and the development of even these claims was greatly retarded by the serious difficulty of travelling so long a distance from San Francisco, and transporting supplies through such a mountainous country. It was not until 1853 that vessels worked their way up the Sacramento as far as the present site of Red Bluff, Colusa being before that the head of navigation. Even from Red Bluff there was a long and tedious overland journey to the different mining localities of the northern part of the State, and supplies were all packed upon mules, roads not being established until after 1857, and very high prices for all necessities prevailing for some time afterward.

In addition to gold, silver, copper, iron, coal, and quicksilver are found in the county; and it is probable that quartz mining will be continued at a profit for years to come, as it is only recently in this section that the quartz veins, which must necessarily have supplied the placer deposits, have been looked for and worked. It is also only within the last few years that the deep gravel deposits in the mountains have been successfully or skilfully operated.

Quicksilver prevails in the southwestern part of the county, the cinnabar mines at Altcona, just over the boundary in Trinity County, yielding abundantly, and, when the price of the commodity was formerly higher, paying handsomely, even while they were worked with the most

primitive methods. Just at present, however, little is being done in quicksilver, the low prices prevailing, incident largely on the profligate modes of mining and of unwisely flooding the markets, serving to discourage owners.

Lumber is cut from the wooded hillsides, and is a principal source of revenue to the county, there being over a dozen sawmills engaged, which turn out every year four or five million feet of lumber, and two or three hundred thousand shingles.

The agricultural resource is an important one, and an increased acreage of land is being yearly cultivated. The valleys of the rivers, especially the Klamath, Shasta and Scott rivers, and the lake region, contain many thousands each of fertile land, all highly susceptible of cultivation. The fruits and vegetables of the temperate zone all do well, cabbages, onions and potatoes attaining their greatest excellence. The cereals yield abundantly, and the crops never fail, a sort of natural irrigation being supplied by the abundance of water in Summer, caused by the melting of the snow during the heatedterm upon the summits surrounding the farming districts.

The whole county is particularly adapted to stock raising, hay for Winter being raised upon the meadows along the water courses, while the hillsides are covered with bunch-grass and other nutritious feed. The mountain valleys all afford good Summer pasturage, but the fall of snow in Winter is heavy at their altitude. The greater part of the Government land is not yet taken up, and the average price of land in the county is $4 50 per acre. Good shooting for the sportsman is abundant, including deer and still larger game, while salmon, trout and other fish are numerous in the rivers.

COMMUNICATION.

Siskiyou is at present dependent upon stage lines, which are numerous and good, but the surveyed line of the California and Oregon Railroad passes through the county, and when the road is completed the interests of the county will be greatly advanced. The present terminus is at Redding, in Shasta County, and Yreka is reached from that point by stage, the distance being one hundred and twenty-two miles. The Altoona quicksilver mines, in Trinity County, are on the road between Trinity Centre and Yreka, and other good roads traverse the county.

CLIMATE.

The climate is pleasant and healthful, the Summer days being warm, the nights cool and sometimes frosty, while the Winters are never excessively cold. The mean annual temperature is 62°, ranging between the means of 43° in January and 81° in July. The annual rainfall averages 33 inches.

YREKA

Is the county seat, and is a town of 300 voters and 1,200 inhabitants, having some handsome and substantial buildings, and supporting hotels, members of the different professions, churches, schools, two weekly newspapers and a full quota of the trades and general merchandise stores. It is situated on Yreka Creek, in the western part of Shasta Valley. The site was located in 1851, making it the oldest town in this part of the State. It has always been an important one; being settled originally by miners, at the time of the gold excitement. It remained a popular mining town until discoveries in other places drew away the shifting portion of the population, and left a stalder element behind to found homes and permanently develop the district. The town is 451 miles from San Francisco, and 350 miles from Sacramento, being the headquarters of the Overland Stage Company, a comfortable trip by stage being made from Redding, a distance of 122 miles. The greater part of the travel between northern California and Oregon passes through the town, which is a great advantage to the place as a centre of trade. It is situated two thousand five hundred feet above the sea level, with a moderate and healthful climate, the flowers and fruits raised making the town additionally attractive.

SAWYER'S BAR

Is a prosperous town in the southwestern part of the county, in a valuable section, which, besides the town, includes several well-known quartz mines, and was acquired by Siskiyou County in 1873, when Klamath County was annexed to Siskiyou and Humboldt. This was by an Act of the same Legislature by which, however, the eastern part of Siskiyou was cut off to form Modoc County.

Fort Jones, 18 miles south of Yreka, with some 400 inhabitants, is an important business center.

Etna, in same valley (400 population), is a thriving locality, being headquarters for farmers, miners and the Salmon river freight.

POST OFFICES

In the county are Berryvale, Black Bear, Bogus, Callahan's Ranch, Cecilville, Cottage Grove, Edgewood, Ætna Mills, Forks of Salmon, Fort Jones, Gazelle, Hambourg Bar, Henley, Klamath Mill, Mount Shasta, Oak Bar, Oro Fino, Sawyer's Bar, Scott River, Selad Valley, Somes Bar, Willow Creek, and Yocumville. Smaller villages and precincts, and their number would almost force one to believe that in remote Siskiyou the inhabitants live in towns—are Boice, Butterville, Ball's, Belleville, Bestville, Cottonwood, Cedar Park, Dorr's, Deadwood, Douglas, Fairchild, Franklin, East Fork, Gillem, Gallion's Bar, Humbug Creek, Hawkinsville, Hooperville, Jones, Johnson, Lincln, Little Shasta, Moffitt, Ohio House, Quartz Valley, Scott's Bar, South Fork, Table Rock, Upper Soda Springs, Vineland, Von Bremer's, and Washington.

STATISTICAL.

There are in the county 134,000 acres enclosed and 29,455 acres cultivated, of which—

13,200 acres planted in wheat, yield	198,000 bushels.
8,350 acres planted in hay, yield	12,525 tons.
4,600 acres planted in oats, yield	115,000 bushels.
2,300 acres planted in barley, yield	46,000 bushels.
400 acres planted in potatoes, yield	600 tons.
250 acres planted in corn, yield	3,000 bushels.
75 acres planted in rye, yield	3,750 bushels.
75 acres planted in peas, yield	1,125 bushels.
70 acres planted in beans, yield	1,400 bushels.
60 acres planted in buckwheat, yield	900 bushels.
25 acres planted in onions, yield	1,500 bushels.

There are also produced 91,000 pounds of wool, 8,000 pounds of butter, 3,000 pounds of honey, and 2,500 pounds of cheese.

The fruit crop is not counted as a source of revenue, but it may surprise some, considering the distance north of Siskiyou, to know that 50 acres are planted in grapevines, from which are annually made 500 gallons of wine and 900 gallons of brandy. There are also three breweries in the county, making annually 35,000 gallons of beer.

The live stock includes 50,000 horned cattle, 40,000 sheep, 5,000 horses, 2,000 hogs and 600 mules.

Among the improvements in the county are 7 grist-mills, 2 with steam and 5 with water power, which make 22,000 barrels of flour, and grind 3,000 bushels of corn; 13 saw-mills, 3 with steam and 10 with water power, which annually saw 4,000,000 feet of lumber and make 200,000 shingles; 6 quartz mills, which annually crush 42,000 tons of rock; 98 mining ditches, 600 miles in length; and 20 irrigating ditches, valued at $30,000, and used in fertilizing 10,000 acres of land, valued at $100,000.

The assessed value of real estate in the county is $1,000,000; the value of improvements, $500,000, the value of personal property, $1,500,000; making a total county wealth of $3,000,000.

The population of Siskiyou County is 8,510, including 2,000 registered voters and almost 2,000 census school-children.

MENDOCINO COUNTY.

Mendocino, in the northwestern part of the State, is bounded on the north by Humboldt, Trinity and Tehama Counties; on the east by Tehama, Colusa and Lake Counties; on the south by Lake and Sonoma Counties, and on the west by the Pacific Ocean.

TOPOGRAPHY.

The nature of the county is extremely mountainous, the Coast Range occupying its entire extent, and rising, within its boundaries, into some of its highest summits. Among these mountains are Mount Linn, 4,000 feet high, Iron Mount, Cahto Peak, Sanhidrim Mount, Hull Mount, Snow Mount, Blue Rock Mountain, Mount John, Sanel Peak, Hill's Mountain, and Two Rock Peak. Among the mountains are many attractive and arable valleys, cultivated by the agriculturists.

Innumerable streams flow into the ocean, affording very good harbors at their mouths, which are used by steamers and coasting vessels during a greater part of the year. Still, the coast line of Mendocino is, upon the whole, a tolerably unbroken one, these numerous harbors not being very extensively land-locked, and the capes and promontories projecting being few in number, and not particularly marked in character. Among the most prominent points upon the coast are Point Arena and Point Cabrillo, while the most important of the inlets, which in some cases are beautiful sheets of water, and in all afford safe and commodious shipping points to the coasting trade, are Shelter Cove, Cuffey's Cove and Ferguson's Cove. A great deal of shipping is carried on, the county exporting lumber and the farm products, and having a constantly increasing trade.

The rivers of the county are almost too numerous to be counted, so many are the lesser creeks tributary to the more important streams, and the rivers of all sizes flowing from the mountains into the ocean. The well-known Russian River, which flows through so lovely and fertile a farming country, rises in the mountains in the southeastern part of Mendocino, taking its course in a southerly direction into Sonoma County. Eel River, which also waters very valuable agricultural lands, including Eden Valley, rises very near the source of the Russian River, and flows north, entirely through Mendocino and into Humboldt County. Besides these rivers, are the Navarro, Walhalla, Albion, Noyo, Rio Grande, Garcia, Tenmile and Little rivers, with the Pudding, Salmon, Greenwood, Alder and Brush creeks. These are all good-sized and important streams, mostly in the timber districts, and useful in the transportation of lumber.

COMMUNICATION.

Besides the coasting vessels, which carry on an extensive trade with the seaport towns, transporting to San Francisco great quantities of lumber, besides butter and other farm productions, communication is maintained by way of the North Pacific Coast Railroad, whose present terminus (Cloverdale) is in Sonoma County, only a mile or two south of the Mendocino County line. Stage travel connects with Cloverdale, the distance between that point and Ukiah, the county seat of Mendocino, being thirty-one miles. The line has also been surveyed for the San Francisco and Humboldt Bay Railroad, which, when completed, will traverse the entire length of Mendocino County, connecting Cloverdale, in Sonoma County, with Eureka, the county seat of Humboldt, and following the general course of the two great rivers, Suisun and Eel, which flow through so many beautiful and fertile valleys.

For private convenience in transporting lumber from the redwoods to the coast, Mendocino has also a number of short railways—probably being richer in this sort of private property than any other county in the State. Among them are the following: The Salmon Creek Railroad (narrow-gauge), connecting the mouth of Salmon Creek with Terminus, in the woods, and having a length of eight miles; the Gualala Mill Company's Railroad, connecting Bowen's Landing with a terminus situated on the north fork of the Gualala River, and having a length of six miles; the Mendocino Railroad (narrow-gauge), from Cuffey's Cove to Greenwood Creek, a distance of four miles; Jackson's Railroad, between Casper Creek and a terminus in the woods, having a length of five and three-fourths miles; and Pudding Creek Railroad, extending between Noyo River and Pudding Creek, with a length of one mile and a half.

RESOURCES.

The chief resource of the county is, of course, its great lumber trade, more than twenty sawmills being constantly employed in annually sawing the astonishing quantity of something over 50,000,000 feet of lumber and 15,000,000 shingles.

It is equally true that the hills are being slowly denuded of their forests, and the sheep ranges thus gradually widening, the number of sheep in the county, now over 300,000, constantly increasing, the annual yield of wool being over 1,000,000 pounds.

About 50,000 acres are under cultivation in the county, and three times as much is enclosed by fences. Considering the mountainous character of Mendocino, its showing as to agriculture is most excellent, and many of its valleys, along the water-courses, are among the garden spots of the State. Several hundred acres in this county are planted in hops, producing several hundred thousand pounds annually, and thus making this one of the few counties which furnish to brewers a home supply of a needed commodity. The greater portion of the county is still Government land, while the average value per acre of all the land is from $3 50 to $4 50.

CLIMATE AND POPULATION.

There is a snowfall in Winter over a great part of Mendocino, but the cold is never severe, the average temperature for January being 40°, while the Summers are extremely pleasant and without excessive heat, the average temperature in July being about 60°, making the annual mean a very moderate one and the utmost range between heat in Summer and cold in Winter of a limited nature, securing a mild and equable climate for the year round. The annual rainfall averages about thirty inches.

The population of this county is estimated at 12,000, and it may be said in passing, in connection with these figures, that there are here two inhabitants to the square mile, while there are fifty-eight to the square mile in the bay counties. The average in the State is six persons to the square mile, but this average rate varies very greatly in fact, in different localities, San Francisco County having 8,000 persons to the square

mile, while an area of nearly 15,000 square miles in San Diego and San Bernardino Counties has seven square miles for every white inhabitant. It may also be stated that only one-fourth of California has passed into the hands of individuals, while one-twelfth is fenced and one-twenty-fourth is cultivated. In Mendocino County a little over a third of the government land is sold, while of this latter portion, again, a little over a third has been inclosed by fences, while scarcely more than a fourth of that which is fenced in is under cultivation. These figures, which are not widely different from those of most of the other counties, show what a vast amount of land in California remains to be utilized when the press of population renders it necessary.

UKIAH.

The town was established as long ago as 1856, and it became the county seat in 1859, still occupying that position and having increased, steadily and substantially, in size, during the whole time. It is situated on the Russian River, in the centre of a beautiful and fertile agricultural district, known as Ukiah Valley. It is also in a central position in the county, and is the depot for the export of the wool, dairy and farm products of the pasture and farming country around. The distance from San Francisco is 121 miles, ninety miles being by rail and thirty-one by stage from Cloverdale. The climate is healthful, the location pleasant, and the town in every way a prosperous and well-built one, the Court House having cost something over $40,000. Five mail routes centre here. There are quicksilver mines in the neighborhood, and valuable medical springs of both hot and cold water abound, these springs being of particular value to sufferers from rheumatism, as well as effecting complete cures in cases of cutaneous disorders. The town is in an excellent sanitary condition, the inhabitants number about 1,500, some 500 being voters. Two newspapers are supported, the secret orders are all in a flourishing condition, and the different churches are all represented.

MENDOCINO CITY

Is situated on the coast, fifty-five miles northwest of Ukiah. It is seventy-five miles by stage from Cloverdale, and is reached also by the N. P. C. R. R. to Duncan's Mills, and from there by stage, a distance of eighty miles. Communication with San Francisco is also maintained by steamers and sailing vessels, the distance north from San Francisco being one hundred and sixty miles. The population of the place is eight hundred, and the principal dependence is the lumber trade, which is extensively engaged in in the vicinity, important quantities being shipped yearly to San Francisco. Mendocino Bay is only a slight indentation in the coast line, and affords an excellent harbor in Summer, but is too exposed for a Winter anchorage. The Noyo or Rio Grande River empties into the bay near the town site. Fisheries and saw-mills are almost equally numerous upon the river and bay, and the district contains good pasturage, in addition to the pine forests. The town is a prosperous one, supporting a weekly newspaper.

LITTLE LAKE

Is situated twenty-two miles from Ukiah, and is a town which was laid out in 1873, and has a population already of three hundred. It is an enterprising little place, the principal street being graded and gravelled, and the grounds of the County Agricultural Society having been established near, through the efforts of the Little Lake citizens. The town is in Little Lake Valley, which is some four miles in diameter, but is the trading post for some twenty-five square miles in the vicinity. It contains a hotel, a church, a Post Office, a flour mill, a lumber mill, four general merchandise stores, two stables, a carpenter shop, a drug store, a restaurant, a butcher shop, two blacksmiths, a wagon factory and two saloons.

COVELO

Is a highly prosperous town, located in the centre of a farming district, in the extreme north of the county, and which is seven miles in diameter in any direction, and is, therefore, called Round Valley. It is a trading centre for a region fifty miles in diameter, and has 250 inhabitants. It contains a hotel, two stables, a blacksmith, a dressmaking establishment and two saloons.

CAHTO

Is forty-five miles from Ukiah, on the Cloverdale and Humboldt stage road, and is the distributing point for Long Valley, in the northwestern part of the county, for mails and general merchandise. It has a hotel, a Post Office, two general stores, a blacksmith, a harness-maker and three saloons.

CUFFEY'S COVE

Is a well-known shipping point, being on the coast, and reached by the Pacific Coast steamers and by trading vessels in Summer. The town has three hotels, a Post Office, a stable, a shoemaker, a butcher, a restaurant, a barber, a dressmaker, a blacksmith, two general stores and two saloons.

POMA

Is a small but lively town of fifty inhabitants being the centre of trade for Potter Valley, and distant eighteen miles from Ukiah. It contains two hotels, two general stores, a Post Office, a blacksmith and a bootmaker.

OTHER TOWNS

Are: Albion, Anderson, Booneville, Big River, Bridgeport, Big Rock, Buchanan, Beall's Landing, Blue Rock, Calpella, Caspar, Christine, Comptche, Caroll, Carper, Central, Cow Creek, Cottonobee, Counts, Coyote, Eel River, Elk Creek, Fort Bragg, Farley, Fish Rock, Gravelly Valley, Galloway, Garcia, Gaskill, Gualala, Hopla d, Hermitage, Hot Springs, Indian Creek, Kibesillah, Little River, Low Gap, Lima, Long Valley, Manchester, Miller, Mill Creek, Navarro, Noyo, Ocean, Oriental, Potter Valley, Port Vallejo, Punta Arenas, Rancheria, Redwood, Round Valley, Sherwood Valley, Sanel, Sawyer's, Ten Mile River, Timber Ridge, Union, Westport, Willitts, Weight, Walker Valley, Whitcomb, Whitehall, Williams Valley, Willow and Yerkville.

STATISTICAL.

Fifty thousand acres are under cultivation, of which—

15,120 acres planted in hay, yield..... 20,148 tons.
12,350 acres planted in wheat, yield.....252,700 bushels.
9,080 acres planted in oats, yield.....186,300 bushels.
7,920 acres planted in barley, yield. .....194,240 bushels.
1,880 acres planted in potatoes, yield ... 5,300 tons.
480 acres planted in hops, yield.....729,900 pounds.
480 acres planted in corn, yield. ..... 10,150 bushels.
200 acres planted in rye, yield..... 4,200 bushels.

One hundred acres are also planted in grapevines, and two breweries in the county make annually 24,000 gallons of beer.

The live stock includes 310,000 sheep, 20,000 hogs, 15,000 horned cattle, 6,000 horses, 600 mules, and 400 Cashmere and Angora goats.

The farm produce includes 1,300,000 pounds of wool and 16,000 pounds of butter.

Among the improvements are twenty-one saw-mills, eighteen with steam and three with water power, making 15,000,000 shingles annually, and sawing 63,000,000 feet of lumber; five railroads, twenty-one miles in length, valued at $121,000; two toll roads, valued at $10,500; two telegraph lines, valued at $3,500; one mining claim, valued at $1,000, and five flour mills, three with steam and two with water power.

The assessed value of real estate in Mendocino is $3,000,000; the value of improvements is $1,000,000; the value of personal property is $2,500,000; making a total wealth of $6,500,000.

The county was organized in 1850, and contains an estimated total population of 12,000, 4,000 being registered voters, and 4,000 being census school children.

ALAMEDA COUNTY.

In 1853 Alameda was organized by the Legislature out of portions of Contra Costa and Santa Clara counties, and the county seat established at Alvarado. The county was, and is, bounded on the north by Contra Costa County, on the east by San Joaquin County, on the south by Santa Clara County, and on the west by San Francisco Bay. In 1853 the county was an unsettled and uncultivated region, where wild cattle roamed and wild mustard grew rank, and in 1880 it stands in importance and in public and private wealth second only to the county of San Francisco. Thirty years ago its own settlers, for the most part, little foresaw this amazing growth, for many a man in Oakland at that day refused to purchase for $300 blocks of land that are now worth more than $30,000.

NAME.

Alameda Creek, the largest stream of the county, rises in the mountains of the Contra Costa range, starting across the plains from the cañon near Niles, and so finding its way to the bay, near Alvarado. This stream was, between 1850 and 1853, the dividing line between Contra Costa County and Santa Clara County. Its banks being bordered, then as now, with cottonwood and willow trees, in the midst of an otherwise scarcely-wooded plain, made the stream appear to be a shaded avenue or walk, called in Spanish an "Alameda." At any rate, so it appeared to the Spanish pioneers who first entered this region, searching for the site for a mission, and they knew the territory as the "place of the Alameda." This circumstance gave to the new county, which was created in 1853 from portions of Contra Costa and Santa Clara counties, and which included the Alameda Creek, its name.

EARLY HISTORY.

Under the Spanish rule, the Mission of San Jose, in what is now Alameda County, was established by the padres on the 18th of June, 1797. In 1820 Don Luis Peralta, of the Presidio of San Francisco, was granted the San Antonio Rancho, five leagues of land, in consideration of his long services as a soldier, and of his large family. In 1842 he divided the whole rancho between his four sons, who already lived upon it, occupying an adobe house together, near the present site of San Leandro. The residence of Don Luis himself was upon another grant, near Santa Clara. The father with his sons rode upon their mustangs over the territory, deciding upon natural landmarks which might serve to designate boundaries, and make the four divisions as nearly equal as possible. The four sections ran from the foothills to the water, in parallel strips. The site of Berkeley, Oakland, Brooklyn and Alameda was at that time one vast oak-studded plain, growing mustard and wild oats, and ranged over by the vast herds of Peralta's cattle. Jose Domingo Peralta received for his share the most northerly section or division, which included the oak grove then called the Encinal de Temescal, now Oakland; Antonio Maria received the third section, now comprising Brooklyn and Alameda; and to Ygnacio was given the last or most southerly division, extending to San Leandro Creek.

Other grants in the adjacent Contra Costas were at the same time made, and these scattered Mexican families occupied their ranchos peacefully, meeting together semi-occasionally for some fandango, a bull-fight, or to transact some business. In 1835, a most interesting petition, still in existence, was made to the Governor by the settlers of these ranchos, praying that they might be put under the jurisdiction of San José de Guadalupe, instead of remaining under that of Yerba Buena (San Francisco). As a reason was set forth the hardship of abandoning their families for an entire year, to make the trip to attend to judicial business. The distance by land—a journey of forty leagues—was pointed out, and that to go by sea exposed them to the danger of being wrecked. And the impossibility of taking their families was mentioned, on account of the heavy expense of transporting them, and of the inability of Yerba Buena to shelter or otherwise accommodate them. And this only forty-five years ago!

The first white men to cross the bay and settle where Oakland now is, were the Patten brothers and Mr. Chase, who established themselves in 1850 in that part of Brooklyn once called Clinton. In 1851, Jas. B. Larue, a little east of them, at the embarcadero of San Antonio, settled and opened a store. Men, too, at this time were engaged in cutting down the redwoods which then covered the hills back of San Antonio. In all the county these were the only white men, excepting a few settlers at the Mission of San Jose. Others followed, however, fast enough, although these pioneers had troubled times. Questions soon arose between Government land and Mexican grants, and many paid twice for their land. Wild cattle, too, attacked their tents and knocked down their shanties. Necessaries were high and supplies uncertain, and in 1853 the fare upon the ferry to San Francisco was one dollar, and a toll was collected upon the bridge between Oakland and Brooklyn. In 1852, Adams, Moon and Carpentier, well known afterward, had appeared in the new town, which, several hundred having already collected, was incorporated before the end of that year and at the same time other points in the county began to be rapidly peopled.

TOPOGRAPHY.

The county features are of every variety, from the salt-marsh land bordering upon the bay, to the Contra Costa Mountains, rising in some points almost two thousand feet above the sea level. There are some thirty-five thousand acres of marsh tide lands belonging to the county, nor are they among the least valuable of her possessions, specially if one may judge by the fierce and wordy warfares which have been waged over them. Alameda is suited in every way to agriculture, besides being, by virtue of picturesque surroundings and near vicinity to the metropolis, particularly well adapted for suburban homes. From the bay is level land to the foothills, and these rise into the Contra Costa Mountains. Beyond these, and parallel to them and to the bay-coast line, is the Mount Diablo range. Between the two is a splendid extent of valley land, and innumerable smaller but equally fertile spots are among the hills. The most elevated summits are Brusha Peak, 1,742 feet above the sea, Mount Lewis and Mission Peak, in the southern part of the county. The two ranges are each about ten miles in width. The county was once much more heavily timbered, but it is not entirely denuded yet, the oak trees abounding, and buckeye, willow, madrona, sycamore, laurel and other trees growing thickly along the water courses and sometimes covering the hillsides.

The bay encroaches upon the county in the form of very numerous sloughs on so called salt water creeks. Alameda has no large rivers, but lesser streams are sufficiently numerous. The most important is the Alameda, and others, also rising in the hills and flowing into the bay, are the San Leandro, San Lorenzo, San Antonio, Temescal and Sunol. Artesian wells are numerous in this county and flow abundantly, while the San Leandro stream supplies the great reservoir of the Contra Costa Water Company, situated two miles back of San Leandro, where an extensive dam is built, forming a lake several miles long, from which San Leandro, as well as the whole city of Oakland, twelve miles distant, is supplied. In the southeastern part of the county is also a small lake, called the lagoon, into which Alamo, Tassajero and Positas Creeks empty, and from which the Laguna Creek flows into the Alameda.

RESOURCES.

The land is very generally a rich black loam, sometimes varied, however, by loose, sandy soils, and by districts where the adobe predominates. The cereals are all raised profitably, and in the Livermore Valley and Dublin vicinity are two districts which are unsurpassed as grain fields in the State, and with a yield of seventy-five bushels to the acre. A great deal of wheat is raised in the county, and vast quantities are shipped annually from the end of Long Wharf, Oakland. Some years ago the experiment was tried by a farmer of chartering his own vessel and shipping his grain direct to the foreign market, without the assistance of any middlemen at all, and this plan is now frequently followed, though perhaps this is the only county in the State where such a facility is afforded to and taken advantage of by the agriculturist. Fruit is a leading product, many of the orchards being far-famed, especially in Eden and in Alameda Townships. Some of these fruit farms return the remarkably high revenue of $1,000 per acre. Grapes are raised in the southern part of the county, and several hundred thousand gallons of wine and several thousand gallons of brandy made annually. Vegetable gardens, tilled by Portuguese and by the Chinese, as well as by American-born settlers, are also very numerous. There is quite a population of the Portuguese in Alameda County, they having come at the early day of the falling of the redwoods, and being, for the most part, comfortably located now on small but well-tilled and productive farms.

The hill slopes are used as cattle pastures and sheep ranges, and are also situated among these broken lands, covered so luxuriantly, through some seven months of the year, with young and nutritious grasses. The price of the land averages about $60 per acre. Mineral discoveries have been made in different parts of the county, and doubtless some of the coal claims located and already satisfactorily tested will some day be profitably worked.

After San Francisco, this county engages more extensively than does any other in the manufacturing industries—sugar, salt, soap, pottery ware, leather, coal oil, gunpowder, nitro-glycerine and other articles being made, and swelling the county's wealth to a very high figure. Including the railroad works, probably some $5,000,000 are represented in this interest alone. The following is a partial list of factories, without at all reckoning the smaller wagon, boot and shoe, and numerous other establishments. In Oakland and suburbs are: Three flouring mills, having a daily capacity of 320 barrels, representing a capital invested of $130,000, and employing 28 men; two potteries, representing an invested capital of $40,000; a marble works, representing $100,000, and employing 20 men; an incorporated stone company, with $10,000 invested; and incorporated jute factory, with $100,000 invested, making yearly 3,000,000 grain bags, and having 250 employés; an incorporated cordage factory, with $200,000 invested, making 2,500,000 pounds of rope annually, and employing 90 men; two tanneries, having invested $50,000 and employing 21 men; an incorporated fruit cannery, with $100,000 invested, a capacity of 4,000 doz. cans daily, employing 175 men; a smelting works, with $75,000 capital, reducing 30 tons per day and employing 25 men; a borax refinery, with $10,000 invested, a capacity of 1½ tons daily, and five men employed; an incorporated ice manufactory, with $10,000 capital, making 120 tons monthly, and employing 10 men; two breweries, representing $55,000, and making 10,000 barrels of beer annually; a steam laundry, with $100,000 invested, washing 18,000 garments daily, and employing 100 men; soap factory, with $500,000 invested, and 40 men employed; a water company, $1,000,000 invested, and 120 men employed; and a gaslight company, the cost of whose works was $500,000.

COMMUNICATION.

The county has nothing to complain of in this respect, being fully provided for. The county roads are all excellently kept, and furnish, in the vicinity of Oakland and also in the mountainous districts of the county, some magnificent drives of a highly picturesque and even wild character. Oakland has eight street railroads, intersecting the city and its suburbs, and the local and general lines of the Central Pacific, Oakland being the terminus for the overland trains, furnish the county with convenient transporting facilities. There is a line by the way of San Leandro, Niles and the Mission of San Jose, from Oakland to San Jose, and also one between these two points (narrow-gauge) by the way of Alameda, San Leandro, San Lorenzo and Ravenswood. The overland road, by the way of Stockton, goes through Brooklyn, San Leandro, Niles, Pleasanton, Livermore, Altamont and Midway, in this county, and the line by way of Martinez goes along the northwestern boundary of the county, through Oakland, Berkeley and West Berkeley. There are two local ferry routes across the bay between Oakland and San Francisco, and one between Alameda and San Francisco. As early as 1850, a small ferry ran between San Antonio embarcadero and San Francisco once a day, the fare being $1 per trip. In 1863 the present system of local railroad was completed as far as Broadway, Oakland, and six round trips were made every day, the fare being fifty cents per trip. The fare is now fifteen cents per trip. Twenty-three round trips a day are made, and communication is established, not only to Broadway, but to Brooklyn, to Alameda by two different routes, and to Berkeley.

TOWNSHIPS.

The county is divided into six townships—Oakland, Brooklyn, Alameda, Eden, Washington and Murray. Oakland Township, outside of the city, extends north through several miles of farming country, to Berkeley, the University, and West Berkeley, the town; to the Oakland race track and the grounds of the Deaf and Dumb and Blind Institute.

Brooklyn Township, including the town of Brooklyn, now East Oakland, contains twenty-four thousand acres, and extends from Lake Merritt and the Slough to San Leandro, and from the foothills to the bay. Just east of the town limits, Adams avenue, has some of the finest private residences of Oakland, and Fruit Vale has some famous orchards of apple, cherry and other trees. Among them are those of Mr. Dimond, Mr. Rhoda, Mr. Hopkins, Mr. Webster, Mr. Shumaker; and, near San Leandro, that of Mr. Farrelly. Grain and vegetables are raised in the township. It contains extensive manufacturing interests, and the well-known ladies' school—Mills's Seminary. It has also the shipping basin at the head of San Antonio Creek, which will be a great commercial

advantage when the harbor improvements are completed.

Alameda Township is the smallest in the county, and consists of a peninsula four miles long and one and one-half miles wide, bounded on one side by San Antonio Creek, and on the other by the bay. It is a level plain of sandy soil, covered with oak trees, and the climate being even milder than in Oakland, is fast becoming a favorite location for private residences. Vegetables and small fruits are extensively raised, and land on Bay Island farm, a fertile island belonging to the township and lying within the bay, realizes $500 per acre, when planted in asparagus and other early vegetables for the San Francisco markets. The town is a prosperous one, a suburb both of Oakland and of San Francisco, many of its residents being in business across the bay.

Eden Township is in the centre of the county, and has a milder climate than has Oakland, having less fog, and is the fruit-raising district of the county. The soil is also unusually rich, on account of the annual overflow of the streams which flow down from the mountains. The County Infirmary, with its farm of 124 acres, is in this township, between its principal towns of San Leandro and Haywards. These are both pretty and prosperous towns of one thousand inhabitants, San Leandro having been for seventeen years the County Seat, and Haywards is the resort for Summer visitors, and is the point of departure for the best roads leading into Contra Costa County, to Mount Diablo, and into the Amador and Livermore valleys. Salt making is a leading industry, the ponds for collecting and evaporating the brine being very numerous along the marsh lands.

Washington Township is in the southwestern part of the county, and is, in extent, eleven miles from north to south, and twelve miles from east to west. Like Eden, it has a marsh frontage on the bay, and rises up into the mountains. Mission Peak, the highest of the Contra Costa range, is an abrupt and angular summit 2,300 feet high, and Alameda Cañon, through which the stream flows and along which the railroad winds, is also a noteworthy natural feature, on account of the abrupt steepness of its cliffs and the beauty of its scenery. The Mission of San José, settled in 1797, is in this township, the old Mission Church still standing, although having been partially rebuilt at various times, as, recently, after the great earthquake of 1868, which was more severely felt than elsewhere in this neighborhood. Other towns in Washington Township are Alvarado, Centreville, Washington and Niles.

Salt works abound, and productive grain farms. Fruit is raised for shipment, and Shiron's and Clough's nurseries have more than a local reputation. The hills are used as sheep ranges, and there are nearly 50,000 sheep in the township. Grapes are also successfully cultivated by a large number of farmers, among the largest growers being Messrs. Beard, Ellsworth, Palmer, Stanford and the Mission. Mr. Palmer has 150,000 vines, and is constantly increasing the number, and his admirable and substantial vaults have storing capacity for 100,000 gallons of various brands of wine. Governor Stanford, at Warm Springs, has some 100,000 vines, making about 50,000 gallons of wine annually. This farm, of some 600 acres, is also cultivating the orange and other tropical trees. The climate of this township has been found well suited to the mulberry tree, and silk-worm culture will probably at some time be engaged in.

Murray Township is in the southeastern part of the county, and has no frontage on the bay, but is in and between the two chains of the Mount Diablo. It measures twenty miles from north to south, and twenty, also, from east to west, and it comprises one-third of the entire county. Its scenery is very fine, the rolling country covered with grass and dotted with magnificent trees of the white oak, sycamore and other varieties, having often all the appearance of an English park. Brushy Peak, near Livermore, is one of the highest eminences, though steep and rugged hills are not wanting in other parts of the township. The principal valleys are the Livermore, Amador, Suñol, Alamo and Tassajera. These valleys have a gravelly soil and are very productive, seventy-five bushels of grain to the acre being sometimes obtained. The cereals, with fruit and vegetables, are all profitably raised. Among the mountains are situated the Livermore Pass and the great Central Pacific Railroad tunnel. There are several coal mines in the township, among them the Corral Hollow, the Arroyo Mocho and the Summit, the two latter being successfully worked, while others, although of a good quality of coal, are permitted to be idle.

Livermore, on the railroad, with its thousand inhabitants, its hotels and other fine buildings; Pleasanton, with its delightful location, at the foot of the wooded mountain; and Dublin, set down in the midst of level yellow grain-fields, are the principal towns in Murray Township.

OAKLAND CITY.

Oakland is growing more rapidly than any city in the State, and has reason to be proud of its progress in the past, and prospects for the future. In 1850 it did not exist; in 1860 it was but a handful of houses on a very promising site, and in 1870 was a prosperous city of some 12,000 inhabitants. But in 1880 Oakland is a fair young giantess, attaining her growth at a tremendous rate of speed. Her population is about 60,000. Including her suburbs, she has 200 miles of opened streets. She has $5,000,000 invested in manufactures, supporting 3,000 people; $9,000,000 worth of property changes hands yearly; several million dollars are annually invested in street improvements and new buildings. Oakland has the finest climate and lowest death-rate (12.50 per 1,000) in America; with 28 churches, eight street railroads, and nine periodicals—daily, weekly, and monthly—a dozen most excellent free grammar and high schools, fifteen private institutions of learning of a high standard, and a university, with magnificent buildings and the studies of eight colleges complete, the whole course free to any scholar, man or woman, with no charge for tuition whatever. Oakland is the county seat, and has even agitated the question of being the State Capital.

Last year there were 1,200 houses erected in Oakland, including twenty-five large business blocks, $2,500,000 being expended in building, and $25,000 in street improvements. Among the recent improvements in the city are—the new public buildings, the free library, with its three reading-rooms, the free postal system, and the free street-market; and they are of a nature to indicate the prosperity and enterprise of the place.

The total valuation of property is $42,822,870, of which $39,105,894 is real estate and $3,716,983 personal property.

The new depot of the C. P. Road is a magnificent structure, upon which, with the tracks leading to it, a vast amount of money has been expended, and facilities for passengers greatly increased. The town is very generally looked to by the business men of San Francisco, and people of means elsewhere, as a most desirable dwelling place; and this on account of the educational advantages, fine climate, the picturesque scenery of the vicinity, and the general architectural beauty and horticultural attractions of the place. There are a great number of fine drives in and about the neighborhood, each several miles in length, and among them are the shaded and mountainous drives to the Fish Ranch, and to Piedmont Springs. Oakland, in truth, is essentially a city of homes, and for home-like residences combines every requisite to make it a most charming suburb to San Francisco. The increase in Oakland's population since 1873 has been at the rate of twenty per cent additional every year, and this of a most desirable class of residents. Four large churches have recently been

erected, at a cost of $120,000, the First Congregationalist being the finest in the State, having an auditorium 90 feet square, and having cost $80,000.

Other costly buildings recently erected are: The Gallado Hotel, on Eighth and Franklin streets, cost $100,000; the fire-proof Hall of Records, on Broadway, $75,000; the Central Pacific passenger and freight depot, foot of Eighteenth street, $30,000; the Camron block, on Fourteenth street, $25,000; the Miller block, on Twelfth and Franklin streets, $25,000; the Hannifin block, on San Pablo avenue, $25,000; the City Hall, rebuilt, $20,800; the Snyder block, on Ninth street, $20,000; the Dunn block, on Washington street, $15,000; the Orr block, on San Pablo avenue, $15,000; and the Atkinson block, on Seventh street, $15,000. A large number of fine residences, costing from $5,000 to $15,000, have recently been erected, the favorite location being upon the heights, back of town, commanding a view of the bay and the Golden Gate. During one year there have been erected 18 business blocks, costing $357,000; 6 public buildings, $175,000; 41 first-class dwellings, $375,000; 313 second-class dwellings, $783,000; 650 third-class dwellings, $565,000; 165 shops, etc., $215,000. Total, 1,193 buildings, costing $2,470,000.

The Masonic Temple, in course of construction, on Washington and Twelfth streets, is one of the finest buildings of the kind in the State, the lot costing $19,250, and the estimated cost of the building being $75,000.

The public school buildings are eleven in number, $47,000 having been expended in buildings and sites during the past year, and 112 teachers being employed at an average monthly salary of $78 to teach 10,000 school children.

The Fire Department has four steam engines, four houses and lots, six companies, 145 hydrants, seven cisterns, thirty-five miles of fire-alarm telegraph, gongs in the engine houses and thirty-three automatic fire-boxes.

The railroad company, from local passenger traffic:

In 1873 realized	$2,500,000
In 1874 realized	3,000,000
In 1875 realized	4,000,000
In 1876 realized	5,000,000
In 1877 realized	5,500,000
In 1878 realized	6,000,000

During the past year a total of something over 6,500,000 passengers were carried.

The city has a Post Office and two branch offices; five banks, four theatres, nine Lodges of the F. & A. M.; fifteen Lodges of the I. O. O. F.; thirty-one Lodges of other prominent secret societies, and twenty-nine miscellaneous local societies.

The cemeteries are four in number—Mountain View, St. Mary's, I. O. O. F., and Hebrew.

The prominent private institutions of learning, of the city and vicinity, are Mills' Seminary, Degan's Classical and English School, Morgan's Conservatory of Music, the California Military Academy, McClure's School, Golden Gate Academy, Snell Seminary, St. Joseph's Academy, Convent of the Sacred Heart, Convent of Our Lady of Lourdes, the Pacific Theological Seminary, St. Mary's Academy, Miss Fiela's Young Ladies' School, the German School, and the State Deaf and Dumb and Blind Institute.

The University of California, at Berkeley, is four and a half miles from Oakland, and is reached by horse-cars, by ferry and by railroad. Two hundred acres, with an average elevation of 400 feet, watered by mountain springs, and all easily irrigated, belong to the University. The water supply is in a reservoir of 38,000 gallons capacity, in the cañon, at a sufficient elevation to carry water over any building contemplated. The site has a diversified soil, suitable for agricultural experiments, and a most magnificent view through the Golden Gate. The University has a large endowment fund, comprising appropriations of over $200,000, the income constantly increasing with the rise of real estate.

The South Hall is of brick, 152x56 feet, and four stories high. It contains 34 rooms, six of which are 32x48 feet in size.

The North Hall is of wood, 162x60 feet, and four stories high. It has 28 rooms, the assembly-room measuring 43x58 feet.

The Agricultural and Mining Departments are very complete, and at present eight colleges are combined in the courses presented. They are the Scientific, Agricultural and Medical Colleges, and the Colleges of Mechanics, of Engineering, of Chemistry, of Mining, and of Law.

The College of Letters confers the degree of A. B., the College of Science that of B. of Ph., and the College of Medicine that of M. D. There is no charge for tuition, ladies are received, and pupils need only to be at least sixteen years of age and to bring satisfactory testimonials. Including all the courses, there are 514 pupils now studying, including a large percentage of ladies.

SUBURBS OF OAKLAND.

Berkeley, Alameda and Brooklyn are all so closely identified with the city, as to be rightly considered as suburban settlements. Berkeley, to the north, has a delightful situation, at the foot of the picturesque San Pablo range of hills. The climate is admirable and the view is very fine, while the site has a splendid growth of oaks. During the past few years a great deal of the land has been sold for residences, and the place has become one of those favored locations chosen by business men of San Francisco to reside in. The town itself is not an inconsiderable one, as it has five schools and three papers—two being College journals—a post office, a Lodge of Odd Fellows, and three of A. O. U. W. Near the bay are also quite a number of manufactories, including a boot and shoe factory, a soap factory, acid works, gunpowder works, a nitro-glycerine factory, a giant powder factory, a coal oil factory, two chemical works and a sulphur mill.

Alameda is a pretty town under the oak trees, with a population of five thousand, which has lately been increasing at the rate of 20 per cent annually. On account of the cheapness of its property and its mild climate, it is being sought for residence purposes, while the bathing establishments along the bay, recently fitted up at great cost, are attracting every Summer a very large number of transient visitors. The town has 2 weekly newspapers, 6 churches, 5 public halls, 4 public and 3 private schools, and 4 large bathing establishments. Among recent improvements are the Park Hotel, rebuilt at a cost of $35,000; the Kohlmoos Hotel, costing $40,000, and the I. O. O. F.'s Hall, costing $10,000. During the past year 280 private residences have been erected, at an average cost of $2,000, and these, with the expensive additions to the bathing and pleasure grounds, make an expenditure for the year in improvements of $1,000,000.

Brooklyn is no longer a separate town, but has become the Seventh Ward of Oakland. But adjoining Brooklyn, to the north and east, are several beautiful and populous districts, containing highly cultivated private property. Among those are the Piedmonte District, Highland Park, Adam's Avenue and Fruit Vale. This part of Oakland has also Badger's Park or pleasure gardens, Tubbs' Hotel, the jute mills or bag factory, a planing mill, flouring mills, two potteries, two tanneries, and several other manufacturing establishments. It has also the site, in the foothills, of Mills' Seminary, with its fine and costly buildings, its cultivated grounds and private chapel or church. This is a private school, under the direction of a Board of Trustees, and, having seclusion, a convenient and healthful location, a high course of study and efficient teachers, is the finest ladies' school upon the coast.

The assessment rolls show that the value of all the property in the county is $59,726,000. Mortgages, however, are to be deducted, leaving a cash valuation of $49,299,000, being still an increase of $5,350,500 over the valuation for last year.

SAN FRANCISCO COUNTY.

The county of San Francisco consists of little else besides the city. But though the smallest county in the State, it is by far the most important, containing, as it does, the metropolis, or chief commercial city of this coast. The county is a hilly peninsula, of sandy formation, containing forty square miles, and bounded on the north by the Golden Gate, on the east by San Francisco Bay, on the south by San Mateo County, and on the west by the Pacific Ocean. The average value of land in the county is $220 per acre.

EARLY HISTORY.

In 1769, nearly one hundred and twelve years ago, a party of Dominican padres, travelling by land and looking for Monterey, got so far north as to discover the bay of San Francisco, which received its name at that early day, being considered by Father Junipera Serra (who, with de Portala, Governor of the Californias, led the expedition), worthy to be named in honor of St. Francis, the founder of the Order of Dominicans. It is possible that the bay had already been entered by Sir Francis Drake, or by Viscaíno, both of whom had already sailed past the spot, in exploring the coast; but if so, there is no record of the event. In 1776 the Mission of Dolores was established, the old church still standing, and the Presidio, which still keeps its former name, fixed on the flat land near the harbor entrance. An interesting occurrence of 1796 may well be mentioned here. The Governor of California, Diego Borica, had determined to establish in upper California a third *pueblo*, or town, in addition to San Jose and Los Angeles, already existing. He therefore dispatched Don Pedro de Alberni to examine the territory and select a suitable site. Several localities were inspected, and Santa Cruz, near the present town, was chosen. And this is the opinion of Don Pedro, as embodied in his report, eighty-four years ago, concerning San Francisco: "In the district of the Presidio of San Francisco, fort or battery, or at the Mission, a league distant, there is wholly wanting irrigable land, and very little is suitable for grain. Water is so scarce that there is barely sufficient for the few families that reside at the Presidio, they supplying themselves from the few holes, from which, at intervals, and with great labor, they obtain it. Timber or wood is twelve or fourteen leagues away, and even enough pasturage for the little stock of the garrison is five or six leagues distant. All the wood that can be obtained for cooking is the scanty underbrush growth of the sandhills, and therefore I am convinced that *the worst place for a town in California is San Francisco.*"

The place, with its handful of soldiers and its mission establishment, retained its quiet, religious character until 1836, forty-four years ago, when, under the Mexican Government, the village of Yerba Buena was founded. In 1846, thirty-four years ago, the place was taken in the name of the United States, by Commodore Montgomery, war then waging between the United States and Mexico; and the plan was laid out of the present San Francisco. But it was the discovery of gold, two years ago, that made of it a city indeed; for men arrived overland and through the Golden Gate; ships with their cargoes came, and the city was built up, street after street, the city front filled in and substantial business blocks erected on the made land; the Pacific Mail and other steamship lines incorporated, and the passenger and freight traffic on the bay and rivers rapidly increased. The city is plainly still in its infancy, for all these dates are recent ones, and it was not until 1869, eleven years ago, that the Central Pacific Railroad united the two seaboards of America. It is when we realize how wonderful is this growth which has built a city in thirty years, that we ask, What may not the future bring us? For railroads are multiplying, traffic with the nations is increasing, a vast territory, capable of supporting prosperous millions is around, and that most flourishing of the eras, the manufacturing era, is hardly entered upon as yet by the young city. However, this town upon the Pacific Coast, like any other, has had its setbacks, more serious than the fires of early days; its seasons of stagnation and depression, its years when real estate and other values have depreciated, when more travellers have gone away than have come to our shores, and when the comparisons of expenses with treasure have borne rather a discouraging aspect. The city seems to be now just emerging from such a period, but though the figures do not show that great annual increase in riches over all previous years which San Franciscans expect to see, yet, perhaps, the shrinkage in values is more in mining stocks than in wealth, and a more substantial and a less fictitious basis is being established, and doubtless some valuable lessons have been learned by each of those great factors, labor and capital.

SAN FRANCISCO BAY.

The bay of San Francisco is sixty-five miles in length, forty miles being south of San Francisco, and twenty-five miles, known as the San Pablo Bay, extending north. Suisun Bay, connected with and extending east of San Pablo Bay, is twenty miles long, and the average width of San Francisco Bay, as a whole, is eight miles, the bay shore-line being over three hundred miles in length. The entrance to the bay—the Golden Gate—which is a gate of gold indeed, framed in crimson and roofed over with pale green, when the observer stands to the east and watches the sun setting through it, is a strait, six miles long and one mile wide, a fitting entrance to the magnificent sheet of water, the finest harbor in the world, within.

There are several islands in the bay, being Government property, and Goat and Angel Islands have their garrisons, while rocky little Alcatraz, just opposite the Golden Gate, has the Government Prison, and is still more extensively fortified. A commencement at fortifications which it would be extremely well at some time suitably to complete and equip, has also been made at the entrance to the bay by earthworks at Fort Point, Black Point and Lime Point. The great rivers, Sacramento and San Joaquin, empty into Suisun Bay, and the bay and river traffic, with its steamers, its growing towns and its wharves, is an extensive trade of itself. The most important bay inlets, affording anchorage

to vessels of large size, are at Oakland, Benicia, Vallejo and Saucelito.

SUBURBS.

The environs of San Francisco are charming in the extreme, and include Oakland, with Alameda and Berkeley, a suburb and a rival city in one; and San Rafael, Saucelito, and other lovely sites on the north bay line, these spots being reached by ferry; while down the peninsula, and reached by railroad, are San Mateo and Belmont, containing some of the most famous and costly residences of San Francisco millionaires; and the fair Santa Clara Valley, with its Garden City of San Jose. Over all this extensive territory have business men fixed their homes, going and coming morning and evening, the established conveniences of rapid railroad travel being such that some of these distant points are reached as quickly as would be a house in some points of the Mission and Western Addition of the city, by the owner, who so enjoys a two-fold, or city and sylvan existence.

These neighboring country places are also the resort of Summer excursionists, private parties carrying luncheons, and picnic parties with their bands of music, going in the morning and returning in the evening, almost every day in the season; sometimes spending the day upon a quiet beach or hill-slope, sometimes in one of the public gardens or parks, with its dancing floors provided, a dozen of which are located at the different towns around the bay, within a few hours' trip from San Francisco.

West of the city limits, upon the peninsula, are the famous Cliff House and the well-known Golden Gate Park. The former is reached by a drive of some four miles, having a fine view of the Golden Gate to the right, and of the ocean in front during most of the way. The building is a long, low wooden structure on the cliff, which is at the water's edge; and a few hundred yards in front of it is the Seal Rocks, just out of the water, covered with the finny tribe, clambering clumsily about or taking plunges into the breakers, and all the time uttering their strange cry—a howling bark. A favorite way to return from the Cliff is to follow the road by the beach, and so come through Golden Gate Park, with its miles of fine driving roads, its picturesque paths for pedestrians, its conservatory stocked with the rare and the beautiful among growing things, and its other attractions, so rapidly and wonderfully wrought out among the drifting sand dunes.

The rocky Farallones, thirty miles outside of the Heads, ought not to be entirely overlooked, well-known landmarks as they are. They are frequently visited by excursions or yachting parties, whose members find amusement in climbing about and noticing the thousands of sea fowls that make their homes on these rocks, or in watching the sea lions in their haunts at one side of the islands. The Farallones are also visited by men who gather for sale great quantities of the sea-bird eggs, and by hunters who capture the sea lions to ship them East and to Europe as curiosities, the price realized for the clumsy monsters being generally in the neighborhood of a thousand dollars.

THE MONGOLIAN ELEMENT.

In speaking of the curious features of San Francisco, Chinatown must be given a prominent place, occupying as it does a number of blocks in the very centre of the city. During the last month of the present Summer, nearly five hundred Chinamen arrived in the city, some destined, however, for interior localities; and about half as many left for China, some returning to their native land with their acquired fortunes, but more being domestic servants and others crossing the ocean on a visit. There are 185,000 Chinamen in the United States, 60,000 being in this State and over 32,000 in this city. There are in this city about 500 Chinese business firms, among them some 95 Chinese cigar factories, employing over 6,000 men. Besides these 500 firms, there are about 400 Chinese laundries or wash-houses. The Chinese places of business, such as the bazars and tea houses, are not strictly confined to Chinatown, being scattered through the business portions of the town; but almost all of the Mongolians, including many of the household servants, go into Chinatown to sleep at night, and although the several blocks occupied by them constitute a considerable slice of the middle portion of the city, it would be a matter of wonder to know how, within its limits, they dispose of their 32,000 bodies. But a visit to just one house would go a very long way toward solving the problem. Ordinary rooms, twelve and sixteen feet square, are redivided by frail partitions, windows or other apertures for the admittance of light, being deemed wholly unnecessary, and dark closets, holding each, from floor to ceiling, some dozen narrow and shallow shelves. And each one of these shelves is the dressing-room, the bed-room and the bed of a Chinaman. Thus an ordinary house, well packed, will hold quite a number of these swarming humans, and since they are accustomed to utilizing space, coming from a country which is itself over-crowded, they burrow and dig in the ground, and extending under the house already containing hundreds of people, are dark and narrow passages in the ground, often not paved at all, and opening into more cramped and box-like rooms, with their rows of shelves, this whole underground department reeking alike with noisome odors and dripping, uncleanly moisture. Chinatown is very curious, with its chattering, scant-garmented and queue-bedecked denizens, and has frequent visitors to its queerly-decorated theatre, its Joss House, with the hideous almond-eyed gods and the fine specimens of bronze carvings, its restaurants, with their massive black oriental furniture, or the pawnbroker's quarters, with every curious Chinese article under the sun, from the peculiar musical instruments, perhaps including the famous bandolin, to the innocent looking fan, which sheathes a sharp dagger. But the most careless visitor cannot go away unconscious of some of the peculiar unpleasantness of the Chinese quarter, for the broadest streets have a strange, unwholesome odor, and the most respectable of the side alleys, where fish-stalls and other markets are established, are so strongly redolent of the unpleasant, that they are almost impassable, even if the daring visitor have not of small-pox and leprosy sudden visions sufficient to make him flee.

REAL ESTATE AND BUILDING.

The assessed value of real estate and personal property in the city is $253,000,000, which is a slight shrinkage in value in a year's time, but the decline in mining stocks alone would account for this difference and leave the real wealth of the city unaffected. And if the $12,000,000 paid out by San Francisco during the past year in stock assessments had been raised by direct taxation on her property, it would have amounted to a rate of $4 75 on every $100. What interest, invested in manufactures, this sum would have speedily realized its investors, it is hard to say.

The real estate sales in the city last year were over 2,600 in number, and realized a sum of nearly $15,000,000. The present number of buildings in the city is estimated at 30,000, of which 5,000 are of brick. About 800 dwelling houses are put up annually, with the occasional erection in the elevated portion of the city of one of those private "palaces" of capitalists, who expend several hundred thousand dollars and employ a small army of mechanics in building and furnishing their

homes. Several private buildings of this expensive character are now about to be erected. Among the recent costly public buildings are the Conroy & O'Connor Block, on Market street, which cost $110,000; the New Dashaway Hall, on the corner of Post and Dupont streets, and many more substantial and expensive edifices on Dupont and Front streets, with still others in the course of erection on Market and other business streets. The new Church and College of St. Ignatius, fronting on Hayes street, Grove street, and Van Ness avenue, is the largest building of the kind in the State, and of a lofty and imposing appearance. The church will seat 3,000 people, and the Hall for lectures will seat 4,000. The cost is nearly one million dollars. In the near future will be erected the Phelan Block, a handsome and costly structure, on the corner of Market and Dupont streets, and will also be realized the projected extensive and complete sugar refinery, which has already been contracted for by a capitalist of the city, who will make it the leading enterprise of the kind in the country, and one of the foremost manufactories of the city.

POPULATION AND CITY DEPARTMENTS.

The population of the city increased 65,500 in 1875, but the yearly gain has been less marked since that time, the probable present population being 330,000. Nearly 90,000 passengers arrive by land and sea annually, while the departures are generally considerably less. During the last month of the present Summer there were 3,681 arrivals in the State, 2,689 being by sea and 992 by rail; 3,609 departed, 2,930 by sea and 679 by rail. Of the arrivals by sea, 473 were from China and Japan, and 225 departures were for those countries. It is supposed that there will shortly be gains in the arrivals of white immigrants, as New York has had this year an unusually large number of such arrivals, many of whom will doubtless come to California. On the other hand, there is reason to believe that the Mongolian immigration will largely decrease in the near future.

There are in the city over 5,200 census school children, and over 38,600 enrolled in the public schools, which is an increase in enrolment, in a year's time, of over 1,300. Several thousand children in the city, probably nearly ten thousand, attend the private schools and colleges. In the public schools 672 teachers are employed, an increase of forty in a year, and $674,000 is the annual amount paid in teachers' salaries, an increase in a year of $74,600. The total school expenditure for the year is $970,000.

The business of the mail carriers, which always bears some proportion to the population, includes 8,864,000 mail letters and 1,554,000 city letters delivered, and 4,564,000 mail letters and 2,000,000 city letters collected, during the past year.

The cost of street work for last year was $1,242,000, of which $912,000 was for the permanent improvement of the public streets.

The Police Department of the city has 5 captains, 12 detectives, 25 sergeants, 12 corporals and 273 regular patrolmen.

The Fire Department has 276 officers and men, 63 horses, 21,000 feet of carbolized hose, 1,247 hydrants, 55 cisterns, 11 steamers, 8 hose carriages, 4 hook and ladder trucks, and the fire-boat Governor Irwin.

EXPORT AND IMPORT.

The foreign trade of the city is continually increasing, and is excelled only in New York and Boston. Between $34,000,000 and $35,000,000 in value is annually exported, the principal item being the breadstuffs, some $15,000,000 being received annually for wheat. It may be interesting to know that last year our flour went to the following countries, in the order, as to quantity, in which they are named: Great Britain, China, Central America and Panama, the Pacific Islands, Japan, Australia, the Russian possessions of Asia, British Columbia, Mexico, Germany, New York and South America. Wheat was shipped to the following countries, arranged in order according to the amount which was sent them: Great Britain, Belgium, France, Australia, Spain, South America, New Zealand, China, Germany, Hawaiian Islands, British Columbia, Tahiti and Mexico. By this list it is seen that we contribute breadstuffs to nearly every country of the globe.

The gold and silver export last year amounted to nearly $35,000,000 sent away by sea, while $23,000,000 worth of merchandise was sent East by rail. There was a decline last year of nearly $19,000,000 in the value of our total exports, but the gain in the export of merchandise was over $4,000,000.

Nearly a thousand vessels enter the port in a year, and over a thousand are annually cleared, the total import duties amounting to $8,000,000 annually. The receipts of treasure in the city last year, silver bullion, gold dust and bars, and coin, amounted to $70,000,000. The coinage of the Mint amounted to 2,037,800 gold pieces, with a value of $36,209,500; of silver, there were coined 14,088,000 pieces, valued at $13,977,000; the total value of the year's coinage being $50,186,500, an increase over that of any previous year.

HOTELS AND OTHER LOCAL FEATURES.

The city is famous for its hotels, and there are seventy-seven within its limits, besides the still more numerous boarding houses. The Palace Hotel, which was planned and built under the auspices of Messrs. Ralston and Sharon, and which is sometimes called "Ralston's Monument," is the most remarkable building of its kind in the world. It is a huge, massive and yet elegant structure, measuring 304 by 275 feet, and occupying a whole block in the heart of the city. Its peculiar feature is a carriage court in the centre, entered from the street by a carriage entrance fifty feet wide, roofed with glass at the top of the building, and being surrounded at each story by a gallery twelve feet wide, upon which the rooms of the different elevations open. The dining-room is 200 by 55 feet in extent, the pavements of black and white marble tiling, the windows and other enclosures of large plate glass, the doors and other woodwork being solid and cabinet finished. The building is seven stories high, with ample accommodation for 1,100 guests, with sunshine in every room, and the gas and ice used in the establishment manufactured in the cellar, and the water supplied from two artesian wells.

The Baldwin Hotel, though not so large, is fully as elegant in its furnishings and conveniences, and is famous for its cosey and beautiful little theatre, with special entrances, aside from the public entrance on the street, from the different floors of the hotel, for the particular convenience of the guests.

The Lick House was opened in 1861, being substantially built, and as well kept and patronized as when first opened. The Russ House was also opened in 1861, though Christian Russ, its founder, landed in the city in 1846. It cost $200,000, and is now worth $1,500,000. The land upon which it stands, two fifty-vara lots in the very centre of the city—but in 1846, before the city front was filled in, being very near the wharves—cost only $16 each. This is one of the best paying hotels in the city, being frequented by the miners, farmers and business men of the coast.

The Cosmopolitan was opened in 1862, and had, in 1870 the first elevator in the city.

The Occidental was opened in 1862, but has been lately refitted, and its billiard-rooms, reading-rooms and office have no superior in the city hotels, and are a favorite resort.

The place has many other features besides its hotels, which may well surprise strangers who come to the rapidly-built town expecting to see the roughest evidences of its recent birth, and

find, on the contrary, that it is one of the foremost cities in the world in civilization, in evidences of wealth and of commercial importance.

The city has newspapers printed in nearly every language, and to promote almost every creed and interest imaginable. Among the nationalities represented are the German, Russian, Scandinavian, French, Spanish, Hebrew, Irish, colored, Italian and Chinese. The Humanitarian, Liberal, Catholic, Presbyterian, Baptist, Methodist, Jewish, Temperance, Literary, Banking, Political, Agricultural, Commercial, Theatrical, Woman's Rights, College, Humorous, Mining and Scientific, Musical, Odd Fellows, Wine, Grocers, Law, Medical, Children's, Real Estate, Statistical, Mining Stock, Watchmakers, and other interests have their special organs. There are 18 daily, 42 weekly, and 22 monthly, besides a number of semi-weekly and semi-monthly publications.

Strangers in the city are invariably taken to view Woodward's Gardens, with their extensive underground aquarium and other features, the New City Hall, the Stock Boards, with their strange, not to say wild, side of human nature; the markets, attractive particularly during the holidays, and the wonderful wire-rope railroads, travelling without the slightest visible means of motion, with their loads of passengers, straight up and down the almost perpendicular hills, over which many of the streets of San Francisco run.

The city has 15 Courts of Justice, 91 churches, besides chapels, and 15 private colleges and schools. There are 42 banks, 3 gaslight companies, 8 ice companies, 21 railroad offices and companies, beside the Eastern agencies, 23 lines of bay and river steamboats, 13 street railroads, 10 water companies, 7 telegraph companies, 2 telephone companies, 1 stone and 2 floating dry docks, 6 public libraries, with nearly 160,000 volumes, 56 public and 120 private schools, 17 places of amusement, 3 art galleries, 8 cemeteries, 800 gold and silver mining incorporations, besides coal, sulphur, petroleum, quicksilver, copper and other companies, and 114 benevolent societies, most of them having many local lodges each. The Masons and the Odd Fellows each have 40 Lodges in the city. There are 14 religions, 30 temperance, 89 protective and 46 literary, besides social, military and other societies.

There are twelve steamship lines, besides the local bay and river routes. The Oakland and San Francisco ferries are well known for their convenience and elegance, there probably being no ferry boats in the world which are so complete, while the bay scenery of the short trip, upon a clear day, may vie with famous views upon the Mediterranean. The Occidental and Oriental Steamship Company, established under the auspices of the Central Pacific and Union Pacific Railroad Companies in 1874, connects San Francisco, Yokohama and Hongkong, using the fine ocean steamers Oceanic, Belgic and Gaelic, and carrying a limited number of cabin passengers and a large number of steerage passengers, besides merchandise. We export to China flour, quicksilver, canned goods, leather, household utensils, hardware, codfish, shrimps, liquor, yeast, and large quantities of treasure. In return, we receive tea, rice and burlaps.

CITY MANUFACTORIES.

The city has 312 incorporated companies. Among the manufactories are the following:

Manufactories.	Number.	Men employed.	Value of Annual product, etc.
Cigars	220	5,500	$7,000,000
Clothing, etc	131	5,930	5,805,000
Leather, etc	51	754	885,000
Wagons, etc	50	400	1,006,000
Beer, etc	42	660	3,250,000
Silverware, etc	42	512	1,500,000
Furniture, etc	39	1,840	3,650,000
Marble	29	300	1,060,000
Rope, Belting, Sash and Door	26	838	3,821,000
Borax, Salt and Soap	24	444	1,780,600
Bellows, Coffee Mills, etc	19	147	1,379,000
Iron Works	17	1,700	4,700,000
Brooms, etc	16	200	273,000
Boxes, etc	14	640	1,100,000
Tools, etc	13	128	464,000
Brass Works	11	240	400,000
Matches, Willow-ware, etc	10	190	520,000
Macaroni, Malt, etc	10	88	476,700
Chemical Works	6	72	700,000
Candles	6	175	570,000
Billiard Tables	5	90	150,000
Glass Works	3	136	335,000
Artificial Stone	3	25	125,000
Windmill Factories	3	30	61,000
Powder Mills	2	60	747,500
Woollen Mills	2	700	1,800,000

There are, also, one shot tower, one carriage-spring factory, one gas meter factory, one glue factory, one oakum factory, one wire works and one rolling mills, aggregating 512 men employed and $2,100,000 worth of annual product. This makes, of all the work above enumerated, a total yearly manufactured product of over $55,000,000.

There are also in this city twenty-nine native wine and liquor establishments, fifteen planing mills, twelve powder works, six oil works, thirteen ship builders, nine flour mills, employing 300 men and making annually 512,000 barrels of flour, besides meals, etc.; one linseed oil factory, employing fifty men and making annually 800,000 gallons of oil, and one mirror factory, employing eight men and making 25,000 square feet annually.

THE ORANGE.

By W. S. CHAPMAN.

It is extremely difficult in a single article to seize and hold constantly in view even the salient traits of a subject which has a horizon as wide and distant as that of vegetable physiology itself. Its intelligent discussion, no matter from how practical a standpoint, is perhaps too prone to avert its regards from the field to the closet, fain always to occupy itself with physiological problems that have long exercised and divided the world of science.

In Southern California, as far as my information extends, the orange is multiplied only through two of the several means known to cultivators, *i. e.*, by its seed and by budding. Each of these methods shows now its muster of ardent advocates, but the following of the bud is much against it. Only a little while ago a great many the larger, though at one that the battle was sore stigmatizing this "new" thing as an invention of interested and unscrupulous nurserymen or of speculative amateurs, regarded it as an attack upon the, somehow, vested rights of the seedling, and cried out against it in the spirit of that far wail, "Great is Diana of the Ephesians."

While the cultivators of the orange in our time have believed, and possibly do now, budding to be not only of modern origin, but a delusion and a snare, it is curious that, as late as the early part of the eighteenth century, European cultivators maintained the diametrically opposite opinion, holding the sweet orange not to be a species and incapable of reproducing itself from its seeds. To undeceive the Europeans it required one deadly sweeping frost, and another partially destructive one.

Thus we see the scales are exactly balanced. The Californian combats budding, in its application to the orange, as a new and dangerous folly, and yet a little while ago the European looked upon the sweet fruit of a seedling orange as a freak of nature or a prodigy, and expended much ingenuity and erudition in explaining the phenomenon, referring it to various causes, such as the propitious influences of climate and temperature, the conduciveness of the peculiar characteristics of particular soils, the introduction of sweet fluids into the circulation of the tree, the steeping of the seeds in sugary solutions, and, finally, primarily to the devil himself, and secondarily to man in league with him.

There are to the orchardist several cogent reasons for preference of the budded over the seedling tree. The seedling puts forth many branches, takes a comparative rest every other year, and, in its year of fruitfulness, so overloads itself that it is hardly, by help of props, enabled to stand up under its burden; so that biennially there is great disparity in the organization and development of its fruit, showing at once lack of vigorous fecundation and the inability of the tree to nourish and maturate its immoderate crop. Hence, it gives a very large proportion of small, sour, and poorly organized oranges, which are not only not a source of profit to the orchardist, but the immediate cause of his succeeding short crop, inasmuch as they leave the trees in a state of exhaustion. The proper and more significant name for that is called "rest." For it must be remembered that an over-abundant crop not only consumes all the organizable matter in the leaves, but, by its continuous exhaustive demands, prevents them from accumulating supplies for use of future flowers and fruit. The seedling, too, is very thorny, and its thorns, while not infrequently a source of sharp pain even to the gloved picker, inflict, under the agitation of the wind, serious injury upon the fruit.

Cross-breeding is constantly occurring in every grove of trees, giving rise, through the seed of their fruits, to numerous varieties, while it is well-known to gardeners that choice fruits are rarely reproduced by their seeds. So that the prospect of procuring even a few trees of as good fruit as that from which the seeds destined to produce them are obtained, is distant and uncertain.

Again and more strongly as against the seedling, sweet oranges are very seldom cultivated in plantations, isolated from other members of their family, and they attach themselves with great facility by hybridization, to the bigarde or sour orange, to the lemon and the citron. Hence, in the sowing of seeds, or the acquisition by purchase of young trees, the orchardist has no security against the introduction of mules into his plantations; and, more, the experience of the writer is, that these hybrids are slower than the true orange to proclaim themselves in bearing.

To the landscapist, with its towering top and broad girth, "not to be embraced," the seedling is indeed a magnificent tree, and, in closing the case against it, fairness requires the statement—my observation puts me in antagonism to the general belief that the fruit of the budded tree is always larger than that of the seedling. Given to both a crop in suitable proportion to their respective fruit-bearing superficies, the fruit of the seedling will average in size, though not in uniformness, with that of the budded tree.

When a bud from one is united to the stock of another tree, which is subsequently discrowned to the point of the bud's insertion, and kept free from all growth proper to itself, and thus forced to expend all its energies in the development of the bud, the resultant tree is called a budded tree. Every bud thus placed preserves its individual organism, that is to say, the fixed constitutional forms of its parent, and will die rather than depart from them, giving, always, leaf, branch, stem, flower and fruit identical in kind with those of its parent, and exhibitings susceptibility of melioration on one hand, or deterioration on the other, only through those external influences which would similarly affect its parent similarly situated. Their union is a confederate league, the supreme law of which is the inviolate autonomy of each. Coadjutive and existing by and through and upon each other, the internal economy of each is as distinct and free from domestic interference as if they were miles asun-

der. All contributions from one to the other are received, adapted and applied to the single predetermined and stable uses of the recipient. Sour secretions, if such there be, to the ends of sweetness and sweet to the ends of sourness.

Obstinacy of opposition to this principle, even with those unacquainted with the rudiments of vegetable physiology, will be much softened under a closer and more painstaking observation and study of the differing habits and requirements of the several species of the citrus family. If we superadd to the results thus obtained some knowledge of the vital actions of plants, it will be found numerous exceptions are apparent only, not real, and that, so far from assailing the rule, they concur in the work of its elucidation and establishment.

The manifest unreason of expecting to renovate a morbid stock, by infusing the fresh sap of a healthy bud into its sickly and decomposing tissues, has not prevented the advocacy, in certain quarters, of such a doctrine. A healthy bud cannot impart soundness to a diseased stock, nor can a sound stock correct a weakly organized bud; but on the contrary, restricted to the support of such an one, the stock soon falls into a sympathetic condition, and perishes with it.

Nature has signalized her displeasure at the appearance of hybrids in her kingdom by making their reproductive powers *nil*, and while withholding the fertile principle, she seems to have implanted in the constitution of the tree the seeds of early decay. Hybrid trees, in a seedling orchard of the writer, now budded, which bore in their big leaves, conspicuously developed that distinguishing trait, the winged petiole of the true orange-leaf, were valueless for their fruit, later than the pure orange in bearing, and have exhibited unmistakable symptoms of decay under the process of discrownment and budding. A hybrid is a monster in Nature, and presumably distort in the grouping and texture of its internal organs, so that a pure bud on such a stock would be required to adopt its cellular tissue to those of a monstrous organism and to establish communication with ducts or canals incongruous to its own, either too much blocked or too open, and hence it would languish under hunger or become dropsical under engorgement.

Gallesio says, as its skin thickens the lemon removes itself from its type and approaches the citron. If thickness of rhind be proof of hybridity, the witness is overwhelming in the case of the average California seedling lemon. We know it to be diseased, and the writer has long been persuaded that its morbid condition, while aggravated by injudicious treatment, is properly attributed to the inherent defects of its organization, *i. e.*, to its hybridity. The pure lemon stock is now used for the orange in various parts of Europe and of Asia. Prof. Lindley expressed the preference of European gardeners, when he pronounced the lemon a better stock for the orange than the orange itself. That this partiality is not founded upon the exigencies of conservatory culture is evidenced by the employment of this stock in out-door plantations under climates congenial to the orange.

Several years ago the writer imported from the nurseries of Mr. Thomas Rivers, of England, a number of orange trees on lemon stalks, which were planted in an orchard of seedling oranges, and treated in respect of water and all else just as the seedlings were. It happened that one of these, a blood tree, and a bud from it, placed on an orange stock, produced fruit, for the first time, the same year. No one, unacquainted with the history of each, would have hesitated to pronounce the fruit of the bud to be *toto coelo* different from that of the parent tree, so inferior in every sense, except size, was the fruit of the tree to that of the bud which it had furnished. In fact, the original tree (on lemon), having been irrigated up to the season of Winter rains, became so sated with water it could not decompose or dissipate the superabundant supply to the point of maturation of its fruit. The top of the tree being orange, and the point of the bud's insertion at the surface of the ground, of course the perspiratory power was orange. This did not happen to the orange trees growing on their own roots, around this one on lemon stock, nor to the orange tree, to the full as copiously watered, on which the bud had been placed. Hence, it seems conclusive, we are remanded to the roots of the lemon for the cause or causes of this difference.

We know the several species of this family have their partialities as to soils, that they differ in degree of sensitiveness to cold, are not equally capable of enduring sudden transitions of atmospheric and terrestrial temperatures, are diverse in their requirements of moisture and, presumably, in their powers of transpiration and in their methods and capacities for absorbing and storing water. Now, a plausible reason for the difference in character of the fruit, noted above, may be found in the capacity of the lemon for storage, and, while it may be all a truant fancy, I believe the lemon to be provided, in its roots and stem, with receptacles, in which water is stored for its use during the long drouths of its habitat, just as the stomach of the camel is peculiarized by the presence within it of numerous cells or reservoirs, into which water is received and preserved fresh for the distant requirements of the animal. With one notable disagreement, however, the camel can exercise its own election, when led to drink, while the tree, or rather its roots, when placed in water, have no choice but to absorb to repletion. Lest this be considered poetry, it may be well to remind the reader that the researches of botanists have far over-topped it by many romances from the real life of vegetables, as, for one example, in the instances of a dioecious water-plant; the male, when the hour of its bridal is arrived, detaches itself from its stem and swims to the welcoming arms of its mate, in which, the brief history of their loves accomplished, it dies and they both sink, in still unbroken embrace, beneath the waters which witnessed their nuptials.

As previously stated, experience shows that, for reasons inherent in their constitutions and possibly always to elude the grasp of analytical research, special plants prefer special soils. Peaches and cherries on almond and mahaleb stocks succeeded perfectly in the calcareous borders of the rampart gardens of the Rouen, while the same buds in the same borders on plum and cherry stocks fell into a languishing state, and vice versa, in the same gardens, in borders composed artificially of loam, the same buds on almond and mahaleb became sickly, while when worked on plum and cherry they throve and flourished in the loam. We know the peach in England grows much better on the plum than its own root, not because the plum imparts to the peach any of its power to resist cold, but for the simple reason, the plum, a native of that country, and constitutionally adapted to the low temperature of its soil, unlocks the fountains of its sap under a degree of warmth which is inadequate to arouse the excitability of the peach. Again, in France, Italy and the United States, the temperature of whose soils approaches that of Persia, the habitat of the peach, this tree is multiplied on its congener, the almond, and also grown upon its own roots.

It is a rule in horticulture that the first fruit of a seedling shall not be held conclusive as to the quality of its subsequent product. The first fruit of the black eagle cherry, reputed one of the best in England, was pronounced worthless in Committee, and Mr. Knight, *Primus inter Pares* in horticultural authority, would have discovered it and budded the stem, but for the accident of its belonging to one of his children. This rule, being good as to seedlings, certainly applies, *a fortiori*, to budded trees.

If the promise on the correlations of the bud and stock be good, and the statements, by which it is sought to limit and explain those relations, be authoritative, a few obvious deductions will easily shape themselves into rules, especially with reference to the treatment of trees on lemon.

First—Set them in lands of the highest Winter temperature, with as near an approach to the nical dryness as Nature permits, and with the best natural under-drainage.

Second—It is important to avoid excessive and late irri.ation, the lemon's requirement of water, *ceteris paribus*, being to that of the orange surely in no greater ratio than one to three.

Third—To form lemon-seed beds, destined to grow stocks for budding, select fruit from healthy trees, standing remote from other species of the family, or employ cuttings composed of two parts of two-year-old wood, from vigorous branches of sound trees, and root them where it is intended they shall remain.

Fourth—Keep trees on lemon severely separate from those on other stocks, else it will happen either the one will die of saturation or the other of thirst.

Fifth—When the supply of water is problematical for the orange, and the assurance of the healthiness of the lemon perfect, employ it as a stock in preference to the orange.

Sixth—It is not wise horticulture to make the first fruit a conclusive test of the suitableness of the stock; nor of the size and flavor of the tree's subsequent product. Finally, it is not intended to include in these recommendations what are commonly known as Chinese lemon-stocks, nor, by this exclusion, to pronounce against them. No stocks of any species of plant are, without exception, free from disease, and, if a greater number, relatively, of this kind (Chinese lemons), be unhealthy, it may be due to the unacquaintance of our cultivators with the constitutional habits and necessities of that plant. While I would not dare to cite my experience either for or against it, it may not be improper to suggest that, if, as I believe, its power of horizontal growth be much disproportioned to that of the orange, its use ought to be restricted to the dwarf varieties, such, for instance, as the Tangieriene.

To recur to the budded tree as against the suckling—we have seen it is the general habit of a seed to reproduce its type rather than a variety. Distinctness and excellence of flavor and peculiarities of form are rarely, if ever, transmitted through the seed of the variety characterized by them. These can be surely perpetuated only by the bud, graft or other device of art.

A large majority of budded trees are virtually thornless, with a comparatively low and open head. This thornless condition affords the double gain of preserving the fruit from injury through puncturing, to which it is exposed on the thorny seedling, and of economy and ease in harvesting. Its habit of low growth further promotes this economy by placing the fruit within easy access, while the openness of its head, admitting air and sunshine, secures to it partial release from the mischievous pruning to which most orchardists are addicted.

It being settled that the bud never replaces the top of the stock cut away to make place for it, this diminution of foliage ought, prima facie, to operate a corresponding reduction of roots and a contracting of the areas of pasture. But the increased size and vigor of the leaves of the bud supply an equivalent for this numerical loss in the augmented power of their large surfaces to secrete organizable matter for the formation and extension of new roots into fresh spaces. Hence, the more uniform and better average development of the fruit of the bud; and hence, too, its annual crop; for its feeding area being as expansive as that of the seedling, while its bearing surface is smaller, its system is not depleted of nutritive matters, to the extreme of exhaustion, by excessive fruiting. It is charged that the budded tree is more sensitive to frost than the seedling; but if we consider the bud as planted in the stock, which is really the case, and then compare its power of resistance to cold with that of a seedling, we will find the yearling bud more capable than the yearling seedling of enduring low temperatures and violent transitions. Hardy, indeed, must be the nurseryman who would expose his seed beds of last Spring's forming to such a Winter as the one of 1879; and yet buds of that age have lived through it, not only without protection, but under the bleakest exposure.

It is the belief of many, though I have never heard any better authority for it than common rumor, that the budded tree is more short-lived than the seedling. This is mere prejudice, with some slight foundation in those instances where natural longevity has been abated by disregard of the natural law of affinity, by ignorance of the unequal powers of horizontal growth possessed by different species of the same family, by improper treatment of stocks, and by neglect of the operator to select vigorous subjects for the exercise of his art. Gallesio, the highest authority in matters pertaining to the citrus family, was perfectly conversant with all the methods of propagating the orange trees. Being an enthusiast in Nature, he was indignant at seeing a tree of such splendid proportions and noble foliage dwarfed under the art of the budder, and he assailed the practice with every argument within his reach. A man of learning, of science, of means and of leisure, and a life-long devotee to studies of its family, and especially of the orange, it is incredible he could have omitted to use an argument, had such existed, the mere publication of which would have overthrown the evil of which he so eloquently complained.

THE VINE.

By M. W. CURTIS.

California is so new a State that her resources have hardly commenced to be developed. It is thought, however, that she will soon know the activity and prosperity of a manufacturing centre, and, in the meantime, her agricultural interests are being properly fostered. Of paramount importance among the State industries are the viti and vinicultural interests. Twenty years ago, and more, the farmers in the State began to turn their attention to the grape, and their first vineyards were planted. The history of their experiment is the history of many others—one of discouragement and comparative failure, for the Mission or Californian grapes, which had already been introduced by the Spanish padres at the Missions, were largely planted, and they proved suitable for only certain sorts of wines. Experience had yet to be gained as to localities and soils, and more particularly as to methods of manufacture, the first wines being often of inferior quality, and serving, unfortunately, to prejudice unfavorably what market was secured for them. But the experiment was not by any means abandoned. The quality of native wines steadily improved, and during the past few years they have found a ready market, competing successfully with foreign varieties, and it is only to be hoped that other experiments, as those with silk worms, cotton, etc., may yet result as successfully and profitably. The State Legislature has just established a Board of nine Commissioners, with funds at their disposal, in the vinicultural and viticultural interests, and it is expected that valuable information will be acquired and widely disseminated through their efforts.

The quantity of wine made and the prices realized have steadily increased. There was a dull season about two years ago, but since that time higher prices than before have been realized for the grapes, and new vineyards, as a result, are being rapidly planted all over the State, while the wine-makers have the encouragement of a firm and established market.

The vines are grown successfully in almost every county in the State, from Siskiyou to San Diego. It is a well-known fact, indeed, that we have, at a certain height along our foothills, running from north to south, what we call our semi-tropical belt, where grapes, lemons, figs and oranges grow, untouched by frosts, while hardier fruits are being destroyed by cold on either hand. This safe altitude is from 700 to 1,000 feet above the sea-level, upon the sidehills. In Siskiyou, which is on the northern boundary of the State, there are something over fifty acres planted in vines, producing annually 500 gallons of wine and 900 gallons of brandy.

Alameda County cultivates grapes in its southern portion, and makes annually several hundred thousand gallons of wine and several thousand gallons of brandy. There are some half-dozen large vineyards in Washington Township, about 150,000 vines being planted, and the owners steadily increasing their acreage. Ex-Governor Stanford has one of the largest vineyards, with storing vaults of great capacity. Amador, El Dorado, Solano and Santa Clara are also among the wine-producing counties. Yolo, two years ago, had over a thousand acres planted, producing annually over 200,000 gallons of wine and 4,000 gallons of brandy. This acreage has been greatly increased in the past two years, and the county has, besides its wineries, seven vineyards whose grapes are devoted to raisin-making. One vineyard, which realized from raisins and grapes this year the sum of $70,000, is now being greatly enlarged, while grain and stock ranches in Yolo, Solano and many other counties where the soil and climate are suitable, are being converted into vineyards. Sonoma and Los Angeles are the oldest grape counties, and have still the most important wineries. Los Angeles has nearly 6,000 acres, the yield of the present year, which is an unusually large one, averaging five to six to the acre, while many vineyards bore ten tons to the acre. About 29,000 tons were produced in the county this year, and it is estimated that 500,000 gallons of wine will be made. Riverside, the irrigated colony, has many small vineyards, the favorite grapes being the Muscat of Alexandria, the Muscatel, and Gordo Blanco, a very fine raisin, besides wine, being produced. Los Angeles will soon ship her wines directly East—a great advantage to that part of the State. In Los Angeles County there are some six large wine-houses, besides numerous owners who press and ferment their own wines. Grapes grown to sell to wine-makers have cleared $90 per acre, or over $20 per ton, and some $1,000,000 worth of wine and brandy being made.

Los Angeles, San Bernardino, Ventura and San Diego Counties are all buying and planting the best varieties of cuttings. San Bernardino has several vineyards, among them the Cucamonga, of a couple of hundred acres.

Vineyards are planted or propagated by means of cuttings of the desired variety, some owners placing the cuttings directly in the vineyard, the better method being, however, to first root them in prepared beds, planting them in the vineyard when a year old. In this way, those vines which die are replaced by others of the same age from the propagating bed, while to replace the cutting which has failed to take root in the field with another cutting, often places through the vineyard isolated vines which are a year behind in bearing.

It is an unnecessary labor to dig holes and plant the cutting as a tree would be planted. Many viticulturists use a crowbar to place the cuttings, but a lighter implement is easily made, having a handle, a foot-rest and a blade, by means of which the opening is made in the ground. The cutting is placed by hand, with its end quite at the bottom of the hole, when the blade of the implement mentioned presses the soil evenly against the cutting all the way from the root to the surface of the ground. It is thought that the grapes do better and ripen more rapidly when the vines are placed at good distance apart, say at least six feet.

The favorite grapes for planting are the Muscatel, Gordo Blanco and Muscatel of Alexandria, these being specially adapted for raisins. While Zinfandel, Berger, Blue Elbe (or Blaue Elben), Burgundy, West St. Peter's, Riesling and Charboneau, are used for wine. From one vineyard in Los Angeles County, where pruning is going on, nearly a million cuttings have been engaged for the planting of new vineyards, which hints at the fact that our viticulturists no longer are obliged to import their vines from Europe and the East.

The vines come into full bearing the fifth year, and partial crops are realized even before. The grapes are gathered in the Autumn, and the vines pruned, the ploughing following in December or January. When irrigation is resorted to it is generally employed twice in the year, once in Winter and once late in the Spring, and this latter application of water, it is claimed, is useful in keeping the birds around the vines all Summer, they being destructive to injurious insects. Fully half the vineyards in the southern part of the State are irrigated, and a smaller percentage further north, and the vines undoubtedly bear longer and have larger yields where the water is used. The prunings, when not wanted for rooting, are usually burned, but if spread over the ground as a dressing, form one of the best modes of refertilizing it.

France produces every year nearly two billion gallons of wine, yet California's increasing product finds a market, and a market which there seems little danger or overstocking during at least a century to come. Vineyards and wines were not really unprofitable during the dull years in times past, and while 1880 was a most profitable year, the abundant rains, with other indications, point to an equal or a greater prosperity for 1881.

That great enemy of the vine, the phylloxera, has already attacked the vines in California, originally in Sonoma Valley, but since then manifesting their presence in other parts of the State. It was at one time supposed that these pests attacked only old or sickly vines, but that has proved a mistake, as the healthy fall a prey equally with the decrepid. France has suffered fearfully from their ravages, thousands of acres of her vineyards having been devastated by them. The phylloxera is a parasite, a winged insect in the Summer, feeding upon the leaves, depositing its eggs in the Autumn upon the roots of the vine, where the larvæ live all Winter, coming to the surface and assuming wings in the Spring. It is very desirable to find some specific against this pest which shall, without injuring the vine, entirely destroy the phylloxera. France has experimented to this end in a most thorough and scientific manner, planting in the earth, in numbered receptacles of wire cloth, artificial vineyards of infested roots, upon which to test the remedies experimented with. The bisulphide of carbon is certain destruction to the parasite, and, properly used, is discovered in France to do no injury to the vines. It has already entered into the composition of several remedies tried here, but combination only made it more expensive, and even diminished its powers. This is the remedy advised by Professor Hilgard, of the University of California, but it has had the objection of being rather expensive. At an ordinary temperature this bisulphide of carbon is a heavy and oily liquid, but it boils at a very low temperature; it is an explosive substance, and a drop of it, upon passing into the air, changes almost instantly into vapor. This vapor is poisonous, and kills the parasite. It is conveniently applied on account of its heaviness, which carries it down and into the earth, and of its insolubility in water, which prevents it from being dissipated by the moisture in the ground.

Other remedies have been difficult to apply practically, injurious to the vines, or more commonly, of great expense.

According to the experiments so extensively prosecuted in France, the bisulphide of carbon should be used in the following manner: Before the Winter ploughing, some time in December, while the larvæ are in the ground, two holes should be made, some sixteen inches deep, one on each side of the vine, and into each hole seven or eight grains of the bisulphide inserted. After six days this should be repeated. In the Spring again, or rather, some time in June, repeat this process, with only four days between the two applications, and the phylloxera will be completely exterminated. Only very old vines are at all injured by the bisulphide of carbon, and unless already destroyed by phylloxera, will speedily recover their vigor. The substance is transported in iron casks, which adds to the expense. However, it is estimated that, were the casks returned to the chemists, it would cost the farmer, if used according to the directions just given, that is, 32 grains to each application, covering a square metre of ground, or 285 pounds to the acre, some $23 per acre each time of applying, the whole cost of the process, of Spring and Fall application, being, therefore, $46 per acre, and that this is not considered in France an inordinate price to pay for the benefits derived, is proven by the large amounts, increasing annually, of the substance that are used by viticulturists. The application is made by means of an instrument which comes for the purpose, and renders the handling very speedy and safe.

Irrigation, which is being gradually extended in every county in the State, is also known to be very effective in destroying the phylloxera, and should be used in conjunction with other remedies. It is suggested, in addition, that the buhach, a plant already raised here, easily and with little expense, which is a destroyer of all insect life, should be planted in and about the vineyards. The powdered herb, sprinkled under the vines, would very probably destroy a large percentage of the insects who sought to deposit eggs upon the roots.

Brandy is made in every grape-growing county, and the principal wines in the State are Port, Angelica, Sweet Muscatel, Hock, Madeira, Riesling, Sherry, Zinfandel Claret and Champagne. Many viticulturists crush their grapes, having their own vaults, and carry the wine through at least a portion of its stages or processes. The grapes are crushed in a press, which also does the stemming, and often disposes of ten tons an hour. The coloring matter is in the skins, and the color of the wine depends in a great measure upon how long the skins are left in the new wine or must. Alcohol, water, sugar, vegetable acids and carbonic acids, with tannin, argols or cream of tartar, and other precipitates, are among the constituting parts of wine. The principal processes in making the wine are the pressing and the fermentation of the must, although this latter knows wide variations in different locations and in making different wines. The wines of warmer spots or riper grapes are generally heavier and sweeter, while those of cooler altitudes are lighter, and have more bouquet. Thus, for a long time Los Angeles was supposed to be capable of producing only port, angelica, sweet muscat and brandy. However, with the introduction of other grapes besides the Mission variety, Los Angeles has made a most excellent light wine, and otherwise added to the variety of her local vintage, which has greatly improved in character of late years.

In the fermentation of some wines a boiled-down must or portion of new wine is added, rendering the wine sweeter. Of course, in some localities and wines still other alterations and additions are resorted to. As a general rule, it may be stated that the process of fermentation changes the sugar of the grape-juice to alcohol, and the process may be completed before or after this change has affected all the sugar, leaving the wine sweet or acid, as may be desired.

Champagne is a sparkling wine, made by mixing other varieties. The process may be seen, at each of its stages, in the large establishment of Mr. Haraszthy, formerly Landsberger & Co., in this

city. Corks and bottles are imported from Europe, the corking machine attracting the curiosity of visitors, interested in seeing the great bulk of cork compressed into the small size of the bottle-neck. Ten or fifteen per cent of the bottles break during the first part of the process, the pressure being 95 pounds to the square inch.

No spirit of any kind is used, but the wines mixed to form what is called the *cuvee* are only established after much experience, and require great skill in blending, this being the most important part of the work. Four or five wines are carefully selected after many different assortments, being chosen for their color, lightness, sweetness and alcoholic strength. Riesling is largely used for its bouquet, and heavier white wine for the body, the principal wines being the Riesling, Berger, Gutedel, Muscatel and Zinfandel. They are blended in a huge vat holding over 3,000 gallons. The process is called the natural one of fermentation in the bottle, and the blended wine or cuvee, which comprises about 4,000 bottles, is bottled and fastened with a cork, tied down, put into baskets, and carried into a room with a temperature kept at 75 or 80 degrees, for the first fermentation, remaining from six weeks to three months generating carbonic acid. At the end of the stated time the bottles are carried into a cellar, much cooler in temperature, where they are laid flat, with their necks slightly elevated. There are in these cellars about 300,000 bottles at a time, in a state of "cure." The wine remains in this vault from twelve to fourteen months. After six or eight months of very gradual fermentation, the bottles are put into racks, where they can be slightly moved around every day for four months, which brings the sediment down into the neck of the bottle. When the fermentation is complete, the bottles are taken by a man who has his face protected by a wire mask, while he cuts the string and removes the cork, the sediment in the neck of the bottle coming away with the cork and being reserved for use in making vinegar. A tablespoonful of syrup, being a quantity a third less than what is used in Europe, is now put into the bottle. This syrup is made of the best white sugar and three- or four-year-old white wine, without, however, any boiling or crystallization having taken place. After the syrup more champagne is added, so as to nearly fill the bottle, the wine being acid before and sweet after the addition of the syrup, which latter substance has, however, no flavoring matter added, as in France, the qualities of the champagne being derived purely from the chemical changes of the natural fermentation in the sealed bottle. There is a natural increase of vinous spirit, ether and aroma, while tannin, cream of tartar or argols, albuminous and other substances are among the precipitates.

The bottles are recorked, tied and wired, the bottlers easily handling 1,000 bottles daily. They are well-shaken, to incorporate the syrup with the wine, packed in straw and in a thick paper, to protect them from the changes of temperature, and stored for six or eight months more before being labelled and exported, the champagne improving with age.

Our wines have made for themselves a market, being used now not only in California, but all over the United States, in preference to the cheaper foreign wines; and while they continue to improve in quality, it need no longer be feared that any prejudice against native wines will prevent that fact from being fully recognized by wine consumers.

California now imports of foreign wines 420,000 gallons less than she required five years ago, the United States as a whole using 2,650,000 gallons less. In 1879 California exported nearly 2,160,000 gallons, an increase in four years of nearly 1,125,000 gallons, a rate of increase which it is safe to say will not be abandoned in the near future.

The State has produced this year its largest yield yet, something over 10,000,000 gallons. This about equals the product of Switzerland, in Europe, while Greece, Russia, Germany, Austria, Portugal, Spain and Italy all make more, the yield of France being some 1,600,000,000 gallons of wine annually.

California is planting a large acreage in vines, and her area of suitable land is probably larger than in any country in Europe; but her large vineyards sink into insignificance beside the 1,500,000 acres of French vineyard which have already been destroyed by phylloxera.

The Mission grapes have generally brought some $10 or $12 per ton, the imported varieties realizing from $18 to $26 per ton. In the season just passed, Mission grapes have brought over $20, and the imported varieties from $30 to $35 per ton. It must not be considered likely, however, that such extremely high prices will be long sustained, the wine makers not being able to obtain a correspondingly raised figure for their wines. It is more likely that the price of grapes (delivered at the winery, be it understood) will return to nearly the price of former seasons. However, with the quality of wine constantly improving, a market already assured, and an increasing consumption all over the world, of wine, as opposed to alcoholic liquors, vineyards in California will never be anything else but profitable; and it is hardly considered likely, as recently suggested, that the unusually large cider product of the past year in the Eastern States is any menace to our wines.

California consumes 3,000,000 gallons of native wine annually, and exports about as much more. Several hundred thousand gallons of brandy are also exported, and it is known that the supply of from one- to three-year-old wine is nearly exhausted, having recently not equalled the demand.

Land for grape culture may be bought all the way from $2 50 to $100 per acre, the best land for the purpose being that of light soil on the hillsides, while the heavy bottom lands are now commanding the higher prices. The higher-priced lands generally include irrigating facilities, but the grape grows very well without irrigation, and it is even questioned if deep tillage is not cheaper, and at the same time equally as effective as irrigation. An average price paid may be said to be $25, while the cost of planting and maintaining a vineyard until it arrives in bearing will probably be about $75 per acre more. Cultivating, gathering and shipping the grapes is estimated at a yearly cost of $20 per acre, the yield averaging probably four tons to the acre. It will thus be seen that those vineyards which came into full bearing in 1880, and which obtained $30 or more per ton for the crop, paid for themselves in full up to date the very first year. Placing the probable interest on the investment per acre at $10, and the expenses per acre yearly at $20, a vineyard bearing four tons to the acre, and selling grapes at $18 per ton, will pay all the expenses and $42 per acre net over and above a very good interest on the sum invested.

It is more than probable that when a good wine can be produced sufficiently cheap to pay for transportation to France, to be sold at a moderate figure there, that a market will be found in Europe for our wines, the unbounded possibilities of which future are undoubtedly in store for California.

SMALL FARMING IN CALIFORNIA.

A Talk about what Grows in this State—Where it will Grow—Useful Information from Many Sources.

That form of farming which is most common in California is a form found in no other country, and, in some of its peculiarities, in no other State. Wheat is planted in large tracts, thousands of acres—ten, twenty, forty and more—in extent. The ploughing is done with gang-ploughs, which are from four to eight ploughshares fastened to one wooden frame. As many as eight horses are employed to draw this implement, and with it some ten acres a day are ploughed. A seed-sower, fastened in front of the plough, scatters the seed, and the plough, which receives no guiding, but requires only a man to drive the horses, covers it with earth. After the sowing is accomplished, the teams are taken to other fields, which are to be summer-fallowed, where often are seen ten of the gang-ploughs, each with eight horses attached, ploughing a furrow a mile long and forty feet wide. Afterward, in July, comes the harvesting, and the farmer, with a force of perhaps twenty men and eighty horses, three "headers" (which cut off the heads of the wheat stalks), eight or nine wagons, a thresher and the sacks for his grain, goes into his field and cuts, threshes and puts into sacks the grain, at the rate of considerably over a hundred acres a day.

After the harvesting is completed, and the bags of grain are left stacked at the side of the field until it is convenient to haul them away, the horses are harnessed to great brushes—half-a-dozen horses to a twenty-foot brush—which goes over the fields to scatter what seed has been dropped upon the ground. The ground is then ploughed two or three inches deep, to cover the scattered seed, which is then left to spring up and form a second or third "volunteer" crop, which is often as heavy, and always as sure, as the first. Though the yield be only a few bushels per acre, the farmer of the thousand or the twenty thousand acre tract counts confidently upon making a small fortune in a single year, and if the year be a dry one, he is frequently ruined. And in the meantime, on this gigantic farm or "ranch," there is no vegetable garden and no orchard. The house, at best, is a slight and insufficient redwood structure, and scarcely one of the ordinary comforts of life is provided for in the farmer's family.

This is what is commonly termed farming in California, and thousands of acres of what is really garden land are annually planted in grain, leaving the ground, which might have attained a priceless value under another method, at the end of twenty years, exhausted, and really less valuable than it was in the beginning. That other method it is, which we have chosen here to term "small farming," whose advantages are now urged. The man who has from eighty to one hundred and sixty acres south of San Francisco, or in some location north of that place, and who carefully tills his ground, planting an orchard of temperate and semi-tropical fruits, a vineyard of the best varieties for wine or raisins, with beets and alfalfa for his cattle, and a vegetable garden for his family, will not only live more comfortably, but at the end of ten or twelve years will actually be worth more money and own a more valuable place than does his neighbor with the thousand-acre wheat-field. And in the beginning he will have required a much less capital, and have run a proportionately smaller risk.

There are thousands of acres of desirable land in the State available to the small farmer, with a sufficient variety of location. North of San Francisco, the Napa and Sonoma Valley lands are not as suitable for grain as they are for the semi-tropical fruits, and specially for the vine. The soil is red and gravelly, and was formerly thought to be unfertile, but it is precisely the soil required by the vine, and the grape attains perfection. Land in the vicinity of Sonoma costs from twenty dollars upward, and is perhaps a little cheaper on the side-hills. One man with a horse can cultivate alone twenty-five acres of vineyard, requiring help only in picking the grapes; and an average size of vineyards is perhaps twice as many acres, though some, of course, are very much larger.

Fencing in the same vicinity costs about four hundred dollars per mile, for a four-board fence. The work necessary before planting the vineyard, that is to say, the ploughing, to break the ground, the harrowing, the "laying off" and the digging of the holes, costs eight or nine dollars per acre. The vine cuttings cost five or six dollars per thousand, and a thousand or less are planted to the acre. The cultivation of the vineyard will probably cost four dollars per acre for the first year, ten dollars the second year, and fifteen dollars the third year. But this year the vines will begin to bear, producing about ten dollars to the acre. The fourth year there should be a profit of ten or twelve dollars per acre, and with the fifth year the vines come into full bearing. The cost of picking the grapes is about one dollar and a half per acre. The yield of a cultivated vineyard, a thousand vines to the acre, ought to be four tons to the acre.

The grapes may be sold for from fourteen to twenty-eight dollars (on an average, for they have brought as high as thirty-five dollars) per ton. Some viticulturists prefer to make their own wine, but this will scarcely prove the better way, requiring as it does large additional expenditures for cellars, press-houses, casks, crushers, presses, vats, hose, pumps, etc., and experience and skill also in making a high-grade wine. The vines are grown successfully and the grape properly matured in all but five or six of the forty-four counties of the State. Irrigation is resorted to in many districts, but it is claimed that it is not needed in any locality where the grape is raised for wine, the wine being of a better quality where water is not used.

The Sacramento Valley is an immense fertile plain, containing about 5,000,000 acres, having a milder than the Eastern climate, producing bountiful crops almost throughout its extent without

irrigation, and in every way fitted to the small farmer.

In the vicinity of Salinas City, Hollister, Watsonville and Santa Cruz, is land of unsurpassed fertility, irrigation not being needed, excepting in gardens. The soil is a deep, sandy loam, but with frequent patches of adobe. The cereals are principally raised, and the average yield over the whole region is—of wheat, forty-five bushels per acre; of barley, sixty bushels per acre; of oats, fifty bushels; and of potatoes, two hundred to three hundred bushels per acre. Flax yields over fourteen hundred pounds to the acre, and hops are profitably grown. The peach tree does best upon the hillsides, apples bear in three years from the graft, the plum yields largely four years from budding, and the strawberry attains its highest perfection. Lumber is very cheap, as this is in the midst of the redwood region of sawmills, and the railroad gives ready access to the San Francisco market. Land brings from thirty to one hundred dollars per acre; that upon the hillsides, however, while it is fully as desirable and fertile, being obtainable for from ten to twenty-five dollars per acre.

In all of Southern California the climate is most mild, healthful and delightful, and it can scarcely be termed too warm, even when the mercury reaches 82 degrees and more in the daytime, as the nights following are always cool and refreshing. In the Los Angeles flower gardens over twenty varieties bloom all Winter, including the tuberose and jessamine; while the heliotrope grows to the height of twenty feet, when trained over the piazzas. Peach trees bear each a peck of fruit the second year from the pit, vines yield in two years, apples give a full crop in five years, while the kitchen gardens are productive and the orange ripens all the year round. Shade trees, as the pepper and acacia, bear transplanting at a large size, grow amazingly, and furnish a grateful shade immediately. Strawberries ripen in abundance the first season, while of the grains two crops are taken in a year from the same acre, on the irrigated lands, while no manure or fertilizer is used, the land not deteriorating when water is used. Of the alfalfa hay, twelve tons and more are cut every year to the acre.

The soil here is very generally a rich, loose, sandy loam, with occasional adobe. The price is from $30 to $100 per acre with water, and perhaps $2 or $3 without water. And $50 an acre is certainly not a high price to pay for land which, after five or six years, with little additional money spent, will yield at least $500 annually for a lifetime.

Near San Bernardino, sixty miles east of Los Angeles, are over 30,000 acres of productive valley land. There is an abundance of water for irrigation, which is also supplied from artesian wells. Lumber costs a moderate price, and farm horses and cows are cheap, as they are in all this part of California. Two crops a year are commonly taken from the land, and very high averages yielded. Land is cheaper than in Los Angeles County, and the foothills are, perhaps, preferable. Unimproved land, near the town, with water enough for irrigating at a convenient distance, costs from $3 to $10 per acre. The famous Cocamungo vineyard is between Los Angeles and San Bernardino, while Dr. Edgar's well-known vineyard is 2,000 feet above San Bernardino, in the San Gorgonio Pass. There is a market in Arizona for the farm products of this vicinity, and a market garden near the town is a very remunerative investment. Riverside Colony, with some 8,000 irrigated acres of land, is near San Bernardino. The land is held at about $40 per acre, and water costs about $2 per acre per annum. Ten acres in raisin grapes in this colony yield a very handsome income. The fences here, as frequently in the southern country, are conveniently made by planting long cottonwood, sycamore or willow rods, which quickly take root and grow, and after the second year will yield the farmer every year a sufficient amount of firewood.

In the vicinity of Bakersfield, in the southern part of the San Joaquin Valley, is a fertile soil and a warm climate, the frosts being very slight in Winter, and all the semi-tropical fruits, with hops, tobacco, and cotton, flourishing. Opium, madder, and castor oil are also raised successfully. Land here may be bought for $2 50 per acre, the irrigating ditches of course being made afterward. And with proper cultivation, and deep ploughing, the San Joaquin Valley will always yield a very good crop in the driest year.

The hogs in the vicinity of Lake Tulare feed alternately on the acorns from the oaks and the shellfish in the shallow parts of the lake, keeping fat all the year. And horses are often fed no grain, but pastured all the year.

The whole San Joaquin Valley knows a pretty high degree of heat in the Summer months, but as the atmosphere is dry and the nights cool, the people do not suffer from prostration as they do in the Eastern States.

This great valley extends from Stockton to the Tejon Pass, a distance of three hundred miles, and contains about 7,000,000 acres, besides the foothills, being perhaps the most desirable locality in the State for the establishment of small and carefully cultivated farms. The Government and railroad lands are perhaps the cheapest and most desirable, and a very good idea of locations may be obtained at the Government land offices, or at the land offices of the various railways. The railroad lands are from $2 50 per acre, with five years' credit, and the Government land is from $1 25 to $2 50, with the terms also very easy. Eighty acres may be preëmpted, and, by the making of specified improvements, secured gratuitously, under the Homestead law.

And it might be said here that eighty acres is sufficient for wise and profitable working by the small farmer. One hundred and sixty acres are perhaps preferable with abundant means, but in no wise should the latter size be exceeded. The unsettled habits, comfortless living, and careless tilling of too many of the great grain farmers, who strive to own too much land, are greatly to the detriment of the State's prosperity; and even forty acres will comfortably support a farmer's family, and at the end of six or eight years give a very handsome income.

The purchaser should select his land in the Summer or Fall, as the country will then look certainly its worst, on account of the dryness and dust; while at the same time the harvesting, which is then in progress, will indicate the degree of the soil's productiveness; and if land is bought in the Summer in the San Joaquin Valley, as there is no clearing of underbrush or getting out of bowlders to be done, the ploughing may be commenced with the Winter rains, and the first crop sown at once. Uncultivated land, with water convenient, but without ditches, can be obtained at from Government prices to $4 or $5 per acre, and when the ditches are constructed, the value will be more than doubled, although the cereals are profitably grown without irrigation, about seven good years or full crops in ten years being counted upon. Farms in the colonies possess, no doubt, some advantages, but they are held at a higher figure, and are besides commonly too restricted in size.

The soil in the San Joaquin valley varies from light sand to a heavy adobe or black clay, and each extreme possesses its advantages. The crop is larger on the heavier land, but the cost of cultivation is very much greater. The sand has borne very good yields of wheat in very dry years, but it is better for grain than for anything else, and after a time may be rendered unprofitable or unproductive. The heavier soil is suited to varied products, and yields, with the right treatment, very much the larger income. Occasionally on the uncultivated plain can be seen the white trace of alkali, but even this is so

treated that it makes productive land. Barley straw is ploughed in, and rots quickly, and so decomposes the alkali, or fertilizes the soil, that in the following Winter grain is profitably planted.

It has been rightly said that the quantity of water bought is more important than the quantity of land, as California, except in a few favored localities, is undeniably subject to drouths. Water is also required in the cultivation of semi-tropical fruits, as the orange, citron, lemon, etc., and also, except in exceptionally wet years, to obtain two crops annually per acre. With irrigation it is easily and commonly done, the crop of wheat or barley, planted in December and reaped in May, being followed by one of corn, planted in May or June, which also ripens fully.

A very small stream is sufficient to supply a large tract with water, and is very easily and cheaply tapped, and the water led into a reservoir. Ditches are sometimes dug by companies of capitalists and sometimes by the farmers of the neighborhood, who quickly and easily double their incomes and the value of their properties by the introduction of irrigating facilities. If the ditches are already constructed upon land, it is only necessary to ascertain the cost of the water, which is generally $1 25 per acre per crop, or perhaps $2 per acre, per annum. This is cheaper than the cost of a fertilizing agent, of which it is universally conceded to fill the place, the soil of irrigated lands never deteriorating. Artesian wells, where flowing water can be obtained at a small cost, answer every purpose, and are commonly used in the San Bernardino Valley, east of the San Joaquin. Artesian wells are made here by the sinking, by means of the pressure of a lever, of a wrought-iron tube, several inches in diameter, which is the size required to obtain water sufficient for irrigating. A sand-pump is used to bring up the contents of the pipe, and the boring costs $1 per foot for the first hundred feet and fifty cents additional for every hundred feet additional. The iron tube costs here $1 per foot, and the water has generally sufficient force to carry it through the house and other two-story buildings of the farm. And irrigation is not the difficult and troublesome process which at a distance it may appear. An orange orchard is watered every six weeks, and ploughed after each irrigation, one man irrigating and ploughing some twenty acres without inconvenient haste. The land always requires to be turned by the plough after the water has been turned upon it, or it bakes in the sun and is worse than before; and no doubt this constant tilling may be thanked for many of the good results of irrigation. Nor is it troublesome to an industrious and methodical farmer, who enjoys the aspect and the productiveness of his smoothly cultivated place.

The farmer who has secured, by purchase or by preëmption, his eighty acres of land, has his house, outbuildings and fences to make. If, as is often and pleasantly the case, he has several neighbors, men who have bought adjoining lands at the same time and in company with himself, he can have this cheaply done by contract, and a new farmer very often also has his first crop put in in the same way. The fences in a good part of the southern country are more cheaply made by the simple planting of willow or cottonwood sticks, three inches or more in diameter, which, in two years' time, make living fences, from which all the firewood for the family may be cut. The outbuildings need not be specially substantial in this climate, as sheep are not housed at all, and cattle and horses are pastured almost exclusively the whole year round. The grain, also, need not be stored, but is commonly left stacked in the sacks by the side of the field until shipped away. But the house ought to be a comfortable and convenient structure, as a crying shame on the beautiful and fertile farms of California is the style of rough-board house or shanty in which, year after year, the owner lives.

In the southern part of California, Indian labor is obtained at from 50 cents to $1 25 per day, without board, and farm laborers work at about $30 per month and board.

The farmer might very profitably plant ten acres in vineyard, and ten in the semi-tropical fruits—the orange, lemon, lime, citron, almond, English walnut and others. Five acres should be planted in alfalfa, and if five or more be planted in olives, the farmer, and his sons after him, can scarcely, in the course of time, miss an independent income. An orchard and a vegetable garden should be provided, and a couple of acres in beets for the cattle. Five acres or more should always be planted with eucalyptus, which grows here as much as twenty feet in a year, and which, besides affording a beautiful shade tree, and securing the neighborhood against malaria, is valuable as timber. These trees, as well as cottonwoods, are also often planted by the farmers as wind-breaks, for which they are sufficiently grown in two years' time. The balance of the land may very profitably be sown in barley for hay, followed by a second crop of corn, and if the year is a good one it is certain that the first year's product will go a long ways toward paying the year's expenses. Horses here cost from $20 to $80, and milch cows about $50.

It is well-known that deep ploughing, say ten inches deep, which is too seldom resorted to, will secure a very good crop, without irrigation, in the dry years; and summer-fallowing, or the ploughing of the land in the Spring, and allowing it to lay until the first rains, when the seed is sown, is known to give the best results, adding so much as a third to the crop. Sowing is commenced with the first rains, and continued as late as March. Trees are also transplanted during this season, and in this climate eucalyptus, pepper and acacia trees, six inches in diameter, grow rapidly after transplanting.

Grain fields are here irrigated before sown, and the wisest method seems to be to soak the field and do the ploughing and planting *before* the rain, so that the first showers come as the grain is sprouting. Thirty bushels of wheat and forty of barley are averaged, with something less of corn.

Alfalfa yields as much as fifteen tons to the acre, and is fed to cattle, hogs, sheep and plough-horses. Ten acres in alfalfa and one or two acres in beets, replanted as they are used, will support, without other expense than that of cutting the feed, a span of horses, five or six cows, twenty sheep and a dozen pigs.

Apples, pears, peaches, quinces, apricots, nectarines, plums, cherries and the small fruits all grow rapidly, mature young and are free from disease. And this is the proper climate for drying and preserving fruit, which will no doubt be here a considerable industry of the future.

Wool and cattle-raising, as adjuncts to farming, are very profitable. Sheep are neither fed nor housed, but herded, and the wool pays the expenses of the flock, the lambs, for which there is ready sale, being clear profit.

The semi-tropical fruits planted are the almond, olive, walnut, chestnut, citron, lemon, orange, pomegranate, and fig, the latter giving two crops a year. There are in the southern part of the State orange trees thirty years old, olives eighty years old, and English walnuts forty years old, all bearing largely and proving the adaptability of the soil and climate. Certain it is, that the area for raising these fruits is a limited one, being almost confined to California and Florida in the United States, France and Italy in Europe, and the Pacific islands. On the other hand, the market is universal, and the fruits are not generally perishable in their nature, but may be and are shipped to a considerable distance. For a number of years there will be an increasing demand for us to supply in the States rapidly filling up west of the Mississippi, so it is very far from likely that what tropical fruits California may raise will ever become a drug on the market.

There are several varieties of the almond planted, some being seedlings which were originated in California. A commonly planted variety, however, is the Languedoc, coming from some trees which were imported from France. They bear heavily, blossom late, and have a tolerably soft shell, all of which are desiderata. It does best on a sandy loam, one hundred and eight trees being planted to the acre. They bear at three years from the bud, yield twelve pounds per tree, or about two hundred and forty dollars per acre, at five years, and at eight years yield twenty pounds to the tree, or about four hundred dollars per acre. The gopher and the squirrel are its enemies, and are usually destroyed by poison. When the nut is ripe it drops to the ground, and the husk opens and falls off, or is easily removed. The native seedlings are generally hard-shelled, and do not bring so high a price.

The olive is propagated by cuttings, and grows slowly at first. It will sometimes begin to bear at four years, but does not come to full maturity until the tenth year. Sixty trees are planted to the acre, and the mature orchard yields an average of twenty-five gallons of olives to the tree. They bring about sixty cents per gallon, which is a gross of $900 per acre per annum. The olives are of moderate size, but very juicy and well flavored, and are, when carefully picked, much superior to those brought from France and Spain. Pickled olives bring seventy-five cents per gallon, but it is more profitable to use the fruit for making oil. Six or seven gallons of ripe olives will make one gallon of oil, and the process is a very simple one, all of the necessary machinery usually standing under a shed in the orchard. The pulp is crushed from the pits and put into strong rope nets, which are pressed, the oil running down into a tub of clean water, on the surface of which it collects. The refuse and the seeds yield an oil of an inferior quality, which must be boiled to clarify it. The olive is easily raised as to soil, and does not require irrigation. The gopher is its deadly enemy.

The English walnut is a very tall and beautiful tree, a slow grower, maturing at seven or eight years of age, and increasing in productiveness after that. Thirty trees are planted to the acre, and a tree twelve years old bears over fifty pounds of nuts, while a tree fifteen years old bears upward of 100 pounds. The nuts fall when ripe, and have only to be sacked. The only cost is for cultivating and irrigating, and one man can care for thirty acres. The nuts bring about ten cents per pound in Los Angeles, the price obtained per acre from a twelve-year-old orchard being about $300.

The Spanish chestnut, at fifteen years, bears one hundred pounds of nuts each, and is being largely planted.

The citron, a tall shrub, bears in about five years, and is very profitable. Plants in Los Angeles, without being greatly cared for, have borne at four years of age $15 worth of fruit each.

The lemon, which becomes a large tree, bears at ten years a valuable crop, generally about six hundred lemons per tree. A tree in Los Angeles some years ago bore, at fifteen years old, two thousand lemons, which brought in San Francisco $30 per thousand.

But the orange is considered profitable above all others. It requires irrigation, and does best near the foothills. Wind-breaks are a benefit to it, and young trees should be covered from a heavy frost. Sixty trees are planted to the acre; it bears at eight years from the seed, and gives a good crop at ten years. It is safely transplanted at three or four years, if the air is kept from the roots. It is a very prolific bearer, trees fifteen years old commonly giving 2,000 oranges. Trees ten years old from the seed give 1,000 oranges, which bring $15 per 1,000 in San Francisco. As one man can care for twenty acres of an orange orchard, and the expenses of buying, shipping, etc., are covered by $5 per thousand, the net profit per acre is almost $900. At ten years old the trees are safely counted on to yield a profit of $10 each, which, with sixty trees to the acre, is a very comfortable sum. And the trees constantly increase in fruitfulness with age, living to be over a hundred years old and bearing over 2,000 oranges.

The pomegranate is a beautiful shrub, and the fig gives two crops a year.

The vine is, of course, very profitable, and the better method is to sell the grapes or grape juice to the wine-makers. The farmer commonly sells his grapes beforehand to the wine-maker, and, under his directions, picks and presses the grape and carries the juice through the first process of fermentation, the wine manufacturer taking this must to make into wine. And it is very justly claimed that the Californian wines have an immense advantage and recommendation over those of Europe, in the more cleanly and intelligent methods of the first processes as carried on in our vineyards. The cellars here are commonly above ground, and better lighted and ventilated, and the wines are pure, not being adulterated, for the very good reason that a manufactured article would not be as cheap or pay as well as does the grape juice. When brandy is added, as to the ports and some of the angelicas, it is the grape brandy, made in the vineyard, as is the wine.

Raisins, however, are more profitable and less expensive than the wine, and an acre in raisins is five times as profitable as an acre in wheat. The white Malaga, which is the true raisin grape, having a thin skin and small seeds, should be planted, and the process of curing is a very simple one. The grapes must be picked before too ripe, and the imperfect fruit cut from the bunches, which are then dried, first in the sun and afterward under cover. Experience and care are necessary, but it is a very profitable industry, as the California raisins have already made themselves a market at good figures. The vines yield five tons to the acre, and four pounds of grapes commonly make one pound of raisins, and these latter have brought in San Francisco recently the price of twenty-five cents per pound.

Cotton of an excellent quality is raised in the San Joaquin Valley, twenty acres being planted and kept in order by one man. A crop in 1872 averaged $75 per acre, of which $47 per acre was clear profit. Attention is again being called to this product, and if only a market at home is provided for the cotton, there is no doubt that it will rapidly attain large proportions in this part of the State.

Silk is profitable when properly engaged in. It is true that there have been failures with the silk worms, but it is also true that the most absurd mistakes were made, such as planting an entirely wrong sort of mulberry tree, or planting it in an entirely wrong location, or feeding the immature leaf to the worm, by men who planted by the hundred acres, hoping to multiply in the same proportion the profit which had been realized from one acre. It is recommended, and no doubt wisely, that a dozen trees be planted near the house, and the farmer's family permitted to care for the worms, when a very fair success indeed will probably be met with.

The hops raised here bring a higher price than those of the East, being stronger, and gathered in better condition, owing to our dry Summer. Rice, flax and hemp, together with the ramie, are all successfully raised, giving sure and profitable crops. The castor bean has been very successfully raised in large tracts, the plant being hoed like corn, and a press in the field making the oil. Sugar beets yield a very large percentage of saccharine matter, owing to the long rainless season, and are very profitably worked in this State. At present, the factories raise extensively their own beets, but there is no doubt that when the farmers raise a sufficient supply, it will be found the better way and highly remunerative to the farmer. About ten tons are

raised to the acre, which is less than in Europe, probably because we do not cultivate our soil with sufficient thoroughness, and the beets here yield generally three per cent more sugar than in Europe. A ton of beets ought to yield a barrel of sugar, and the refuse of the beets is fed here, as in France, to cattle.

The cork tree is not yet a product of the State, although it is known that it will grow here. Now, some 100,000 bottles of champagne are carried simultaneously through the process of manufacture in one San Francisco wine house, and for each of these bottles two corks are used, the first costing two cents and the second six cents. Here alone are 200,000 corks, costing $8,000, which goes to show that our wine-making very naturally makes a market for a goodly number of corks, which will perhaps be supplied, in a few years more, from the same lands from which the grape comes.

Finally, on the list of industries profitable for the small, or, in other words, the wise farmer of California, is that of keeping bees, and these bring so much money that it has been known to pay their owners to move several hundred hives from place to place over large tracts, that the little insects might have untried fields from which to gather their honey.

THE POMEGRANATE.

By Ex-Gov. JOHN G. DOWNEY

The orange, lemon, lime and citron have been well written up (not exhausted) by practical men who have devoted much time to these industries as a source of living and profit. My observations on these matters have been limited to pleasure and recreation. The pomegranate has not received merited consideration. *Puncia Granatum, Laccæ, Tunica Exterior, Radicis, Cortex et Flores,* have received the recognition of the London, Edinburgh and Dublin colleges as a valuable medicinal plant; it can hardly be dignified with the name of tree, but in good soil will reach the height of twenty feet. We know it here as a beautiful ornamental shrub, bearing a beautiful fruit. Our Castilian friends appreciate it, as they have experience in its cultivation and uses. They know it as the *Granada,* and have given a beautiful city its name.

In our mystic circles it is recognized as the emblem of abundance, and justly so. Apart from the treatise on this beautiful plant by excellent medical authority, our Spanish friends have long learned from the Moors and their ancestors along both sides of the Mediterranean, to value this lovely shrub for its beauty and usefulness. In a hot Summer's day there is nothing so charmingly delicious as a saucer of the pomegranate seed, sprinkled with pulverized sugar. It is cooling and refreshing, and a most agreeable febrifuge. In orchard or hedge it is pleasing to the eye of the cultivated taste. It is a hardy plant, easy of propagation—from the natural seed, or from the slip or cutting. The latter is the easiest, as you are as sure of the cutting as you would be of that of the willow, and with this advantage, that it does not require the moisture that the willow does. I have seen the charming plants in some of our deserted missions, clinging to life without care or cultivation, a generation after the good old Fathers that planted them had passed away. In foliage, flower or fruit, it is a beauty. It is of the myrtle family, but must stand at the head, as the fruit is valuable, will keep forever, almost, and will stand transportation to any corner of our vast country. It can be planted with success, from eight to ten feet apart, in orchard and in hedge, the same as the Osage orange, and will bear any amount of pruning. It will do well in any portion of the State, and this notice of it is particularly dedicated to our lady friends of the northern counties, who may not be familiar with the habits and uses of this charming, beautiful and useful plant. The rind of the fruit is used here as a useful astringent in sore throat as a gargle, the seeds as a febrifuge, and the root and bark in diarrhœa. If this notice will call the attention of our refined and cultured people to this beautiful industry, I will feel highly repaid.

RAISINS, GRAPES AND CURRANTS.

Valuable and Practical Information for Producers.

By M. W. CURTIS.

The experiments in the drying of grapes, with a view of producing the raisins of commerce were at first undertaken under such extraordinary conditions, that the wonder is, not that there were failures, but that there was any measure of success at all. Every variety of grape, even to the thick-skinned and large-seeded native Mission, was planted, without regard to soil or atmospheric condition, the vines being cultivated in every imaginable way and the grapes dried into so-called raisins after any method, or no method at all. Some of the results, with little wonder, were not gratifying, and a few of the pioneers in the new departure were discouraged from further attempts. The majority, however, had learned the lesson that knowledge and skill were absolutely necessary to success in raisin manufacture, as in most other branches of business, and they devoted their energies to overcoming the obstacles which were in the way to their success. And, in the remarkably short time of scarcely more than four years, our vineyardists have produced a raisin of handsome appearance and good taste, and of such excellent keeping qualities that it has already secured full recognition at home, and superseded in our market all but the finest brands of foreign raisins. That the vineyards have become of importance as an agricultural factor in California the figures amply prove, for in 1880 the sum of $3,500,000 was realized by the vini and viticulturists from their products, about $100,000 of this sum being realized from raisins, and more than $100,000 from table grapes. The estimated value of the raisin crop for 1881 is from $150,000 to $200,000. And in 1880 nearly 10,000 acres of new vineyards were planted, and it is expected, from present indications, that the increased acreage in vines will be for 1881 very nearly or quite 20,000 acres. A great part of these vineyards will produce raisins, as they are a less expensive production, and therefore a more valuable one than are wines and brandy. Almost every county in the State is busy setting out vineyards, and we hear from most of them that raisin-curing is to be engaged in. Alameda County, besides planting vineyards, has established a nursery at Pleasanton of 350,000 cuttings. Lake County dried and sold in 1880 from three acres of grapes, six and a half tons of raisins, netting over $500. Tuolumne, Sacramento and Butte Counties are planting large vineyards of the raisin variety. Ten tons per acre is very properly considered a large crop, but a vineyard in Napa County, in 1880, yielded 107 tons from six acres, being almost eighteen tons per acre, of which, however, sixty-five tons, or ten and a half tons per acre, were from the first, and forty-two tons from a second crop. Some of the grain lands all over the State are being planted in wine and raisin grapes.

This is, of course, but the first step towards the future which the viticulturists confidently expect, but it is a step firmly taken in the right direction. In 1879 the United States paid for foreign raisins and currants $2,600,000, which shows what a large market we ought to have at home for our increasing raisin crop, particularly if the phylloxera pest and the decaying of aged vines in the district of Malaga, Spain, where most of our raisins come from, shall cause a falling off in their export. As our product increases in excellence, no doubt we shall be able to compete with the higher grades of fruit used in the Eastern States. At present our raisins find their market mostly in our own State, where the finest brands are not extensively used, and have a large held in the Southern States and Western Territories, which use largely, like California, the middle grades of the fruit.

THE VINEYARD.

It is true that the real raisin grape will not grow in *all* of California's varied soils, nor in all of her different climates; yet there are almost numberless districts in the State where the process of raisin-growing and curing is successfully carried on. The price of the land varies from less than $10 to $100 per acre, yet there is so much excellent land for the purpose to be obtained at the former price, $10 per acre, that it may be taken as the average one. As a rule, the black loam valley lands bring the highest figures, yet the rolling land adjacent, while it is the cheaper, is really the most desirable, not only having a soil better fitted to the requirements of the vine, but being better drained and drier during the curing season, and having better exposures to the sun for the proper carrying on of that process. A vineyard may be planted and maintained, up to its first productive year, for considerably less than $75 per acre, and the yield, after it has come into bearing, may be safely set down at always $50, and generally $100 per acre. It has been stated that the expense of a vineyard per acre for the first year is $20 per acre, and $15 per acre the second year. The third year should pay expenses, and the fourth year be profitable. It is certain that a vineyard richly repays all the care and outlay expended upon it. The more careful and thorough the cultivation, the earlier and heavier the yield will be. A sandy loam seems to be the best for raisins, with a moist but warm climate. The climate should, at all events, be so warm as to thoroughly ripen the grape, as upon its sweetness depends the quality of the raisin. The air, whether naturally or artificially heated, should not be hotter than 130 degrees, and if it is cooler than 100 degrees, the process of curing will

be slow. Rain and moisture during the cure are an injury to the raisin.

If proper cultivation is bestowed upon the vines, they will increase in the yield from the second year, for twenty years afterward. But the quality of the grape, its flavor and fine appearance, are of vastly more importance than the quantity or large yield, as it is the former considerations which secure for the raisin a name and price in the market. Therefore, the vines for raisin culture should be set wide apart—twelve feet rather than six, a distance which formerly prevailed. This wide distance will insure a higher grade of fruit, handsomer bunches, and larger, sweeter berries. It is also a great convenience and saving of labor and expense in cultivating and caring for the vines. If the ground has the right exposure, it becomes possible to dry the grapes between the rows, where the distance is ten or twelve feet, without transporting them to another locality, which is also an advantage. Irrigation is of importance, although there are districts where it is not necessary, and is therefore not resorted to. It is, however, often an advantage, as well in Winter as in Summer, and submersion at the former season will rid the vines of phylloxera. Care in these respects, as regards irrigation, cultivation, wide planting and proper pruning, insures a healthy vine, with the vigor to resist injury from disease and parasites, producing a large, delicate, sweet berry, with that essential—a thin skin. Where running water is not to be procured, an artesian well is often obtainable, and it has been discovered that surface wells, which almost invariably strike water, and near the surface, are cheaply dug, and, with an engine and pump, will supply an abundance of water for a large plantation.

When grafting is employed, it is important that like woods should be selected—that is to say, a vine having a coarse wood and being a large grower, should be grafted into a stock having the same nature, while a vine of fine fibre and slow growth should have its like stock, and not vice versa.

In the raisin districts of Malaga the pruning is very close, leaving only one eye, and this is probably an important factor in obtaining their high quality of fruit. They prune freely, sacrificing the large yield to the improvement in quality, their yield, in profitable vineyards, being often as low as two pounds to the vine.

METHODS OF CURING.

The white Muscatella, the Gordo Blanco and the Muscat of Alexandria are planted for raisins, the white Muscatella being the true raisin grape, and the one which is planted in the vineyards of Malaga. Different methods of curing prevail in different districts, etc., the world over. In Europe, they are commonly sun-dried, and this is accomplished by twisting and partially severing the bunches, afterwards allowing them to dry upon the vine. Raisins so produced are considered of a superior quality. In other instances the bunches are suspended by the stem from lines, and so hung to dry in the sun. Whether the process is carried on out of doors, or in heated rooms, when about half cured, they are dipped in a lye of wood ashes, barilla (which is a vegetable alkali, used in manufacturing soap and glass), a little oil and salt. After being dipped once or twice they are left to become sufficiently cured.

In Malaga, in Spain, are raised the Muscatella raisins of Europe, this district shipping annually 3,000,000 boxes, which have been strictly graded into eight brands of fruit. Of these eight brands, our California raisins are said by the merchants to be equal to the sixth grade only, which shows us that we have room for much improvement in the future, which will probably come with experience. And we are able to command a market so soon, because the cheaper brands find a larger consumption, though, of course, a poorer price, than do the three or four higher grades of raisins. In Malaga, when the grapes are perfectly ripe, which is in the first part of August, and they must be so ripe as to show a yellow, transparent color, they are carefully picked into willow baskets, and carried to the drying-beds. These beds have a sun exposure to the southwest, if possible, and a natural or artificial slope of about 45 degrees. They are about 45 feet long by 14 wide, and are protected, by tiles around their borders, from the soaking in of water from the surrounding ground in case of rain. The earth they are composed of is loose and dusty, and the grapes are dried in this dust, the Spaniards thinking that it serves to preserve the bloom, so important to the fine brands of raisins. Raisins and currants are dried upon the ground in South Australia, also, and so dusty and dirty do they become that they are actually passed through a winnowing machine before being marketed. The drying beds in Malaga have water-tight covers of boards, which, after the third or fourth night are placed over the grapes every evening, and in the day time, if rain threatens. The climate of Malaga is not any warmer than that of Southern California, but, through covering their grapes at night, they are enabled to complete the cure in fourteen or fifteen days. The grapes under cover are found to be warm and dry in the morning, whereas our grapes are so chilled by the night air and dampness as to require several hours' sun to bring them into good condition again. At the end of eight days, the raisins in Malaga are carefully examined, and those which are drying rapidly clipped out with scissors, as they would become worthless if left on the bunch. The grapes, however, are not turned over, and at the end of another week the raisins are fully cured. If the beds are level, however, the process will take a few days longer time. They are then assorted and packed, which process is a very careful and thorough one, the raisins being strictly graded. To the United States alone Malaga sends annually over $8,000,000 worth of raisins, and nearly $100,000 worth of currants.

In California, artificial heat is commonly resorted to, and is undoubtedly a valuable aid to large growers, of skill and capital. The business is one, however, fitted above all others for the small farmers, being, as it is, one of careful detail, and it seems probable that the California raisins are destined to be supplied from the moderate sized plantations and homesteads. To such farmers, the sun-cure is not only less expensive but much more satisfactory. The custom here is to pick the fruit, when sufficiently ripened—and this point is an important one—on trays of light wood, made about two feet by three feet in size, and holding some twenty pounds of grapes. Great care is taken in handling, both to preserve the bloom and to keep the bunches intact, as a grape broken off the stem during curing becomes valueless, drying away to worthless skin and seeds. The drying trays are exposed to the sun, at an inclination; if possible, on a high hill slope, with a southerly aspect, possibly between the vine rows of the vineyard. When half dried, the grapes are turned over—that is to say, an empty tray is placed on top of the full one, and they are quickly turned over, leaving the grapes, with the under side up, in the new tray. These trays ought properly to have covers for the night time, that the process might not be so retarded as to necessitate the use of artificial heat. Grapes dried in a continuously dry atmosphere, with no dampness as of the night dews, make also a higher grade of raisin. After the grapes have been turned, and when sufficiently cured, they are slipped from the trays into larger boxes, every twenty-five pounds of fruit being separated by a sheet of thick paper, and are left in the store-room for a fortnight. These are called sweat-boxes, and the process of sweating is for the purpose of equalizing the moisture, at the end of a fortnight it being found that a medium is established between the very moist and

the very dry raisins, and also between the raisins and the stems, the former being now soft and the latter tough instead of brittle. It will be observed that in Malaga, where no sweat-boxes are used, strict care in grading takes the place of any equalizing process. From the sweating-box the raisins are boxed for market by means of iron packing frames, having a separable bottom. A handsome layer of raisins is laid in the bottom of the packing frame, five pounds of fruit placed in on top and pressed firmly down. The paper is placed around, the whole slipped into the raisin box proper, and the sides and ends of the iron frame withdrawn. The bottom of the frame is pressed down upon the raisins before it is removed, to crowd them into the box; any hollows in what has become the top layer are filled with large, handsome single berries, the paper is folded over, and the box cover nailed on. If the raisins are not to be sun-dried, or if the process is to be hastened, the trays, after being turned as described above, are placed in wagons and taken to a drying-room where they can be exposed to strong currents of hot air, continual drafts being obtained, in some cases, by the use of a fan. The indoor process takes only one-third of the time required to dry uncovered grapes out of doors, and the cost of the necessary appliances varies very greatly, one outfit, including the drying-rooms and a packing house, costing $2,000, which was considered very moderate. It may also be stated that three pounds of ripe grapes make one pound of raisins. Raisins dried slowly within doors, with no sun exposure at all, or not sufficiently cured, have a finer bloom, or rather, bronze color, and a more delicate flavor, but they do not keep well, and would not do for transportation to cold and moist climates.

The faults of our domestic raisins are of a threefold nature. In the first place, they are not evenly cured, some being dried too much and some not enough. This is to be obviated, not so much by the sweat-box, as by going over and carefully sorting them while they are drying, and by grading them properly when they are packed. In the second place, the bloom, flavor and appearance suffer from the night dews and the fact that the drying grapes are not covered from the chill and moisture. Thirdly, the raisins are too small—a fault of the pruning, which is not close enough. If fewer tons to the acre were grown we should have a finer berry, but a vine which bears fifty pounds of fruit cannot supply us with handsome raisins.

SEEDLESS VARIETIES.

The seedless grapes, which are almost unknown here, are bound to receive attention, and to become very valuable, if they do not entirely supersede the commoner varieties. The seedless Sultana raisins now come principally from Smyrna, while the currant of commerce is a small-sized grape largely cultivated in Zante, Ithaca, on the southern coast of the Gulf of Corinth, and at a few other places. These Grecian currants are dried and stored in solid masses, which are dug out for shipping with picks and spades, and then again compactly treaded into casks, and the demand for them in the United States is very large.

When the wholesale merchant in England, and presumably in the United States, receives his cask, he is obliged to knock it to pieces, to break the mass of dried currants apart with a pickaxe, sometimes to pass them through a machine, to separate them, and to hang them up in a bag, through which a small quantity of oil is allowed to drip, and which afterwards, no doubt, serves to attract that coating of sticky dust with which the currant is clothed when it comes to the hands of the housekeeper. It is when we compare the *dirty foreign methods* employed with wines, raisins and currants, with those at our own disposal, that we most fervently hope to see our vineyards superseding and taking a topmost rank above those of the whole world.

The Zante currants, in their native place, are grown on valley lands and submerged during two months in the Winter. The mode of cultivation in Greece, and the pruning, are entirely different from our methods, and should, no doubt be studied by us, if we are to make a success, of the seedless varieties. However, some attempt at the growth of Zante currants has, doubtless, been persevered in to some extent in Southern California, for at the Riverside Fair this year were exhibited two glass jars of dried Zante currants. The Zante and the Corinth are not identically alike, although the differences in flavor and in growth are not material enough to make any difference in their market value. The land for the seedless grape should be thoroughly well prepared, being ploughed and then cross-ploughed, and one-year-old vines set out and planted very wide. In South Australia, where they are being introduced, they are put twenty-four feet apart, and the shoots which are left after pruning each year are trained or trellised along wires, which are run through the vineyard. The Zante does not bear so young as the Muscatella does, and in pruning the Zante the old wood is cut out and the long, bearing rods of the last year's growth are left. It has been very significantly said that "there is a fortune in store for the man who succeeds in growing the Zante currant in California," and doubtless with a great deal of truth. Hitherto, this variety, when tried, has been planted in vineyards and treated and pruned like the Mission grape, which was far from being the proper treatment. No grower yet having flooded it in the Winter and pruned it long, it is not by any means proven a failure here. The Zante is a black grape, and, under the right conditions, very productive, but perhaps the Sultana will be still more valuable to us, as it bears largely a good-sized fruit and finds a very ready market. It is preëminently the favorite with housewives, and is always demanded in excess of the supply, and is sure to be planted largely by our growers when once they have learned its good qualities.

From the seeds of grapes, it may be well to mention, is obtained grape-seed oil, which has a value in commerce. Probably the grapes would yield a higher per cent of oil here than they do in southern France, the yield being there from ten per cent to fifteen per cent. This product is better and sweeter than nut oil, and is burned in lamps, giving a clear light, without odor or smoke. It is of a light yellow color, and will make soap readily, but so far the soap so made has lacked hardness. It is discovered that the black grapes yield the most oil.

In Europe, and in Australia, they have commenced to plant native American grapevines, upon which stock to graft other varieties, securing, in this way, a stock which, up to the present time, has seemed to be phylloxera-proof, or uninjured by the proximity of that parasite. It would no doubt be well for us to try the remedy ourselves, and, until such time when our native vines succumb, enjoy immunity from the scourge. If the American vines do finally become infested, no doubt the viticulturists of the State will unite, as they are now urged, in quarantining the affected vines, burning them and their surroundings out, and, by concerted action, ridding their vineyards of every diseased root. In this connection an aid, valuable in preventing the incoming of winged phylloxera, is the hedge or double hedge, of any one of several varieties, and the buhac plant, which, both growing and in a dried state, is such a sure insecticide.

OLIVE CULTURE.

The olive tree is supposed to be a native of Asia, but it was introduced very early into Europe, and the trees supplying the olives and the oil of commerce are all, or very nearly all, contained in those countries of Southern Europe and of Northern Africa which border on the Mediterranean Sea. The tree was introduced into South America from Spain in the sixteenth century. From there the seed was sent to the Spanish padres, who founded the Missions in California something more than a hundred years ago, and by them were planted in the Mission orchards, still in bearing. This Mission olive has a small fruit, and is not a prolific bearer, and is supposed, from its being correctly reproduced from its seed, to be the original wild olive, and doubtless will be valuable to graft other varieties upon. The olive has come to be an important product, and it has a vast future in this State, considering the price which is realized and the increasing supply of oil and of olives which is yearly marketed.

CLIMATE REQUIRED.

The olive tree requires a climate whose mean annual temperature is not less than 57°. It is also necessary that the mean temperature of the coldest month in the year shall not be less than 41°, and that the thermometer at no time drop to 14° above zero, as that degree of cold immediately destroys the young wood and the fruit, or chance for fruit, for the year. A greater degree of cold than that just indicated may, of course, be borne by the olive, but the culture will not be profitable. This requisite climate is somewhat a peculiar one, having as it has only 16° difference between the coldest month and the mean annual heat, and is not by any means a universal one, and the conditions are not found to be fulfilled upon the Atlantic Coast. It was once the popular belief that the olive would not grow at a distance from the sea, but experience proves that if the climatic conditions are obtained in the interior, the tree grows there as readily as upon the seaboard.

In San Francisco there are only 8° difference between the Summer and the Winter averages, and hardly more at the different points from Monterey to San Diego, on the coast south. In the interior of the State the variation is greater, as: 19° at Los Angeles, 24° at Sacramento, and 34° at Chico. It is probable that the tree is not injured by a comparatively high degree of heat, since it is grown in Egypt and other hot countries of North Africa.

The territory in California over which the olive may be grown is a considerable one, as is seen by this partial list of the places in whose vicinity the climatic conditions are fulfilled, to wit: Redding, Tehama, Marysville, Colfax, Sacramento, Stockton, Merced, Sumner, Vallejo, Benicia, Livermore, San Jose, Hollister, Salinas, Los Angeles and San Diego.

In addition to the adaptability of the southern part of the State for the growing of semi-tropical fruit, it is also claimed that there is a belt having no frost running along the foothills and extending to an elevation of two thousand feet. Some farmers, however, deny that there is any such semi-tropical zone extending through the State, and claim that the belief has grown from the fact that the frost in California appears in streaks, striking in one place and sparing an immediately adjacent territory; which latter spot, however, will be the sufferer at some other time.

The following comparisons of temperature between some foreign and home points will be found interesting:

		Mean.	
Sacramento	(R)	68°.	60°.
Rome and Alexandria and Los Angeles	(A)	66°	67°
Florence and Fort Tejon	(F)	59°	58°
Lisbon and Livermore	(L)	61°	61°
Marseilles and Benicia	(M)	58°	58°
Algiers and San Diego	(Al.)	64°	62°
Jerusalem and Merced	(J)	62°	63°

The means are similar, and there is not a difference of 3° in the means of the coldest months of the two places.

SOILS.

Our climate in California is in every way fitted to the yearly growth and time of bearing of the olive, but the temperature is to be considered before soil, as the tree is a hardy one, doing better in a poor soil than in a rich one. In a warm and dry climate the fruit is best matured, and where there is sufficient rain to grow the hardier grains, the olive will thrive without irrigation. The tree is, however, affected by a soil absolutely unfitted for it, as one containing superabundant moisture, and in rich, damp ground, will put forth a great number of leaves and branches, but the oil will be of an inferior quality. A warm light earth is perhaps the best of all, as on a dry hillside or a sandy plain. Loose, gravelly and stony places are all eminently suitable, and if the ground is not naturally dry, it should be well drained. It may be stated that the yield of the trees here promises to greatly exceed what is realized in Europe, which is probably due to the newness of our soil. However, there are European varieties of the tree bearing a much larger and finer fruit than is the Mission, and it would certainly be profitable to propagate selected imported stock. Thorough fertilizing has the most important results on the oil yield. Perhaps no other tree will more amply repay a constant and friendly care. It should also be stated that when irrigation is not resorted to, the cutting or young tree must be frequently hoed about during the Spring and Summer, the ground having been well prepared before the cutting was put in, and at least so dry as to leave no mud.

PROPAGATION.

An olive orchard seems to be something which once possessed, is possessed for all time, for the tree continues profitable to an exceeding great age, trees in Europe known to be several hundred years old being still in bearing. It is true that where the tree is neglected it will bear less, and only on alternate years; and where the yield is excessive one year there seldom is a crop the next. But in France the thorough cultivation and pruning adopted secure a continuous yield every year. The tree may be propagated from cuttings taken from the branches, or from the roots; from suckers, from certain little woody knots that grow on the tree near the ground, and from the seeds. When the latter are used the ripe olive is selected, the pulp removed and the seed soaked in strong lye, when it is planted in sandy soil, in a sheltered place, and occasionally watered. Grafting and budding are performed on this as on the apple or pear tree. When the seed is planted in February, the young tree will appear in July, and these little trees are kept six or seven years in the nursery. When grown from seed, it is necessary to bud or graft on the desired variety, as the seed will not produce a tree of as improved a variety as those now prepared in orchards.

When the cuttings are planted, they are taken

from healthy trees during the Winter. They should be about an inch in diameter, and something less than a foot and a half long. They are trimmed and put in a shaded place, in sandy soil. They are permanently planted early in the Spring, after the buds are dried, and while a small per cent of the shoots will probably be lost, the greater number will readily grow. They are planted twenty feet or more apart, and nearly covered with the earth, the place being marked by means of a stake. In theory, it is perhaps better to always propagate by means of the seed, a better tree, better rooted, being obtained; but in practice, so far as the olive is concerned, it is found more sure and convenient to resort to cuttings. The tree, as a general thing, is from seven to ten years in coming into bearing, but the Spaniards are said to plant large branches, some ten feet long and two or three inches in diameter, sunk four or five feet in the earth, and surrounded with a couple of feet of clay. These branches then take root and bear in a couple of years.

CULTIVATION.

The trees here are commonly set twenty feet apart, and at the end of ten years the trees touch, and at the same time will be in full bearing, and will now need constant cutting back, and these smaller trees are considered more convenient for gathering fruit from than the very large ones standing at a greater distance apart. In Europe, the trees are sometimes planted in small clumps or clusters, serving as wind-breaks to each other, and facilitating the pruning and other cultivation. Trees from the cutting generally bear a little the fourth year. The sixth year about fifty gallons of olives will be yielded by each tree, or by each tree in good condition. However, the yield is very likely to be large only on alternate years. Constant pruning increases the yield, not only of fruit, but of the percentage of oil obtained. An acre of trees, planted twenty feet apart, has borne, after the seventh or eighth year, some 4,000 gallons of fruit. This, however, is a very large yield—40 gallons to every tree—and, if a quarter as much is obtained regularly every year, the crop will be a very profitable one.

Isolated trees, of sufficient age, bear as much as 150 gallons of fruit; but to obtain this result, they must be set wide apart, and attain a very large size; and such trees, only a few to the acre, would probably not be more profitable than the orchard of smaller trees, twenty feet apart. The yield continues to increase every year, up to twenty, or even thirty, years of age, but seems to be unequal in quantity, varying between different years, and between different trees. It is estimated that eight gallons, or fifty pounds of berries, will make one gallon of oil. A mature orchard in Europe is expected to yield two gallons or more of oil to every tree, every other year; and the percentage of oil obtained from the berries will be much less without thorough fertilization. The oil here is worth from five to ten dollars per gallon, the variation being according to the grade of oil obtained, and from five to ten gallons of oil per tree is counted upon. The cutting that is placed in the ground will send up several shoots, which should be left undisturbed for a year, that the roots may have a symmetrical and undisturbed growth. The Spring of the second year, all shoots but one are cut off close to the ground, and the one retained is generally tied properly to a stake or post driven into the ground. This tree obtained is pruned very little, or not at all, for a year or two, the mere object of any pruning at this time to be to confine the main growth to the trunk, if too numerous branches seem robbing it. Afterwards, the branches are all cut away, to the height of five or six feet, that the trees may be cultivated with implements drawn by horses. When the tree is once in bearing, the yearly pruning determines, in great measure, the yearly crop, the berries growing from the newer wood.

THE BERRY.

The tree blossoms in the first part of the month of May, and the fruit forms during the first part of June. Thus, it is seen that the weather at that time in this State is in every way suitable to the time of blossoming and fruiting of the tree. The berry is usually ripe in November, and sometimes picking for pickling is commenced a month earlier, while on the other hand, a large and early rainfall in our southern counties has occasionally delayed the maturing of the fruit as much as two months. If the fruit is gathered as it becomes purple, and before fully ripe, the oil, though somewhat less in quantity, will be of a superior quality, color and fragrance. In Europe, the berries are commonly gathered by women and children, being shaken or knocked to the ground and then picked up. This is a very objectionable method, as it bruises the olive, and it is more economical here to pick by hand, one man picking several hundred pounds per day. The sacks and ladders are carried along the row, in the best orchards of Santa Barbara, in a wagon, and the man remains in the wagon, to pick the fruit, which enables him to proceed with great rapidity, and also to retain the berry in its best possible condition. A winnowing machine is used to separate the leaves and imperfect berries. The best olive for picking, and the favorite in France for that purpose, is the Picholine. For pickling, the fruit is gathered in good season, the finest berries selected, and these placed in a weak solution of soda and lime. They are left for ten or twelve hours, or until it becomes possible to readily detach the pulp from the kernels, when they are removed and put into cold water, where they remain a week, the water being changed every day. This process removes the tannin, and when the fruit is no longer bitter, it is bottled in a brine which has usually been spiced.

THE OIL.

After the berries are gathered, if they are to be crushed for oil, they are first dried for as long as two weeks, or nearly that length of time, that the moisture may evaporate. If the weather will not permit rapid drying out of doors, it is better to resort to artificial heat, which will complete the process in forty-eight hours. The heat required is from 110° to 130°, and should, at least, be under the latter degree, and not over. There should be no unnecessary delays in the process of drying, crushing and pressing, as the lapse of time during the different stages will make the oil rancid.

The fruit is invariably crushed by means of a large mill-stone, rolled by horse-power around upon its edge, the berries being in the trough in which it rolls. If the edge of the wheel is serrated, the kernels or seeds will escape crushing, and they will afterward yield tannin and a little of a lower quality of oil. The stone working in one orchard in Santa Barbara is four feet high and six inches thick, the diameter of the trough being six feet. The beam through the stone to which the horse is fastened is fifteen feet long, and the whole crusher, which stands under a cover, cost fifty dollars, and is sufficient for a thousand trees.

The press, which, if it is a cedar press, will cost about $160, may be operated by the same man who attends the crusher. The oil dipped out from the crusher is generally kept for enriching the poorer grades. The mash, or pomace, is put into crash-linen bags, and the bags put into the screw-press, wooden slats separating every few inches in thickness of the crushed olives, and the power applied. The oil obtained is of the finest grade, and is left in covered tanks about fifty days, when the oil separates from the water in the fluid, rises to the top and is drawn off. The pomace is pressed again, a second grade oil being obtained, and if a still inferior quality is desired, the pomace is broken up, hot water turned over it, and the fermentation will liberate the remaining oil, which may be burned, used on machinery and in the manufacture of soap. Whatever pomace remains after all the oil is extracted

is either fed to pigs or used as fuel. The oil becomes clear by standing, and is kept covered in a place having an even temperature.

FIGURES.

The following are a few of the desirable varieties of the olive: The Olivier Amygdalin, Aglandaou, Picholine, Olivier Pleureur, and Olivier du-Lucque.

The United States imports annually over 300,000 gallons of olive oil, valued at over $400,000, aside from the pickled olives imported. San Francisco imports over 45,000 gallons, valued at nearly $93,000, and paying a duty of $1 per gallon. San Francisco imports, in addition, $13,000 worth of pickled olives annually. Great Britain uses annually 5,000,000 gallons of the oil, and at present this all comes from South Europe and North Africa.

Italy has over a million acres planted in olives, and Spain annually exports some $10,000,000 worth of the oil. France does not export more than a fifth as much as Spain.

Many of these orchards in the Old World are extremely old, in many cases the methods employed are antiquated and the soil becoming impoverished. It is already known that the yield which we can obtain in California is nearly double that of the European orchards, and, with the great value of the commodity and the wide market, combined with the circumscribed limits of production, it is seen of what great prospective value to the State are the young olive orchards already planted, as well as the large acreage which will certainly be devoted to that tree within the next ten years.

FRUIT RAISING IN ALAMEDA COUNTY.

By W. E. MACINTIRE.

In the level and fertile valley from Haywards to San Leandro and Fruit Vale, the eye is greeted with some of the finest and most productive farms to be found in any portion of the State. Almost all branches of farming are carried on with profit, wheat-growing and the cultivation of orchards being the most important in the level parts of the valley, while the hillsides, sloping toward the sun and well-watered by perennial springs, afford more favorable locations for the growth of vegetables, including all kinds of garden products, and also locations for the larger industries, such as stock-raising, dairying, etc. All of these are here prosecuted with the accustomed vigor of our people, always with fair success, and in a large number of instances with highly profitable returns for both the capital and labor employed. But it is to the great fruit cultivation carried on that the present article is confined, and to that alone I shall devote almost exclusive attention. Having lived in this section some three years, and observed its enormous natural wealth, as opportunity favored, I shall give some of the facts as I know them, and some of the results direct from the farmers themselves.

The soil is very fertile, being at the first a deposit from the washings of the hills, and since watered by many small streams, such as the San Leandro Creek, San Lorenzo Creek, and others. These, from time immemorial, have overflowed their banks and formed on each side a rich alluvial soil, which extends to a considerable distance. This overflow has now ceased, and is only to be found in very rainy seasons, near the mouths of the streams and along the shore of San Francisco Bay. In this soil, which is perhaps elevated from eight to ten feet above the rest of the valley, in wavelike form, the best orchards are to be found; and if one were to take his stand on the hills behind the county farm and just above Lake Chabot, he could quite distinctly trace the San Lorenzo Creek by the great orchards which skirt it for more than half a mile on either bank throughout its entire course. Here are the farms of Messrs. Henry Smyth, E. T. Crane, Henry Marlin, C. W. Hathaway, William Meek, Eli Llewellyn and others, all of whom have valuable and productive orchards, among the largest and best in the county. Mr. Meek alone has some 2,000 acres of land, about 600 of which are covered with fruit-bearing trees. The others have orchards varying from twenty to 100 acres, in splendid condition, the trees being from ten to twenty years old.

The cost of this land is indeed high, when compared with that of most parts of the State, but examination of the facts will show that, in proportion to the returns, the price is a much more profitable investment than any in land in the old Atlantic States.

The bare unimproved land within two miles of the railroad is held at from one hundred to three hundred dollars per acre, according to quality. The hillsides are usually stocked with cattle, or sown with wheat and barley for hay, and are worth from fifty to sixty dollars per acre. Ten acres of this valley land make a neat and comfortable farm. It can be bought for two thousand or two thousand five hundred dollars, and at once set out in trees.

In this part nearly all the usual varieties of fruit are to be found—cherries, apples, pears, apricots, plums, prunes and figs—all growing well and yielding plentifully. Of these the cherry does best, and on the average pays the best, being more convenient to market than any of the great cherry orchards of the State. From one hundred to one hundred and fifty trees are put out to the acre, and in a good season they will average four and five dollars' worth of cherries to a tree. Some have even yielded six dollars' worth, but from this, of course, must be deducted cost of picking and packing, and transportation to San Francisco. There are numerous instances of cherry orchards averaging two hundred dollars to the acre over all cost of picking and transportation. Of course, the value of the property has then much increased, and the land, that originally was worth two hundred and fifty dollars, now, with a fifteen-year-old orchard upon it, is worth from eight hundred to one thousand dollars per acre.

When the orchard is first planted, most farmers also set out currants between the young trees, and cultivate them while the orchard is growing. The third year they will clear from fifty to seventy-five dollars per acre, and during their fourth, fifth and sixth years will average at least one hundred dollars to the acre. About the seventh year they begin to die, and in the eighth year they are usually dug out. Some even replant them, and during the next five or six years gather both cherries and currants from the same land.

In planting currants the farmer cuts slips about twelve inches long, then buds them, leaving four or five buds at the top, when they are set out between the rows of young trees. They usually grow without trouble, unless annoyed by their enemy, the currant bug, and have paid well all who have raised them. The currant season begins in the latter part of May and lasts about six weeks. The picking is mostly done by Chinamen, who work for seventy-five cents a day and board themselves.

Apricots have also done well in this valley, and last year sold at five and six cents a pound. Mr. Blackwood, at Hayward, cleared (it is said) in a single year (1880), eight hundred dollars per acre; but usually an acre of good trees will average two and three hundred dollars. The Moorpark, Blenheim and Golden varieties are all to be found here, and do well, although the Moorpark is in some seasons greatly troubled by bugs. Whether or not science will be able to match these pests, remains to be seen; but there are those who think that human wit will yet devise means for their destruction.

The peach does not flourish so well as in many other parts of the State, especially in Sonoma County, and the many varieties of grapes which are also abundant in that county, fail here.

The pear, however, comes fully up to anything in the State, and this last year immense quantities were sold to Porter Bros., who shipped them to Chicago, and even to New York and Boston. They bring about one dollar a box at the orchards.

The plum grows well in this climate, the chief variety produced being the yellow-egg. Prunes of immense size are also raised in large quantities. The Hungarian is the most important kind, and is shipped largely, both for canning and drying.

To give results more closely: A good apricot tree will produce nine or ten boxes of fruit, each box containing about thirty pounds, which generally is worth three cents a pound, and has sold the last two years at six cents. A cherry tree, when cherries are from five to ten cents a pound, will average about six dollars. A good apple tree produces about ten boxes, of fifty pounds each, worth from sixty cents to one dollar a box. Bartlett pears usually sell at one dollar per box, but this year, on account of scarcity East, ran up to two dollars.

The means of transportation from this valley are good, San Leandro being only nine miles from Oakland, San Lorenzo twelve, and Haywards fifteen; to San Francisco it is six miles further. The freight by rail is one dollar per ton from San Lorenzo to San Francisco, and to Sacramento three dollars and sixty cents. There is also a steamer running to Roberts' Landing, which is only two miles distant, at the mouth of San Lorenzo Creek, and the chief bulk of the grain and vegetables goes over to San Francisco by this route somewhat cheaper than by rail.

It will be seen from the above examination of figures that small farming can be made to pay, and there are many instances here of ten acres netting an annual income of from two thousand to three thousand dollars. Of course this is not done at once; the farmer has to wait two years for currants, and eight to ten for cherries; but the investment in any case is certainly a safe and profitable one. If circumstances are such that he must have an immediate return, he can put out part in trees one year and cultivate the rest from year to year, raising wheat, vegetables, or whatever he may prefer. Certainly no investment of three thousand dollars would bring any such return in the Eastern States, and if the average immigrant but knew the resources and capacities of this great State, he would doubtless avail himself of its advantages and cast his lot with us.

There are in this vicinity abundant chances for setting out new orchards, and work of this kind is being steadily pushed forward, with prospects of large success. The trees grow to a size altogether unknown in the East, and at a distance strike an observer as being some great forest, beautifully laid out in squares for fifteen or twenty miles. The climate is temperate, seldom very warm in Summer, as it is tempered by a steady west wind from the bay most of the season. In Winter, abundant rain falls for all purposes, and frost is only an occasional occurrence. The great convenience of this district to a good market certainly gives it marked advantages over the more remote parts of the State, and for its peculiar products this convenience is entirely necessary. Many of the farmers drive to Oakland, and so get full returns for all that their farms produce, without the intermediate charges of commission merchants, deductions of freight and other costs. With steady industry and prudence, no enterprising man need fear failure; and as a mere investment to the capitalist, few chances present so sure, regular and profitable in all respects. The small farming recommended above seems, perhaps, to the stranger too inconsiderable to require the efforts of a lifetime, but there are here to-day some of the most comfortable and independent homes I have ever seen, deriving a substantial and regular income from twenty acres, at least equal to that from 300 acres in New England.

To the dairyman, splendid opportunities are presented in the immense hillsides favorable for pasturage, and cool and valuable springs are found in abundance running throughout the dryest Summer. The nearness to the cities remarked above also favors his business and offers abundant sale at cheap and ready conveyance for his milk, butter and cheese.

To the small capitalist, who has only five or six hundred dollars to invest, there are good opportunities for starting poultry ranches on the hills, where he can make an independent living and good wages, with a probability of rapidly increasing his capital. Eggs sell here for double the price of the East, and many a thrifty and economical family have acquired a competency in twelve or fifteen years.

Strawberries are easily raised, and just now there can be seen a large quantity of vines on the farm of Mr. H. Nielson, of San Lorenzo. They require irrigation to keep the plants alive, and also to drive worms away from the roots. Most of the work required in attending to them is done by Chinamen, of whom Mr. Nielson has some sixty or seventy throughout the season. The berries attain a growth, familiar, of course, to all Californians, but much larger than those of the East, and an actual surprise to those who for the first time visit the coast.

Blackberries and raspberries are also raised by the ton by the same gentleman, and pay about the same as currants. He has several acres out in bushes, and in their season they are one of the prettiest sights in the valley.

To one who has leisure to stop in this village, and who would wish to see a cherry orchard in No. 1 condition, I would recommend a visit to the orchard of Henry Smyth, Esq, the proprietor of the Alameda County Agricultural Works. Mr. Smyth has a splendid tract of land south of the San Lorenzo Creek, and a walk through his orchard would satisfy the most enthusiastic admirer of fruit trees. These trees are kept in splendid condition and are a model of neatness,

care and healthful appearance. They were set out in spendid ground in regular rows from all directions of the compass, and their arrangement would gladden the eyes of the strictest mathematician in seeing nearly all the rectilineal figures known to Euclid thus sketched out with majestic orchard trees. Parallelograms are here—triangles, equilateral, isosceles and scalene, rhomboses, rhomboids and trapeziums, squares, rectangles, trapezoids, and, making a complete circuit of the orchard, the visitor is surprised to find a radius pointing at him at every footstep. But the order is a secondary matter, although it cannot fail to attract attention. The stout, sturdy stems of these trees, and cherry trees, too, are simply among the marvels of the land, and when the luscious fruit covers them in tons, in May and June, then is seen the perfection of their beauty, the ripe, red fruit swaying about among the green leaves, a fit sight for the gods of olden lands and a fit scene for their hymeneal joys and festivities. Nor are the great orchards alone on the banks of this stream; they are to be found far away in other parts of the valley, almost equally prolific, and certainly as beautiful. Nearly two miles north of this creek, and along the county road to San Leandro, is the farm and orchard of Leonard Stone, Esq. A visit here would also repay the traveller, and from Mr. Stone himself any facts connected with the orchard interests of the place could be easily obtained. His large tracts of currant land are indeed a fine sight in June, and many busy hands can be seen among the shrubs, gathering the berries for market. They yield him a handsome profit, and show the great possibilities of the soil itself when intelligent heads and swift hands are applied to its cultivation.

W. E. MACINTIRE.

San Lorenzo, October 15, 1881.

PRODUCE COMMISSIONS, EXPENSE, Etc.

Farmers in general—unfortunately for themselves—are frequently seriously embarrassed for the want of ready money. They may have its equivalent in the guise of land or prospective crops, but these are not double eagles, and a certain number of the latter must be forthcoming or the crops cannot be harvested and sold. The fact may also be noted that they—or the majority of them—are more or less remote from the great markets of their State or section. These two truths, added to the one that no market absorbs itself all that comes into it, but acts as a distributing depot for other points, thus requiring the farmer to secure a foreign outlet for his product, have resulted in bringing into existence the middlemen—now recognized by farmers, and interior merchants who handle produce to any extent, as an absolute necessity. They are better known as commission merchants, are always ready to help their shippers, though in every case through an interested motive—that of securing their shipments—and are frequently looked upon by the rustic as a sort of licensed highwayman, though as it will appear before the end of this article is reached, this suspicion of dishonest dealing is quite frequently unfair. There are a few farmers in California who sell their own crops in this market without the aid of a middleman, but they are very few and far between, and almost all the grain, wool, honey, dairy produce and fruit, which is placed upon the market or exported is handled by the commission merchants, who receive for their labors from nothing to eight per cent of the gross amount of a sale before freight, drayage, storage, or any of the incidental expenses that beset the farmer's consignment, are deducted. It will perhaps prove interesting to take a few of the principal products of the State and explain, not only how they are placed upon the market, but some of the expenses which are incurred and their relative amounts, which may also furnish a key to the proposition why many articles which cost little or nothing to grow or raise should be held at such comparatively high figures in the market. The cost of production, it is proposed, shall not be considered, as that is an entirely different question. The idea is simply to show how, through various charges, the cost of an article increases from the producer to the consumer.

THE COST ON WHEAT.

Take wheat, for instance. After the final act of production is completed it is sacked, which represents a charge of something less than ten cents per cental or hundred pounds. Then the farmer wants money immediately, and the wheat goes into a warehouse near where it was grown, the warehouse receipt journeys by mail to some middleman in the city who advances the money. Now must be added the cost of storage in that warehouse, and the premium paid for insurance. When it comes to San Francisco, or Vallejo, or Oakland, or Port Costa, or to any other point available to deep sea vessels, a charge must be added for freight to that point, and if it comes directly into San Francisco, then still another for drayage to the warehouse. Then in order to determine the exact quantity it must be weighed as it enters the warehouse, for which another toll is taken. Then follows another charge for storage. While lying there, samples are taken to the Produce Exchange every morning by the commission merchant in whose hands it is, and it is there sold, probably for shipment to England. Now it is removed to some wheat ship at an additional expense of some fifty cents per ton for truckage. Then more insurance and some incidental expenses, and an outlay of from $15 to $20 per ton freight to Liverpool, and there more charges, until it finally disappears in one form or another into the mouth of the consumer, who pays about twice as much as it could be obtained for from the producer. Out of the farmer's pocket comes every item of expense on account of his wheat until after it leaves the hands of the middlemen in San Francisco. Aside from the cost of sacks, storage, in-houses for the amount of grain produced, some surance, drayage, and interest on borrowed money, he must pay the commission firm five cents on every dollar of the gross amount of the sale, where the transaction does not reach above $1,000, and 2½ cents where the sale amounts to more than $1,000. By way of parenthesis, it may be stated that, owing to the rivalry occasioned by there being too many commission handle the grain for 2½ per cent where the sum

is under $1,000, and for 1¼ per cent where it is over; and it is asserted that firms can be found who, in order to secure the business, sell for a brokerage of one per cent, or even less, it being at the same time charged that to make this method of procedure profitable, it is necessary to "shave" a little either on the weight or on the price returned to the farmer. So much for wheat.

TRANSPORTATION OF EGGS.

About the farthest point in the State from San Francisco from which eggs are received in this market is Ventura County. Let us trace a lot back from the consumer to the farmer who owned the hens which laid the eggs which were eaten in San Francisco. The retailer sells them at 45 cents per dozen, and he pays 40; there's five cents. Five per cent commission on the sale to the retailer at present prices is 2 cents per dozen, which makes 7 cents; and 1 cent for drayage from the wharf and 8 is the result; add 2½ cents per dozen freight from San Buenaventura, and 1 cent for warehouse charges at that place and the result is 11½ cents. If the eggs came from the interior of the county add another cent for transportation, and give the interior merchant at least 3 cents for his profit, and you have a total of 15½ cents which have been paid by the producer for each dozen, over and above the original cost price. Roughly, then, if you lived in Ventura County you could buy from the farmers for about 30 cents per dozen the same eggs in a much fresher condition than you get them here for 45 cents per dozen. But don't emigrate to Ventura on that account, for your boots and shoes, hats and caps, and other articles of apparel, and all delicacies and luxuries, and nearly all the eatables will cost you more there than here by a heavy percentage.

It is exactly the same with butter. Allow half a cent per pound—three-quarters would come nearer the mark—for freight, very nearly two and a half cents for commission, and fully five cents per pound for the retailers' profit, and a total of eight cents per pound, or about fifteen cents per roll, more is paid by the consumer than he could get the same article for at the dairies. The charges must seem to the shippers to be interminable some times, and when the market for any one product breaks down, as it does occasionally, the shipper actually finds himself owing the commission man money after the goods have been sold.

A CASE IN POINT.

Last year a merchant received a shipment of potatoes from the interior, with a limit upon them, which required the merchant to secure a certain price or no sale. The market was not in such a condition that the desired figure could be at once obtained, and the "praties" went into a warehouse to await a favorable opportunity. The storage piled up, and still the market was not in good shape. The potatoes were spoiling, the merchant was in danger of losing the amount expended for freight, and something must be done. They were removed, and found to be one-half or more rotten. Men were hired, and they were picked over. Those that were good were sold at market figures; the decayed ones were carted away; the sacks which had contained them were sold, and the transaction entered on the books. Then the shipper, coming to the city on business, called at his merchant's in the blissful hope of carrying away a nice little sack of coin for his potatoes. Just imagine how he felt when, instead of receiving it, he was confronted with a bill of three dollars, and—the merchant knowing he would be suffered to do no more business for that farmer—a request that it be paid. It was even so. The freight, drayage, storage, commission, cost of labor in picking over, and cartage of the decayed portion to the dumps, had not only eaten up every dollar received from the sale, but had left the shipper three dollars in debt. This is a simple, unexaggerated fact, and is only one out of many that occur every year. Of course, the shipper stormed, swore he had been robbed, vowed the books had been "fixed" for his especial examination, and went back home, where he vigorously denounced Messrs. Blank & Blank as the most accomplished scoundrels outside of San Quentin. But the moral not to put a high limit on shipments to a constantly-fluctuating market was not lost upon him. From a standpoint which is entirely neutral as between the farmer and the middleman, the writer desires to make an observation or two on one phase of the relations between them which is a source of continual trouble and much slander. Go from Portland to San Diego, interviewing farmers and country storekeepers by the way, and it is very probable that by the time the journey is finished you will have heard every commission merchant in San Francisco referred to as being, if not positively dishonest, at least quite "tricky." Probably in four-fifths of the cases where the farmer imagines dishonesty on the part of the merchant, no cause whatever exists for the very unjust suspicion. This is very excellently illustrated by an incident which occurred precisely as it is now related:

A FARMER'S INVESTIGATION.

A man, very evidently a farmer, made his appearance upon the floor of the Produce Exchange one morning during the session. His presence being an infringement of the rules, he was politely requested to withdraw. He did so, but loitered in the vicinity until after adjournment, when he approached one of the officers of the Exchange, and asked the price of No. 1 wheat. This led to some conversation, in the course of which he stated his belief that he had been defrauded by his commission merchant, who had received and sold No. 1 wheat, but had returned him the lowest price for No. 2. How old he know his wheat was No. 1? Why, it equalled that grown by any of his neighbors, and beat the product of several of them. It was No. 1 wheat, of course, but there was a sample of it which would speak for itself. The official examined the sample, and then exhibited to his visitor a sample of No. 1 and No. 2 wheat, according to the standard as established by the Committee of the Exchange appointed for that purpose. The farmer at once saw that his was a very fair sample of No. 2 wheat, and that instead of having been robbed, he had really received a very fair return. The visit did him good, and he has since undoubtedly been slow to accuse his commission merchant of unfair dealing. It would unquestionably be found if each charge should be investigated that the large majority had no more foundation than the one referred to above. The farmer depends largely upon the newspaper quotations which he gets once in twenty-four hours, and if the price received is lower than the figures contained therein he is apt to cry "thievery," without stopping to reflect that in many instances there may have been some sudden fluctuation in the market in the course of which his shipment was sold, and that in all probability it was not specifically referred to in the next day's issue of his paper, or, more probably, that his consignment was like the farmer's wheat—not up to that standard which was necessary to insure a good price. There are undoubtedly times when the commission merchant takes more than his regular rate of commission, but in general these are where he has secured an unexpectedly fancy price for the shipment, a figure above the highest market quotations, and he considers himself as justly entitled to half of this extra profit as a reward for his success. Parenthetically the opinion may be ventured that the farmer would always be willing to divide in cases like these if he were asked—which he never is. It was only a short time ago that a dairyman came across a *retail* market report in one of the

daily papers, and because the butter quotation ranged from three to five cents per pound above what he had been receiving, he raised a storm about the ears of his commission merchant, and was about to change his shipments to another house, when he chanced to be enlightened by having the *wholesale* report laid before him.

INCIDENTS OF UNJUST SUSPICION

On the part of the shipper could be multiplied by the column, and on the other hand it would not be hard work to find a number of sly little tricks played by the commission men when they want to make the best of a bad bargain, or save themselves from a loss occasioned by some error in a sale. But even if the suspicions on the one side are sometimes well founded, still it is by no means the case that the merchants are blamable for low prices received for goods not up to the standard represented by the highest quotation, the shippers believing that they are. Now, after an extensive digression from the subject, it will be proper to get back again into the path, and taking up the thread, consider another branch of it. If there is any one thing through which the produce commission men have made more money this year than another, it is the very practical product—beans. There are some firms—two or three in any event—who have made what a man in moderate circumstances would call a handsome fortune. Last year these same firms were thoroughly in the "dumps." The market was unusually listless in the Fall, it obstinately refused to advance to any great extent, and these gentlemen found themselves unable to dispose of beans they had purchased outright, or else by returning them to their shippers, save at a considerable loss. So they took their warehouse receipts to the banks, borrowed money on them, or rather what they represented, paid interest, insurance and storage, and waited patiently for daylight. Month after month passed. Lima beans—the highest priced in the market—went down from $5 per hundred in December to $2 in June last, and even at that figure they were unsalable—there was actually no demand. In early September the market showed signs of life. It began to advance, it continued to advance, until to-day Lima beans are quoted at $6 50 per hundred pounds, and there are few to be had at that price. Even at such a figure all that come in go East, where the consumer pays ten or twelve cents per pound for Lima beans which cost two in Ventura. Other beans went up in the same proportion, and the "bean men," as they are known "on the street," now wear happy and contented smiles, smoke four-bit cigars, and "take a spin" out to the Cliff House after four o'clock every afternoon when the weather is favorable. It cannot be denied that, even if the commission merchants do make their livings out of the result of the labors of the farmer, they are at the same time a necessity to the latter and one that cannot be got along without, for they are at once banker, salesman, purchasing agent, market review and Guide to the Metropolis for every farmer who deals with them. If a farmer who is a "regular shipper" and sends all he produces for sale to one commission house, applies for a loan, he is sure to get it, unless his request is for too large a sum. If he wants a new carpet for his parlor, he sends a diagram and measurement of the room, with some description of the general style and color of the carpet, to his commission merchant, and forthwith he receives it, probably for a little less than he could make the purchase himself. If he has some prospective shipments to make, and wants frequent and correct reports of the state of the market, he forwards his request to the merchant, who sends him quotations as often as desired.

THE GRANGER'S RECEPTION.

If, after the crop is harvested and disposed of, he visits the city for a little recreation, he strays naturally into the store or office of his commission merchant, he is certain to meet with polite treatment, and is at once taken in charge either by a member of the firm or one of the clerks, who is supplied with money to be expended in amusing him. He is taken through the streets and shown the prominent places of interest; he goes through the Park to the beach; to the theatre one evening, through Chinatown another, and perhaps generally sees San Francisco by gaslight on another, if he so elects. Perhaps he is a strict church member. If so, he is never permitted to see the interior of saloon or theatre, or led into any by-paths, unless he shows an unmistakable desire to visit them. In short, he is shown the picture from but one standpoint, always being taken home to dinner by one of the firm, and to church twice on Sunday, and perhaps to Sunday-school also, if he desires. Above all, the closest watch of him is kept, to prevent his falling into the nets spread by the other commission merchants. In certain seasons of the year these pilgrimages to the city are more frequent than at others, and at such times there are firms in the city who detail one man in their employ to entertain their visiting shippers, and they may then be seen with two or three of the grangers in a hack, showing them "the sights." And all these courtesies have a very marked effect upon the farmer. He has received a good price for his shipments, remittances have been promptly made, and he is convinced that the right men are conducting his business. In addition, he is so courteously and handsomely treated during his stay in the city, that he goes home full of the pleasantest recollections of them, and feeling that if it had not been for them, his visit would have been dull and uninteresting. Thinking this, the agents of other houses may plead with him, but vainly, for so long as he finds nothing to complain about, he will never send a single shipment to another firm. Even a positive assurance that by changing he can get better prices, will be regarded by him as a snare set to catch him, or rather, his shipments, and he will no more permit himself to be moved than a rock. Every device is practised to secure his trade, and that of every other farmer and shipper. He is offered the most liberal advances, and in some instances this proffering of coin becomes almost an auction sale of the shipment, the one offering the largest advance securing it. The competition between the commission houses is very great in the effort to secure new shippers, and the result is always beneficial to the farmer, as the house which captures him will do almost anything, save yield up its profits, to hold him. The two are mutually dependent upon each other, and neither will ever be able to get along satisfactorily without the other's assistance.

OUR CEREALS

A careful study of the tables showing the cereal production of the United States, by counties and States, as returned at the census of 1880, and furnished by the Commissioner, reveal much that California may feel proud of and much that may encourage us in the development of the resources of our mighty State. Although among the youngest of the States, and still younger than the date of admission into the federation in the matter of agriculture, the tables show that in the production of wheat and barley we have attained an enviable position. In the matter of barley production California takes the lead—12,579,561 bushels for the year, upon 586,340 acres. New York stands next, producing 7,792,062 bushels, upon 356,629 acres. Then come Wisconsin, 5,043,118 bushels, upon 204,335 acres; Iowa, 4 022,588 bushels, upon 198,861 acres; Minnesota, 2,972,965 bushels, upon 116,020 acres; and Nebraska, 1,744,686, upon 115,201 acres. Louisiana, Wyoming and the District of Columbia produce no barley. The lowest State on the tables is Delaware, where but 19 acres were planted, the yield being 520 bushels. Now, the total yield of barley in the United States was for 1880 44,113,495, grown upon 1,997,717 acres.

ONE-THIRD OF ALL THE BARLEY GROWN.

Referring to the production of California—12,579,561 bushels on 586,340 acres—it will be seen that this State produced nearly one-third of all the barley grown on about one-third of the total acreage employed. This will be a revelation to most Californians, who have been wont to reckon the standing of the State solely on the wheat crop. In the matter of wheat, while California is but the seventh upon the list, with 29,017,707 bushels to her credit, from 1,832,429 acres, it must be remembered that the State competes with such great wheat-growing States as Ohio, Indiana, Illinois and Michigan. The total yield of wheat for all the States was, in bushels, 459,479,505, from 35,480,052 acres. Heading the list of States is the great wheat-producing State, Illinois, which produced 51,110,502 bushels from 3,218,542 acres; then, in order, Indiana, 47,284,853 bushels, from 2,619,695 acres; Ohio, 46,014,869 bushels, from 2,556,134 acres; Michigan, 35,532,543 bushels, from 1,822,749 acres; Minnesota, 34,601,030 bushels, from 3,044,670 acres, and Iowa, 31,154,205 bushels, from 3,074,288 acres. Then follows California. It is instructive to note that, while Michigan and Minnesota produced nearly the same number of bushels, it took 3,044,670 acres of Minnesota land to produce 34,601,030 bushels of wheat, while 35,532,543 bushels were grown upon but 1,822,749 acres of Michigan land.

A LESSON FOR FARMERS.

This is a whole book of sermons to careless farmers. Michigan wheat farmers *cultivate* their ground, while the Minnesota wheat-growers exhaust the soil and farm in a shiftless manner. Then again, Michigan, with 1,822,749 acres, 9,680 acres less than the area employed in California (1,832,429 acres), produces over 6,500,000 bushels more wheat than this State. Analogy would seem to indicate that the same causes which operated to decrease the yield per acre in Minnesota, are at work here. With an equal yield per acre—the Michigan yield being but a fraction below twenty bushels—California should have produced 37,648,580 bushels of wheat. Washington Territory, with but 81,554 acres under wheat, produced 1,921,322 bushels, or a small fraction less than 23½ bushels to the acre. But with the unfavorable showing as compared with Washington, as compared with the average for the whole country—ten bushels to the acre—California is well ahead on the list. Oregon's crop of 7,480,010 bushels, from 445,077 acres, averages a trifle less than eighteen bushels to the acre.

Taking up, now, the lesser cereals, California stands twenty-second on the list of buckwheat-raising States, with but 22,307 bushels grown on 1,012 acres of land. New York, which stands number two in the production of barley and number three in the yield of wheat, takes the lead in buckwheat, growing 4,461,200 bushels on 291,228 acres. Pennsylvania stands next, with 3,693,326 bushels from 246,199 acres, and little New Jersey third, with 446,414 bushels from 35,373 acres. But when we come to compare the yield per acre, we find California produced over 22 bushels of buckwheat, and Washington produced 2,498 bushels off of 106 acres, or 23.5 bushels to the acre. New York, with its immense yield of 4,461,200 bushels off of 291,228 acres, shows a yield of but 10.8 bushels to the acre. California's 22 bushels to the acre compares most favorably with New York's 10¾ bushels. The average yield of all the States per acre was but about 13 bushels. The entire yield was 11,817,327 bushels of buckwheat, produced upon 848,389 acres.

THE YIELD OF INDIAN CORN.

During the year of 1880, 1,754,861,535 bushels of Indian corn was produced in the United States from 62,368,869 acres. Of this amount, California produced 1,993 bushels from 71,781 acres, Oregon 126,862 bushels from 5,646 acres, Washington 39,183 bushels from 2,117 acres. California stands No. 31 on the list. The greatest corn-producing States in their order were: Illinois, 325,792,481 bushels from 9,019,381 acres; Iowa, 275,024,247 bushels from 6,616,144 acres; Missouri, 202,485,723 bushels from 5,588,265 acres; Indiana, 115,482,300 bushels from 3,678,420 acres, and Ohio, 111,877,124 acres from 3,281,923 acres. A most remarkable disparity in the yields of two States is offered in North Carolina and Ohio. The former, with 2,305,419 acres, produced but 28,019,839 bushels of corn; while the latter, with less than 1,000,000 more acres, produced 111,877,124 bushels, or nearly four times as much. In comparison with Ohio, California produced 27 bushels to the acre, to the former's 34 bushels. A curious coincidence is found in the fact that California is the thirty-first State on the list in the production both of corn and oats. During the year 1880, the United States produced 407,858,999 bushels of oats, from 16,144,593 acres. California's production was 1,341,271 bushels off of 49,947 acres. Oregon produced 4,385,650 bushels from 151,624 acres, or about three times our crop, and Washington produced 1,671,706 bushels from 37,962 acres, or 230,435 bushels more than California from 11,985 acres less than were planted in California. The greatest oat producing States

were: Illinois, 63,189,200 bushels from 1,959,889 acres; Iowa, 50,610,591 bushels from 1,507,577 acres; New York, 37,575.506 bushels from 1,261,-171 acres.

In rye production California stands twentieth on the list. The entire product for the year was 19,831,595 bushels from 1,842,303 acres. California produced 181,681 bushels from 20,281 acres. Oregon 13,305 bushels from 841 acres, and Washington Territory 7,124 bushels from 518 acres. In this order come the great rye producing States: Pennsylvania, 3,683,621 bushels from 398,465 acres; Illinois, 3,121,735 bushels from 192,138 acres, and Wisconsin, 2,298,513 bushels from 169,692 acres. The average yield in California for rye was about 9 bushels per acre, while in other States it was as high as 30 bushels.

In the yield of wheat Oregon and Washington Territory were omitted. The former produced 7,480.010 bushels from 445,077 acres, and the latter 1,921,322 bushels from 81,554 acres.

COMPARISON OF COUNTIES.

In the following table will be found the yield by counties of the State, in barley, corn and wheat. As of less importance (on this coast), buckwheat, oats and rye are not included in the tables. The heaviest crops, however, of these grains were grown as follows: Buckwheat—Sacramento, 7,958 bushels, from 264 acres; Alameda, 4,027 bushels, from 228 acres; Sutter, 2,703 bushels, from 119 acres, and Santa Cruz, 2,280 bushels, from 106 acres. Oats—Humboldt, 554,-785 bushels, from 8,817 acres; San Mateo, 132,473 bushels, from 7,376 acres, and Siskiyou, 106,360 bushels, from 3,268 acres. Rye—San Joaquin, 76,438 bushels, from 8,334 acres; Stanislaus, 22,619 bushels, from 4,646 acres, and San Luis Obispo, 20,300 bushels, from 1,023 acres. The staples—barley, corn and wheat—need no comment, the following table being all sufficient to the student of agricultural production

Counties.	BARLEY.		INDIAN CORN.		WHEAT.	
	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.
Alameda	39,075	1,213,820	1,139	37,573	36,022	620,758
Alpine	113	3,410	8	235	179	2,936
Amador	3,291	101,054	1,191	40,695	2,386	43,323
Butte	23,283	516,474	1,225	31,210	127,189	2,244,770
Calaveras	1,926	47,294	206	7,295	807	16,256
Colusa	39,939	899,558	861	15,735	261,381	4,537,504
Contra Costa	19,674	501,880	55	1,360	71,870	1,267,016
Del Norte	54	1,530	42	1,710	56	995
El Dorado	1,137	22,911	13	414	1,360	20,777
Fresno	9,504	118,527	414	10,053	21,474	190,923
Humboldt	2,429	94,848	624	16,313	3,437	84,533
Inyo	1,686	35,845	1,682	33,213	1,525	30,004
Kern	6,151	119,571	1,694	35,046	6,887	85,682
Lake	4,551	124,300	755	19,277	8,296	173,842
Lassen	1,950	37,073	15	330	4,773	75,361
Los Angeles	33,823	405,708	23,771	752,104	29,349	316,043
Marin	1,499	37,554			2,603	55,520
Mariposa	1,314	26,239	30	720	337	4,476
Mendocino	3,544	101,829	884	20,526	8,899	166,666
Merced	10,181	88,036	574	15,715	67,975	296,308
Modoc	3,956	91,325	18	440	4,301	78,335
Mono	295	3,925			11	200
Monterey	35,426	825,550	488	14,978	69,022	779,285
Napa	5,753	130,844	1,664	41,722	33,653	611,445
Nevada	543	10,632	32	665	804	3,235
Placer	5,594	68,275	160	4,879	11,751	183,547
Plumas	16	535			1,129	21,217
Sacramento	30,547	650,448	8,928	149,550	44,123	804,631
San Benito	10,469	192,462	299	6,720	32,223	637,271
San Bernardino	4,076	82,563	774	23,136	2,558	45,583
San Diego	3,573	45,330	440	8,017	8,929	60,650
San Francisco	349	3,500				
San Joaquin	32,669	796,409	2,333	68,890	201,461	3,529,511
San Luis Obispo	9,658	205,869	488	13,503	10,618	173,531
San Mateo	16,705	349,644	118	1,330	10,787	219,084
Santa Barbara	13,598	245,667	3,187	123,795	18,492	265,955
Santa Clara	29,613	716,860	261	10,391	38,623	648,055
Santa Cruz	5,945	176,204	1,768	43,873	12,060	291,049
Shasta	6,762	87,303	59	1,590	6,267	99,610
Sierra	391	1,172			308	689
Siskiyou	3,598	114,013	112	8,015	6,330	98,370
Solano	32,222	571,493	443	16,685	107,588	2,043,633
Sonoma	11,116	372,007	5,961	158,829	39,820	742,123
Stanislaus	19,559	312,882	378	13,655	172,445	1,642,892
Sutter	14,830	365,086	1,596	28,935	74,338	1,205,883
Tehama	14,967	361,838	24	750	84,254	1,386,228
Trinity	14	220	30	980	1,071	14,185
Tulare	3,661	69,200	2,536	46,255	28,131	371,081
Tuolumne	2,558	41,018	24	373	4,055	62,824
Ventura	23,171	551,289	9,121	148,425	8,479	113,497
Yolo	18,320	519,479	714	10,090	115,369	2,086,559
Yuba	11,057	218,458	603	12,220	28,134	359,967
The State	586,340	12,579,561	71,781	1,993,325	1,832,429	29,017,707

QUARTZ MINING IN NEVADA COUNTY.

By A. BURROWS.

The western slope of the Sierras, extending for a distance of some sixty miles north of the line of the Central Pacific Railroad, and in width from fifteen to twenty miles, constitutes an auriferous belt that ever since earliest times has maintained a high reputation for the richness and permanency of its gold-bearing quartz lodes. In some of these localities, as for instance in the Meadow Lake and Iron Mountain districts, the rock, though assaying hundreds of dollars per ton, has never proved of any value, because of its being so-called "rebellious ore;" that is to say, ore that refuses to surrender its gold to any ordinary milling or chlorinating process. Science and capital combined will, no doubt, provide a remedy for this obstacle. So far, however, they have simply done nothing. Some of this belt is so high up that prospecting during the Winter months is impracticable, but throughout the greater part, the most delightful climate prevails. Grass Valley, which is the chief centre of quartz mining, rarely receives snow enough to remain throughout a single day, and stands in what is, perhaps, the finest orchard country in the State. An abundance of schools and churches everywhere abound in the most thickly settled portions of this mining belt. The average intelligence is high. It is almost impossible to find a home or a miner's cabin where daily or weekly newspapers are not part of the regular "supplies." With the exception of an occasional stage robbery and shooting scrape, few acts of violence are recorded. Bret Hart's ideal miner, so far as sense of humor, pity and chivalrous deportment toward women is concerned, is true to life of the miner of to-day. In its grosser characteristics it is, however, grotesquely *unreal*. Quite a large proportion of the inhabitants, perhaps one-third, are of foreign birth. Nearly all are, however,

PRETTY THOROUGHLY AMERICANIZED,

Having spent many years in the country. Nevada County contains the most important portions of this mining region. Its northern half, however, is mostly devoted to hydraulic and drift mining. The historic mines known as Eureka, Idaho, Allison Ranch, Rocky Bar, North Star, and many others, are all within two miles of Grass Valley, a town of some 7,000 inhabitants, standing on the line of the narrow-gauge railroad that connects with the C. P. R. R. at Colfax. Strangely enough, all these famous mines stand on the bank of a small stream called Wolf Creek. This rivulet literally "wanders o'er sands of gold" for several miles. Copper, iron and limestone are found in paying quantities on the borders of the Bear River, but this is what is called the "iron belt." The iron ore consists of red and brown, hemitite and magnetic. It, in some localities, yields about 65 per cent metal. So far little has been done with these ores. A copper mine, employing some thirty hands, is in operation at Spenceville, while extensive works for the production of iron have been just completed at Clipper Gap. There are also several unprospected mines of chrome. There have not been a half a dozen of any sort of mineral claims recorded in Nevada County outside of gold mines. This last interest overshadows all others. One reason of this is because it can be started without capital. Quartz mills are plentiful, while furnaces can only be erected at large expense. For all this, the immense iron deposits of Nevada and Placer counties will some day be esteemed at their true value. Gold mining has many fascinations, and is no doubt a precarious pursuit. In the section we are now describing, while few fortunes are now made, a very large percentage of the population make a good living, even out of their mining claims. Down to about 100 feet these claims can be worked without any more machinery than a windlass.

THE LEDGES

Are from ten inches to ten feet thick, and carry from five to fifty dollars per ton in gold. So soon as the miner takes out fifty or a hundred tons, he has it hauled to the next mill, and in a few days receives his gold, less cost of milling. There are hundreds of prospect mines that pay $3 per day and over to each miner. Partnerships in working a claim are common, and working "on tribute," or shares, is getting more common every day. Many mine-owners put up hoisting and pumping machinery, and then let the mine to be worked on tribute. The average of any ledge of quartz seldom has pay in it throughout. A small streak constitutes the "pay rock." To discover this pay chute, and to follow it up throughout the ledge, is about the most important part of gold mining. Those who work for wages in the large mines obtain $3 per day for underground work with pick and drill, and fifty cents less for common work. Heretofore underground work was almost entirely performed by foreigners, but since the introduction of dynamite powders, Americans have, in many cases, taken their place. Dynamite has revolutionized mining in this respect. The Chinese have not, as yet, introduced themselves to this pursuit. In this respect quartz and placer mining differ. There are not over eight per cent of the inhabitants of the quartz region Mongolians. There are about 2,000 quartz mining claims worked in Nevada County. Of these, Grass Valley District has over one-half. New claims are being located every day, and old ones abandoned. Any citizen on finding a ledge, or an abandoned claim, can go to work and post a notice of location, claiming a piece of ground in which his ledge exists, 1,500 feet long by 600 feet wide. He must plant his corner-stakes and describe his claim so that its boundaries can be easily traced. A copy of his notice must be recorded in the County Recorder's office. To retain his claim he must do one hundred dol-

lars' worth of work each year. If he fails to do this his claim is liable to be jumped by some other person. He must also obey "local customs of miners" in force as to the time when his work shall begin, etc. As a rule, these local rules now are

A MYTH.

Outside of observing the Congressional law, each miner "does that which seems right in his own eyes." Of course, when a custom ceases to be generally observed, it ceases to have any force whatever, and is no longer a law. Many claims are located and held to await a purchaser with capital. When a sale is made, the price paid is generally clear profit. Few claims are sold for less than from $10,000 to $20,000. Most of them could be obtained for much less; but sales are mostly made by middlemen, who sell at high figures, because of percentage. Capitalists make a great mistake in not purchasing directly from the owners, and, in addition, run far less risk of purchasing a "salted claim."

Within a reasonable distance from the railroad, living and merchandise cost but little more than they do in Sacramento. House rent is moderately high. A cottage with four or five rooms rents for about $10 per month. Board is worth from $20 to $30 per month. There are everywhere numerous vegetable and fruit gardens. Fresh meat can always be obtained, even at the remotest camps, except in a few places up towards the summit, where snow often reigns supreme. The law does not require that those who locate mining claims shall either fence in or reside on their claims. Hence, many locators reside in the towns and villages, miles away from their locations. Nor does it place any limit as to the number of claims that may be held by any one man or company, provided, that on each claim, the annual expenditure of $100 is faithfully made. If the boundaries are properly marked out, the locators' rights to exclusive possession and enjoyment extend, not only to the ledge discovered at the time of the location, but to all ledges whose top or apex exists inside of his location lines. Before 1872, the Mining laws did not permit of this advantage. Since that date, however, section 2322 of the Revised Statutes of the United States expressly guarantees this right to the locator. In a region so intersected with

A NETWORK OF LEDGES

As that which we are describing, the importance of this law can hardly be overrated. In a space 1,500 feet long by 600 wide there are frequently several ledges, any of which may prove valuable. One and a half month's labor is generally admitted to be equivalent to one hundred dollars' worth of work. After performing this the locator, if he desires it, can generally obtain employment for the balance of the year working for others, or he can file a preemption or homestead claim on some tract of land a few miles away, and, after erecting a house or cabin, devote his time jointly to both mining and agriculture. Some fine vineyard and orchard land is yet open to the public in the southern parts of Nevada County, within twelve miles of Grass Valley. Good common sense and industrious habits are of as much importance to the mining prospector as mining experience. As old miners say, "no one can tell what is under the ground until he sees it." No man can earn $3 per day wages at mining who has not had lots of experience with mining tools; but, so far as prospecting is concerned, more depends upon "good luck" than on good guidance. It requires but a short experience to learn enough about gold-bearing quartz in order to work a mining claim. Free gold is not difficult to discern with the naked eye. Of course there are valuable claims that contain little or no free gold, but they require much capital to even test their value. When we come to working a quartz mine on a large scale, with all suitable machinery, skill and experience count largely in favor of success. This is a fact that foreign capitalists, to their great loss, continually lose sight of. We know a score of cases where good prospect mines, after the expenditure of thousands of dollars, have been botched and ruined by the incompetency of their managing agents and superintendents. In many cases men have been put in charge of such mines who never before saw a gold mine. All their operations were marked by incapacity, and after

WASTING ENORMOUS SUMS,

Their mines were abandoned or sold under the hammer. Capitalists and stockholders should always require that none but thoroughly experienced and intelligent gold miners should have charge of their works; that the development of their mines should be conducted with fair economy, and that all unnecessary displays should be suppressed. If carried on after this manner, there are scores of claims to-day obtainable direct from the owners, at a *fair price*, that will in all probability pay very large dividends. Not even a rich gold mine, however, will stand unbounded extravagance or incompetent management.

The statistics for 1880 give the following figures in relation to Nevada County:

Value of real estate	$6,925,000
Value of mining claims	2,353,640
Number of fruit trees	50,377
Population	20,534
Number of Chinese	2,300
Number of quartz mills	58
Containing stamps	578

Among these mills may be reckoned several appliances for the reduction of sulphurets by concentration, chlorination and other processes. There can be little doubt but that in a short time there will be introduced a practical plan for the working of rebellious ores—an event that will add not less than one-third to the value of quartz mines in this and the adjoining counties.

Of recent years considerable interest has been manifest in the culture of the grape throughout the southern portion of this auriferous belt, the red warm hillside soil having been found admirably adapted to some varieties. It is not an unusual thing to find valuable mining operations going on right under fine orchards and vineyards. The mountain fruits produced in this part of the State are highly esteemed, and bring the highest prices in San Francisco market.

A. BURROWS.

THE CLIMATE OF CALIFORNIA.

There are famous health resorts in every part of the world, and people in delicate health go, for the sake of the benefit to be derived, to little and crowded towns in France, where the drainage is bad, where it is excessively warm in Summer, and where, in Winter, it is very cold, snow upon the ground and prolonged rains prevailing. In the towns of Italy, also, there are fierce winds and snow in Winter, with enervating heats and unhealthy surroundings in Summer, the death rate, even among the natives, being surprisingly high. In Spain, perhaps, is the best climate in Europe for the invalid, and yet there, too, the extremes are great, and many times the invalid is reduced to bad accommodations in a dull town of the worst sanitary conditions. Northern Africa, which has also its health resorts, is of a variable climate, damp in the wet season, with scorching winds from the desert, and, as a rule, the Europeans who settle there are not long lived, and their families soon become extinct. Island climates are often highly extolled, and Australia is specially recommended, and yet there, while the Summers are debilitating from the proximity of an equatorial current, the Winters are damp and made extremely cold by the south winds from the Antarctic regions, and the changes are most sudden, the barometer often falling a degree a minute during half an hour or more. All island climates are more or less damp, and not at all favorable to throat and lung or rheumatic affections, those which know a sufficient degree of heat passing the medium required and becoming in Summer decidedly enervating. The Canaries, and other islands, much visited by invalids, have not an equable climate, but are swept by the fierce African winds. The Sandwich Islands, which are so much resorted to from this coast, are said to have a perfect island climate, and there is not, indeed, a great number or degrees difference between the average Summer and Winter weather; but the sameness is the sameness of a hot climate, and is found debilitating and not healthful to Europeans or Americans. The town of Honolulu, which is the only spot on the islands prepared for the reception of visitors, is not a healthful one, and is periodically swept by epidemics.

These foreign places just mentioned have the additional disadvantage of offering no inducement to Americans to settle permanently, being at best but refuges where an invalid may stay a few weeks, feeling, during all of his stay greatly at a disadvantage on account of the strange customs around him, the unusual food, the different government, and the unaccustomed language.

RESORTS FOR INVALIDS.

In America, invalids resort principally for health to Florida, Texas, Minnesota and to California. Of these, the Summers in Florida are hot and dangerous, being debilitating, and, for several years at least, bring chills and fevers to the stranger. Texas, also, in addition to her cold weathers and fierce wind-storms, has hot Summers, dangerous to the invalid, while Minnesota, on the other hand, knows an extreme cold, the temperature remaining often in Winter below zero.

In Florida, in almost every portion of the State, chills and fever follow exposure, and the soil is too poor to allow the small farmer to settle and to become prosperous, while his health is improving. The writer says, of a man who should make such an attempt, that "he would require at least ten dollars' worth of quinine for each of the first two years." This same writer, I believe, who has farmed in Florida, says that he easily raised sweet potatoes, cow peas, sorghum and watermelons, but that beets, parsnips, peas, radishes, beans, cucumbers, squashes, tomatoes and other products, refused to appear. This report should be compared with the showing of our southern region, where not only do the same tropical fruits, as oranges, lemons, citrons, olives, etc., grow, but the temperate fruits, grains and vegetables, flourish at even an astonishing rate, as to size and yield.

The following partial table, taken from the *Semi-Tropic Californian*, and true for the whole State, will perhaps convey an idea of the growth of fruits here: Currants are in season from May to July; plums, from June to November; cherries, in June; raspberries and blackberries, from June to September; gooseberries, in June; watermelons, from July to November; muskmelons, ditto; peaches and apricots, from June to Christmas; apples, from July to Christmas; grapes, July 15th to December; new raisins, on October 20th; oranges, from Christmas to July; lemons, limes, guavas, strawberries and almost every vegetable, all of the year.

CLIMATIC PECULIARITIES.

California alone has a climate which is certainly and in every way suited to those who must search for a spot in which to find health and a long life. Over every part of California (unless in the most extreme regions north and south,) are worn thin woollen clothing all the year around, with blankets at night. During every day is a gentle breeze from the sea, and one from the mountains every night, tempering each season in turn, and preventing snow in Winter and sunstrokes in Summer. The seasons are only two, the wet and the dry, and the wet or Winter season can best be compared with one of the pleasantest of the Eastern Springs, as it is our season of green grass, wild flowers, budding trees, and mild, delightful, out-of-doors weather. This is specially true of the central and southern parts of California. In the mountains and to the extreme north of the State, snow is on the ground in Winter, and there is a more marked difference between that season and Spring; but the mountain air is not less favorably known than that of the more central and southern parts of the State, and is resorted to, even in Winter, by some classes of persons who are seeking to regain their health. And in by far the greater part of the State, in all the counties bordering on the bay, in the great Sacramento and San Joaquin Valleys, and to the south, no snow falls in Winter, and no frost is seen at any season when the sun is two hours high. We have a tradition which points, indeed, to the vicinity of Los Angeles, the City of the Angels, as the site of the very Paradise, and the graves are actually shown of Adam and Eve.

father and mother of men, and (through some error, doubtless, since it is disputed that he died) of the serpent also. And this tradition is hardly less modest in its claims for that portion of our State than are the claims of its citizens, many of the farmers having gone there invalided, and found what they sought, a renewed life, with robust health in the interval. And it is not disputed that Southern California has during all the year a climate which Nice and other sanitaria have only through three or four months. It is true that in Midsummer in Southern California, and in the interior valleys, pretty hot weather is known, and yet it is not weather which prostrates, and laborers have worked in the sun at a temperature of 80 deg. without injury. We have not, indeed, in any part of the State either sunstrokes, hydrophobia or lightning. The air is dry, not humid, and there are very few cloudy or sultry days. The nights are always cool, and lassitude, therefore, is not felt in the heat of Summer, and the balmy, kindly air is the best in the world for consumptives and those with bronchial troubles. The health resorts of the South Atlantic Coast are in South Carolina, notably Aiken, and in Florida, but California has a stimulating atmosphere, commonly called "glorious," which is invigorating and tonic; like in its effects, besides, being drier and more specially suited to soothing and healing in cases of throat and lung troubles, than is the case in the Atlantic Coast resorts.

COMPARATIVE LATITUDES.

Our skies have been compared to those of Spain, Italy, Greece and Palestine, and our State is commonly called the "Italy of America," and is physically situated very like that peninsula, extending through nine degrees of latitude, but Italy is five degrees further north. The northern part of our State is in the same latitude as Chicago, Providence, Rome and Constantinople, while the southern part corresponds with the latitude of Charleston, Gibraltar, Jerusalem and Shanghai. Our sea breeze from the southwest is the most characteristic feature of our climate, particularly in Summer, and is the great modifying agent of both seasons. But although one writer says that we have the Winter of South Carolina and the Summer of Rhode Island, our climate may not, in fact, be in any degree compared with that of the Eastern States, being so much warmer in Winter and cooler in Summer, especially at night; having its rainfall confined to the Winter season, and the atmosphere being much drier, with no violent atmospheric disturbances—wind, thunder, hail, etc. A London writer claims for our climate that it is that of "Greece made cooler, and one of the two perfect climates of the world;" while an Eastern writer declares that it is "exhilarating, like champagne, or as having a subtle presence of iron, making more labor possible." We never have more than three hot days at a time, 80 degrees calling for the wondering comments of the local papers, and the mean temperature of an average Spring, Summer, Autumn and Winter in California is put respectively at 54, 57, 56 and 50 deg. In New York, the difference between the Summer and Winter temperature is 39 deg.

THEEMOMETRICAL OBSERVATIONS.

During last Summer, the hottest day in the vicinity of the bay registered 97 deg., and the coldest day last year had 35 deg. of heat. During August, 1881, in San Francisco, which is in the same latitude with St. Louis, Washington, Seville and Palermo, there were fifteen clear, nine fair, and seven foggy days. The highest temperature (on the 10th) was 70 deg.; and the lowest (on the 3d, 15th, 22d, 23d and 29th) was 52 deg.; the monthly range being 18 deg. The greatest daily range (on the 10th) was 17 deg., and the least (on the 24th) was 7 deg. The highest daily average was 60 deg., the lowest was 55 deg. The general winds were from the west, varied with southwesterly winds. There was no rainfall, but the fogs supplied all necessary humidity. (Vide official report.) In Chicago and New York, during the Summer, as many die in one day as in San Francisco in a week, and in those cities three-fourths of the deaths are directly traceable to the great heat, while not one death from that cause occurs in San Francisco. Certainly no great city on the continent can make the same showing as to Summer healthfulness and Winter mildness. All this Summer it has been at 90 deg. and 100 deg. east and 65 deg. and less here, while we never have more than half a dozen days in Summer when the mercury stands higher than at 75 deg. And in Winter (the Pacific being not inconstant in its kindness), while the Eastern States are buried beneath a weight of snow, in San Francisco no frost can be found upon the ground after sunrise. The mean annual temperature in San Francisco is 55 deg., in San Diego it is 62 deg., at Red Bluff it is 66 deg., at Marysville it is 63 deg., at Sacramento it is 60 deg., at Stockton it is 61 deg., at Merced it is 63 deg., at Tulare it is 64 deg., at Sumner it is 63 deg. The mean Summer temperature at Monterey is 59 deg., at San Diego it is 69 deg., at Visalia it is 80 deg., and at Fort Yuma it is 92 deg. These are all points in different parts of the State.

SAN FRANCISCO.

In San Francisco, there is less wind and fog in Winter than in Summer, making the former season oftenest the pleasantest in the city, for the sole objectionable features of the town climate are the wind and the fog, and considering that these preserve the healthful temperature, and make impossible the peculiar climatic characteristics of other places, they should not be carped at. San Francisco has a January mean of 49 deg., as has also Stockton. This is three degrees warmer than Naples, four degrees warmer than Sacramento, twelve degrees warmer than London and eighteen degrees warmer than New York. The July mean in San Francisco is 57 deg., which is one degree cooler than at Monterey, fourteen degrees cooler than at Santa Barbara, sixteen degrees cooler than at Sacramento, nineteen degrees cooler than at Naples, and twenty degrees cooler than at New York and St. Helena. The difference between the mean temperature of July and January is nine degrees greater at Santa Barbara, twenty degrees greater at Sacramento, twenty-two degrees greater at Naples, and thirty-four degrees greater in New York than in San Francisco. The San Francisco yearly mean is 54 deg.; that of London is 49 deg., that of New York is 51 deg., that of the City of Mexico is 60 deg., as is also that of Naples, while that of Jerusalem is 62 deg., that of Canton 69 deg., and that of Honolulu 75, Honolulu being 14 deg. warmer in its coldest month than San Francisco is in July.

THE INTERIOR.

In the interior of the State, as in the Sacramento basin, there are generally and on an average 220 perfectly clear days, 78 cloudy days wherein the sun is visible, and 60 rainy days in the year. Neither Spain nor Italy can surpass this. New York has scarcely half so many clear days; but, in California, there are weeks in Winter, and months in Summer, during which a cloud is not seen. The whole rainfall is confined to the Winter months, together with a part of the last month of Autumn and the two first months of Spring, some five months altogether. San Francisco has an average yearly rainfall of 23 inches; San Diego has 10 inches, Sacramento 21, Paris 22, Rome 30, Liverpool 34, New York 43, Portland (Me.) 45, and New Orleans 50. We have, therefore, about half as much as have the Eastern

States, and about the same as has Paris; and in the East about as much falls during the Summer and Autumn as we have during the Winter and Spring. However, this is true of San Francisco and the bay counties, while the rainfall, as do the heat in Summer and the cold in Winter, increases as one goes into the interior of the State. Our Winters are not by any means considered perfect, and our farmers find a great deal of fault, declaring that they count on having three poor or bad years in every ten. It has also been said that every other year, on an average, brings either a flood or a drouth, and that more than thirty inches of rain at Sacramento, or less than sixteen inches, means either the one or the other. However, no crops are spoiled by rain in Summer, thunder is rare except high in the mountains, and there is no hail except a brief and occasional storm in Winter. The average rainfall of Sacramento during thirty years is twenty-two inches, and this is generally quoted as a rough estimate covering the whole State. A table of rainfall for the whole State, the additional fractions of inches not being given, is as follows: Fort Mojave, 2 inches; Fort Yuma, 3; Tulare, 4; Soledad, 8; Hollister, 9; San Jose, 10; Stockton, 13; Monterey, 15; San Mateo, 15; Tehama, 16; Gilroy, 16; Marysville, 17; Sacramento, 18; Chico, 21; Auburn, 29; Fort Redding, 29; Colfax, 42; Summit, 58.

DEATH RATE.

The death rate of California is at present a deceptive document, the State being, as it is, the sanitarium of all nations. Besides the fact of the inevitable deaths among the transient, invalided portion of the population, it is also true that California is at present peopled with a race, born elsewhere, that has here lived (in the youth of the State) an unaccustomed life in a new country. It is not strange that so many of our pioneers, after the almost unexampled toils and excitements of their lives, have died "in their fifties." We must look at the native Californian race, so called, if we would judge of the effects on her people of the climate; and we find the long-lived native Californians, men and women, parents of families, ranging as high as fifteen in number, and themselves living very often to be one hundred. A large number of these families, living in the bay counties, averaged eleven children each, and one old woman, when she died, had five hundred descendants living. During a period of sixty-five years, a record kept at the time of the Santa Barbara Mission, shows almost three hundred marriages, very nearly two thousand births, and less than five hundred deaths. It is when we shall have a new native race in California that we shall be able to rightly judge of the climatic effects of the State, and already is the health and beauty of women and children here, especially in the southern part of the State, remarked upon, while the new generation of babies here is a somewhat broader and rosier showing of infants, a different type of child from that prevalent in the Eastern States, all of which goes far to promise that we shall see in the near future in California a new race of men, sprung from Americans living in the climate and under the same conditions known by the centenarians of the days of the Missions.

SUMMER RESORTS.

And these missions had invalids flocking to them in those days, for the padres knew well the healing powers of the mineral springs so common through the State, and Paso de Robles and other of our fashionable resorts have assisted at miracles in the days of those things in California. These springs are extremely valuable to the invalid within our borders, and their presence in Europe determine the sites of most of the famous health resorts. Vichy has 20,000 annual visitors, and bottles and sends away annually 600,000 gallons of the water. Of a list of twelve European springs, 5,000 is the lowest number of annual visitors and 600,000 bottles the least quantity of water sent way. When it is known that we have springs whose waters closely resemble those of Vichy and others of the famed European resorts, it will be understood how valuable they are to the class who are looking for health, and how valuable they are likely to become as a source of revenue, through the numbers resorting to them, to the State. Thus its climate and scenery, as well as its mineral waters, may fairly be classed among the resources of the State. Health and recreation are sought for (and commonly found) at one and the same time, and California, besides its half-dozen world-known wonders, as the Big Trees, Geysers and Yosemite, has an unlimited number, north and south, of spots visited every year by the tourist and the invalid. And still more her nooks and corners would be resorted to, were their claims to merit more widely known. The high mountain towns, with their hydraulic quartz mines, have a delightfully pure and stimulating atmosphere, grateful to asthmatics, particularly, besides being in the near vicinity of trout and large game, and are much visited in Summer. In Shasta County is the United States hatching establishment, on the McCloud River, besides Soda Springs, the finest trout streams and impressing scenery. Going north from San Francisco, are the well-known and much-visited Sausalito, San Rafael, Mt. Tamalpais, Tomales Bay, Paper Mill Creek, Duncan's Mills and Russian River; also, Santa Rosa, Mark West Springs, Litton's Springs (Skaggs'), and the Geysers. There is the Napa Valley, and both Napa and Sonoma, and also Santa Clara Valley, are favorably known on account of their freedom from fogs and from stormy salt winds, which are yet strong enough to make equable the climate; also St. Helena, Calistoga, Kellog, Napa Soda Springs, Nook Farm Sulphur Spring, Ætna Springs, Sulphur Springs Ranch, Petrified Forest (which is a fallen forest, the petrified trunks lying upon the ground, as the name might not indicate), Highland Springs, Anderson's Springs, Harbin Springs, Glenbrook, Adam's Springs, Seigler Springs, Howard Springs, Soda Bay (or Clear Lake), Sulphur Bank, Borax Lake and Bartlett Springs. Lake County is frequented more every year, the weather being sometimes warm, but never sultry. Two thousand people visit its resorts during one season, and as many as five thousand camp in its mountains or in the lake vicinity. Nearer the bay are Mt. Diablo, in Contra Costa County, and Piedmont Springs and the salt water baths at Alameda, besides innumerable sulphur springs through the different counties, with the Lakes Donner, Webber, etc.

LAKE TAHOE.

At Lake Tahoe, in Placer County, and thirteen hours from Sacramento by rail, which is visited by the tourist, attracted by the wonders of the scenery oftener than the invalid, is a pure mountain air, with a most charming Summer climate, there being no excessive heat, and only an occasional and enjoyable thunder-storm. Here, besides the lake and the streams, are the waters of mountain springs and hot and cold mineral springs. There is trout fishing in the streams as well as in the lake, where a number of fish are taken—trout of several kinds, from a quarter of a pound to five pounds in weight, minnows, white fish, and several other sorts. Several of the beaches or bays of the lake are of interest, as Emerald and Carnelian bays, carnelian stones being picked up that are very pretty. The lake is more than 6,000 feet above the level of the sea, and is twenty-two by twelve miles in size. Its greatest measured depth is

something over 1,500 feet, and this great depth makes the principal wonder of the lake. The water is fresh, varying from thirty-nine to sixty degrees in temperature, and the extreme cold of the depth, which prevents drowned bodies from decomposing and rising to the surface, has given rise to the erroneous belief that the water is not buoyant, and will not float any object.

YOSEMITE VALLEY.

The far-famed Yosemite is one hundred and forty miles east of San Francisco, and is a cañon a mile wide and eight miles long. The bottom of the valley is more than 4,000 feet above sea level, and the walls rise as high as 4,600 feet. Its principal waterfall (though not the only one, nor the most beautiful), has 2,600 feet to fall. Great cliffs, rising 3,000 feet high, and gigantic, dome-shaped mountains, are gathered in this narrow valley, which are supposed to have been formed suddenly one day by a fissure, or crack, in the solid mountain chain. The valley scenery is of great beauty, and the Summer climate is cool, with snow in Winter. People camping in tents have an enclosure in Yosemite set apart for them, and may also locate themselves in other parts of the valley, always under the stated regulations, which provide that firewood may be picked up, but never cut down; that fires must not be left burning; that fish may be taken with hook and line only, and that birds must not be killed. In the valley are three hotels, three stores, four livery stables, a blacksmith, a cabinetmaker, four photographers, a saloon, a bathing house, three carpenters and four laundries.

THE BIG TREES.

The Big Trees of Mariposa, only one of several interesting groups in the state, are sixteen miles from Yosemite. The tallest tree in this grove is 325 feet high, and the thickest is 27 feet through. The age of the oldest one, which has been counted by rings, is 1,300 years old, its seed having taken root in this California valley in the sixth century after Christ, when the world's history (so-called) was confined to that narrow strip of land along the Mediterranean Sea, with the barbarous nations on its borders. These trees are of the Sequoia Gigantea, and only the Eucalyptus Amygdalena of Australia ever grows so large.

MINERAL SPRINGS.

South from San Francisco are the well-known suburbs and resorts, San Mateo, Crystal Springs, San Gregoria Creek (with its fishing), and Pescadero, on the coast, with its pebble beach and bathing, hunting and fishing. Beyond is Santa Cruz, the finest watering-place of California, with the hunting and camping-grounds of the Santa Cruz Mountains, and the Magnetic Springs, Wright's and others, the Summer climate here being most delightful, and particularly suited to the Californian custom of camping out, in parties, during weeks at a time, in tents. At Santa Cruz, during three years, the highest temperature has been 88 deg., the lowest 31 deg., with the water from 58 deg. to 62 deg. South of San Francisco, also, are San Jose, Blackberry Farm, Congress Springs, Los Gatos, Almaden Quicksilver Mines, Alum Rock, Mount Hamilton (of the Lick Observatory), Gilroy, the Pajaro Valley and Monterey, the Bay of Monterey extending in a curve to Santa Cruz, with a beach and various camping-grounds and hotels between, as at Aptos and Soquel. Down the coast, also, are Salinas (salt) Valley, Paraiso Springs, Paso de Robles Springs, San Luis Obispo and Santa Barbara (usually reached by steamers), with Los Angeles, Santa Monica and Anaheim, San Gabriel and Santa Ana Valleys, and Riverside. Also are San Bernardino Valley, Cratton, Arrowhead Springs, Waterman's Hot Springs and San Diego. Of these, Riverside has a dry and bracing air, always dry, warm and equable. San Bernardino is superior in climate to most of the famous resorts, neither Nice, Mentone nor Aiken comparing with it. In Santa Barbara and San Diego, also, the Winters are specially mild and equable. In Los Angeles the January days are warm and genial, although there is a chilliness after sunset, which is not well for throat complaints.

At Santa Barbara, in Winter, the mercury is rarely below 45 deg., and this is one of the best places in the world for consumptives. There are very few cloudy or gloomy days in the southern counties, and very little rain; and it is even claimed for that locality that the occasional morning fog is not damp, but is dry and warm. In Santa Barbara, a few years ago, a storm having blown away the sand, a warm sulphur spring was discovered on the beach, near the bath house. San Diego, Santa Barbara, San Bernardino, Stockton, Visalia and Riverside, all have climates particularly beneficial to sufferers from the throat and lung complaints; and practical observations during a series of years went far toward showing that Stockton has a climate wonderfully like to that of Naples.

COMPARATIVE WINTERS' TEMPERATURE.

The following comparative tables will doubtless be valuable to those who weigh carefully the choice of a Winter residence:

Clarens, Switzerland, average temperature: In November, 51 deg.; in December, 42 deg.; in January, 45 deg.; in February, 41 deg.

San Bernardino, average temperature: In November, 64 deg.; in December, 61 deg.; in January, 58 deg.; in February, 62 deg.

Aiken, South Carolina, average temperature, in December, 45 deg.; in January, 55 deg.; in February, 57 deg.; and with strong prevailing winds, rain, snow, and a high number of cloudy days. In Anaheim, Cal., during these three months there is a light wind, with sunshine all day, and the July average only 72 deg. Santa Barbara, which is a good representative of the Southern climate, has average in April, 60 deg.; May, 62 deg.; June, 65 deg.; July, 71 deg.; August, 72 deg.; September, 68 deg.; October, 65 deg.; November, 61 deg.; December, 52 deg.; January, 54 deg.; February, 53 deg.; March, 58 deg. Coldest day in April, 60 deg.; May, 66 deg.; June, 69 deg.; July, 76 deg.; August, 77 deg.; September, 66 deg.; October, 60 deg.; November, 64 deg.; December, 52 deg.; January, 56 deg.; February, 42 deg.; March, 56 deg. Warmest day in April, 74 deg.; May, 77 deg.; June, 80 deg.; July, 84 deg.; August, 86 deg.; September, 90 deg.; October, 92 deg.; November, 87 deg.; December, 71 deg.; January, 76 deg.; February, 71 deg.; March, 83 deg. The average for the year being 60 deg.; the coldest day having 42 deg.; the warmest having 92 deg., and the variation being 50 deg.

The dry, interior valleys, with no fogs, are very favorable for consumptives. Some of the low valleys in the southern part of the State were not free from the dread malaria of chills and fever, but as the soil has been drained and turned to the sun, this condition has disappeared. It has also been discovered that there is no malaria where the eucalyptus is planted, as that tree absorbs an enormous amount of water from the soil and exhaled it on the air. The daily evaporation of water is equal to four times the weight of the leaves on the tree. Stagnant water is thus soon distilled and exhaled in a pure condition. There is also an essential oil in the leaf which acts as an active disinfectant. But the presence of valuable mineral waters determines chiefly the principal points suitable to be visited by the invalid. Only a few of our springs are well known, but of these the Sanel spring has been called the "California Seltzer;" the Saratoga

the "Pacific Congress," and the New Almaden the "California Vichy."

ÆTNA SPRINGS.

The Ætna Hot Springs have a water closely resembling that of Ems, in Europe, which is so highly prized for the cure of bronchial and catarrhal troubles. The Ætna water, however, has the advantage in having none of the acrid sulphate of potash found at Ems, and has a small proportion of sulphate of soda, lacking at Ems.

Contents in a gal., in grains, at Ems.	At Ætna
Carbonate of soda..... 81	75
Carbonate of magnesia..... 7	14
Carbonate of lime..... 10	10
Carbonate of iron.....trace.	—
Sulphate of soda.....trace.	8
Sulphate of potash..... 3	—
Chloride of sodium..... 62	29
Silica..... 3	trace.
Total solids.....170	137
Carbonic acid, cubic inches..... 59	58
Temperature, Fahrenheit.....115°	98°

The carbonates of soda and magnesia in the Ætna Springs are double, or bicarbonates. The excess of chloride of sodium (common salt) in the Ems water is not an advantage, the Vichy and Fachingen, the two other best springs of the kind in the world, having about the same amount of this substance as the Ætna. These springs are known as alkaline waters, and Ætna, which has been used for thirty years, is equal to the best of the class in either hemisphere. Heart, spinal and liver diseases and dyspepsia, jaundice, paralysis, erysipelas, etc., have been cured at Ætna.

PASO ROBLES.

The Paso de Robles (the pass of the oaks) Hot Springs are hot, cold and mud, being renowned for the cure of rheumatism and cutaneous diseases. The mud spring has salt, carbonate of soda, carbonate of magnesia, sulphate of soda, sulphate of iron, silica, and a little organic matter. Paso Robles Spring No. 2 has salt, bicarbonate of soda, bicarbonate of magnesia, sulphate of soda, sulphate of lime, alumina, oxide of iron, sulphate of potassa, and considerable organic matter. The salt in springs is principally valuable for bathing purposes. These springs mentioned have alkaline waters, the carbonates predominating. Other classes of springs are the saline, with chlorides predominating; the chalybeates, with a good proportion of iron; the purgatives, having sulphates; the sulphur, having the odor of sulphur; and the thermal or warm, prized for bathing. All of these springs are found in California. Of alkaline springs, the Vichy (Europe) and the New Almaden are almost exactly alike, having a similar amount of chloride of soda, carbonate of lime, and chloride of sodium. Vichy has also carbonate of magnesia and of potash, sulphate of soda, chloride of lime, and phosphate of soda, while the New Almaden has sulphate of magnesia and of lime. The Adams, Sanel and Congress Springs are also alkaline, and are prescribed for dyspepsia, diseases of the stomach and liver, gout, etc. The Congress Spring has also a portion of iron in the water.

The Congress Springs are a strong alkaline and chalybeate water, at a temperature of 50 degs. They contain chloride of sodium (salt), sulphate of soda (Glauber's salt), carbonate of soda, carbonate of iron, carbonate of lime, silica, alumina and magnesia, a total of 835 solid grains to the gallon.

CHALYBEATE SPRINGS.

Of Chalybeate Springs, Schwalbach and Spa, in Europe, and our Napa soda, Geysers and Skaggs, have similar amounts of carbonate of soda, of magnesia, of lime and of iron, of sulphate of soda and of salt, though the amount of total solids is greater in the Californian than in the European springs. The Gastein Spring of Europe is of this class, as is the Schlangenbad, which the Calistoga resembles. The Schlangenbad and Spa are the best chalybeate springs of Europe, and these waters are used in all diseases requiring tonic treatment. Napa soda, which is one of the best of this class known, sends its water to San Francisco, where it is used as a beverage.

Calistoga has about the best temperature, namely; 97 degs., for a thermal spring, and is highly prized for bathing, in rheumatic, cutaneous, and kindred diseases, its waters having some constituents which make it probably more valuable than some of the well-known thermal springs of Europe.

Aix-la-Chapelle, Paso de Robles and the White Sulphur Springs, are all sulphur waters, and are all hot springs. The mud of Paso de Robles has some minerals, making it specially valuable.

PURGATIVE SPRINGS.

The purgative springs of Europe are such as the Seidlitz, Pullna, Wiesbaden, Hamburg and Carlsbad. They have mainly magnesia, lime, sulphate of soda, potash, salt and carbolic acid, and are warm. This class of waters is rare in California, and is shared only in part by several springs. Carlsbad was a mutton-broth spring, which is very like the chicken-soup spring at Calistoga. The European Friedrichshall is also of this class.

California has salt lakes stronger than the sea, and highly valuable for bathing, these natural mineral waters being so far superior to any that are manufactured. Indeed, the same results cannot be obtained with chemicals which were not mixed in the water by nature herself, as is admitted by the physicians.

The spring at Soda Bay, Clear Lake, contains soda and iron, but hundreds of the mineral springs of the State have not yet been analyzed, the process being an expensive one, particularly where a number of springs, all having different water, as is frequently the case, are within a small radius.

The Paraiso mineral springs are principally three, the soda, at a temperature of 118°, the sulphur, at a temperature of 112°, and the iron spring, which is cold. These waters contain silica, alumina and iron, magnesia, chloride of potassium, salt, sulphate of soda, carbonate of soda, sulphate of lime, carbonate of lime, a total of 58 grains of solid matter to the gallon. Sulphate of soda, which is Glauber's salts, is a well known remedy.

Anderson's Spring has both hot and cold sulphur and iron waters, and the Matilijo Springs in Ventura County, are twenty-two in number, and vary in temperature from 85° to 150°. They are situated 1,500 feet above the level of the sea. The Allen Springs, in Lake County, are 1,800 feet above the sea; the springs are four or five in number—soda, iron, white sulphur, arsenic, and the so-called champagne spring, which contains salt, magnesia, potassium, sodium, phosphate of iron, silica and carbonic acid.

These are not by any means the only mineral springs in the State, and there can be no doubt that when these valuable medicinal waters are better known, California will be looked to as are some of the famed springs of Europe. And where a double cure may be effected, by one means or the other, it must surely be accomplished, and if the invalid be not immediately cured by the minerals in the waters, let him still remain, and he surely will be by the subtle influences of the California climate.

Choice Land in the Northern Foothills of the State.

For the information of t ose who know nothing of California, we may remark that tne days of newness and isolation, during which a country's produce is required for home needs, have passed away for almost every part of California. As a State, the large annual value of her exports—amounting, by the recent census, in grains, for example, to forty-four millions of bushels; with her produce of gold and silver, amounting to over eighteen millions of dollars, and her produce of fruits, wines and honey becoming every year more markedly eminent—make, it now for ever assured that California will become and remain one of the richest States of the Union. Rich, because of the large amount of money which must ever be flowing into the country from the annual payments made to her for her produce, in excess of her payments for imports. For, such it will be, considering that she has every facility for gradually coming to produce within her own borders nearly everything that civilized life can need, with a continually increasing surplus for export. Now, add to this the consideration that the products of the soil are of the finest quality, eagerly purchased by every country whose home supply is insufficient, it follows that the most distant and little-informed observer must see a solid and reasonable foundation for the assertion that California will, until fully populated, be a choice field for the industry of those seeking openings for their skill and labor. But, something

MORE THAN EVEN THIS

Can be said for California, and intelligently persisted in—much in favor of the poor man. It is a country in which everything necessary to make life agreeable can be more rapidly and more easily secured than in any other State of the Union. Poverty will not press heavily, nor long remain a wearing companion in California—for the very simple reasons, for the industrious man, that desirable land, in such blocks as the poor man needs, is still abundant, and can be obtained without possessing much money; and besides that, outside of cities, industry and care, with a willingness to forego on commencing everything not absolutely necessary, with the first season produce nearly all the food a family can need, by the simple labor of a man, aided by wife or child. In the lack of self-denial on commencing, lies the secret of the non-success or drawing back of hundreds of men. The climate, also, is everywhere greatly in favor of the poor man, being so mild in temperature, and the rain-storms of such short duration; that, living from choice so much in the open air, the whole year ensures, with reasonable case, vigorous health for himself, his wife and his children. Then there are few districts, however removed from populated centres, where a poor man cannot from time to time earn a little money to buy necessaries which cannot at first be grown, either by labor for neighbors more advanced than himself, or by supplying house fuel to neighboring townsmen, which he cuts in clearing his own land, or in a smaller number of spots, by supplying fuel to quarts mills, who are often large consumers. Although California is far from being heavily timbered in the hilly districts, it is usually found that there will be at an elevation of 1,200 feet and upwards, from three to five cords per acre on most of the Government land, which makes quite

A NICE LITTLE ITEM

In a poor man's first income. Ordinarily, pine fuel is delivered at about $5 the cord to mills, and $6 for stove fuel, with a dollar extra in each case for hard wood, which is white oak, a little live oak, black oak and manzanita. The inconveniences of early days are all passed away, together with the often rapid getting of money, and with it the alternate forced idleness. One might suppose from these facts that all the desirable land is already located. In the eyes of a farmer who never saw a hill, it probably is; but there still remains enormous quantities of land yet unentered, which, if put into its appropriate crops, is more desirable than any level land; mixed amongst tracts less valuable. These lands have been protected much by the fact of their so lying in small quantities, mixed with such land as the wholesale cultivator does not care to grapple with. They cannot be worked at lightning speed, and are epecially suited to the man who, with patience and the help of his family, will make them into the most valuable lands in the State. The Government wisely withdrew all these lands from public sale many years ago, so that they could not be got in large quantities, but only by residence on them, and cultivation. Then every man takes that first on which he can most easily earn a living. Those most removed from the chief centres of population are naturally left unentered. But now, the opening of mines in so many parts of the mining districts, and the assured

IMMEDIATE EXTENSION OF RAILROADS

Will bring lands once much isolated into ready connection with good markets, and will make nearly every part of California more favorably circumstanced than even the best localities formerly were. Every man who knows California thoroughly can see that the statements of men who view land only to be worthy of consideration where large blocks lay together, or who value it only according to the ease with which large quantities can easily be cultured, are grossly incorrect. It is of no importance to the poor man that the plough can go over 500 acres in a single field. He only wants a hundred, and wants that in many separate plots. There are thousands of beautiful spots for homesteads, for the man who cannot manage more than half the homestead and pre-emption allowance, and who is satisfied that hillsides of suitable land, though often steep, may yield him more income in crops, which a family can materially help in winning, than alluvial bottom lands in their crops which have to be won by his sole labor. The crops raised by such a man on hilly lands will be grapes, fruit, butter, cheese, eggs, poultry, potatoes, wheat, varied by others in places. Much of the fear of the scarcity of desirable land in California arises from not knowing, with certainty of judgment, to what uses some lands, forbidding-looking to a low-country man with common farming ideas, is advantageously applicable. The writer does not hesitate to say that, of the whole lands of Cali-

fornia which will produce the most valuable of wines, and equally of many fruits, for the most part they are as yet in the hands of the Government. In the matter of

LIGHT WINES,

Which, from some extraordinary quality, produce a higher price than heavy-bodied wines, it must always be borne in mind that it is not soil alone, nor presence of a beautiful, warm Winter, nor a long Summer, that produces excellence. The fact has been so far completely lost sight of in California, and experience of most of the noted wine-growing districts of the world suggests that mediocrity and lack of distinctive features in wines forms the result as yet. Besides Government lands, there are for immigrants lands of private owners which can be obtained at comparatively high prices, and considerable good lands remain in the hands of the railroad companies, which can be obtained from $2 50 to $10 an acre, on postponed terms of payment. The Government lands, which are extensive through the foothills of Northern California, are obtainable on the usual terms of settlement, which may be explained for the use of immigrants, to be thus: The expenses on preempting 160 acres of Government land are nothing whatever on first settlement, or on filing in the District Land Office a declaratory statement of settlement and intention of preempting; but a payment of $1 25 an acre at the close of two years and nine months, with the appointed office fees; after which is done the man (or woman, if head of a family of her own or other children), can obtain a second 160 acres, free from payment except that of office fees, as a homestead—which homestead cannot be sold for previous debts—on which he or she must reside for five years after entry. Or

HOMESTEADING CAN BE DONE

At the very first on surrendering the right of purchasing land by pre-emption. The whole costs to be paid on homesteading are $16 on entry, and $6 at the end of the five years. It is naturally understood, that in a country having so large a produce to sell abroad, every class of manufacture and industry is already in operation, or if not so now, must rapidly be begun, and employ more and more labor, as investments for the surplus annual capital flowing into the country. But it is for the tillers of the soil that we now seek to make everything clear about California. For this class it is useless to speak of the specially favored localities, of which the geographical position, or climate, or nearness to large markets or cities, causes land to be got with difficulty at from $20 to $50, or more, per acre. Nor is it of use to the largest mass of immigrants to describe what much expenditure has made such spots into: nor even to mention the exceptional profits that are sometimes got for a few years, or even continually, in such spots. Few immigrants can command more than will just start them in life in the humblest way, without being burthened with land to buy or risks to carry. It is on this account we have chosen the hilly districts of Northern California as especially desirable for this class of immigrants: extending as far south as until the season's rainfall becomes uncertain in its regularity; which may be said to be as far as a little south of San Francisco Bay in the Coast range of hilly country, and as far south as the Tuolumne or Merced rivers in the foothills of the Sierra Nevadas, excluding the great valley, and the belt of altered climate along the Coast for a few miles inland. California has a completely

RAINLESS SUMMER,

And a season of rains and showers, answering to the name of Winter, with snows in the mountains, from October to April, both included. In the most northern part of the State, and in the Coast Range of hills as far south as San Francisco Bay, and in the foothills of the Sierras as far south as the American River, the moist season often begins in September, ending with showers as late as the first week of June. In Northern California, therefore, a farmer can rely in all years on a sufficiency of rain to mature all ordinary farmers' crops and all fruit crops without irrigation, provided a proper selection of land has been made for fruits. Irrigation is desirable to ensure a succession of garden crops, and wherever successive crops of clover hay is desired, and, usually, if maize be required as a crop. For this use, most of the land lying in the foothills, above a thousand feet elevation, will have some running springs on the land itself; but this feature diminishes as you go south. Through the Sierra foothills a farmer often has also the advantage of purchasing water for any second crops from the numerous mining ditches. The small farmer will find it much to his profit (at least in his first years) to have his crops much varied. Vines and tree fruits will pay him most profit per acre, but he has to wait some years for returns. Small fruits will pay him still better, if he has a wife and girls to attend to them; and if he has none, it is the best investment he can make to lay the foundation for them before he begins his work.

THE SMALL FRUITS,

Chiefly strawberries, raspberries and blackberries, will give him a nice income the second or third year after planting. Of these, we have not yet met with the place amongst the Sierra foothills where the demand does not keep pace with the supply. Vines, apples and peaches will commence to bear the fourth and fifth years—earlier by injuring the trees by bearing too young. All these should be got planted as soon as possible for other work to allow it. They hasten the use of the easy arm-chair. But the first important crops are the garden for human food; some hay and fodder of other sorts for milch cows in Winter; a little wheat as soon as it can be got; and, of first importance, a good-sized piece in a good variety of potatoes. This is a crop which has a very superior quality grown amongst the hills, and will usually fetch double the price in the Winter and Spring that river-raised potatoes do. They present a very important crop to the first settler. Many men support a family entirely by four or five acres of potatoes as their chief source of income. One would hardly like to say what four acres of mountain potatoes should be worth. The first year is often unsatisfactory; afterwards, on land properly pulverized, 250 bushels to the acre is often reached and exceeded. After the new year, those mountain potatoes will bring in the mining districts two cents a pound, more or less; frequently they are much higher. Milk, eggs, butter and poultry always pay well in the foothills, and are always articles of ready sale there, if not distant from mining towns, at higher prices than in the great markets below.

SCRUTATOR.

DAIRYING.

By W. E. Macintire.

Prominent among the industries of California are those of dairying and stock raising—industries for a long time neglected or indifferently prosecuted, but of late settling into a steady and orderly course of progress, and promising to play a most important part in the growth of the State. The more our society takes upon itself a permanent form, advancing by sure, yet vigorous strides, the more will be brought out the great resources of our mountain lands in stock ranges and dairying, eclipsing ere long their fabled universal wealth, and building up homes in comfort for the millions that are yet to fill this fair State. We have been so accustomed to fluctuating success, and to the acquisition of sudden wealth, that it has required a process of

SETTLING

To quiet and cool our brains, and prepare us for the steadier and more certain advance in life-supporting pursuits. What the farmer of the Atlantic struggles hard for we have come to ignore as trifling; their savings of from one hundred to five hundred dollars in a year give them a feeling of success and contentment, and their satisfaction is complete in being thus able to add to the comforts of their families and lay by a surplus from year to year. In almost all pursuits here that surplus would be far greater, provided the same industry, economy and skill were applied, and in none is this more sure than in the raising of cattle and in the making of butter and cheese.

In the present article it is proposed to show the facts as nearly as they can be stated, and as correct as our ordinary sources of information will allow, giving the results obtained from places widely separated and dispersed over a large area of the State. In June, 1880, I had occasion to gather official statistics for the U. S. census in the upper part of San Mateo County, in the township which abuts against the San Francisco line, and in which are to be found most of the large dairies that furnish San Francisco with milk. From Visitacion Valley westward to the ocean, and from San Miguel to Millbrae, the main business of the people is to supply the immediate demand for dairy products in a city of 250,000 inhabitants; while from the great farms of the Sacramento and San Joaquin, and along the coast, there comes also a steady supply by every line of steamers and every railroad centring toward the metropolis.

Into this business there is often large capital, and a systematic supervision over the work itself enables large operators to carry on their enterprise with the strictest regard to economy and success. There are also many others, on a small scale, who work their own land, drive their own team and market their own farm and dairy products. Although the Southern Pacific Railroad runs through this region, and delivers freight at fair rates, the old method of transportation seems still to be the favorite one, and if the visitor were to post himself on the San Mateo County road, at Colma or San Miguel, he would see, day by day, a caravan of milk wagons, of all sizes, from a one-horse conveyance to the six-mule team of the Jersey Farm. Within the San Francisco boundary, and just above Bay View, are the University Mound and Clifford dairies, counting many hundreds of cows, while others, also within the city limits, cover the hills from South San Francisco over to Lake Merced. In the upper part of Visitacion Valley are several more, the chief being that of Mr. Schwerin, whose farm lies partly in both counties. Just above is the dairy of Mr. Clark, and crossing over the hills to the Seven-Mile House, we come in sight of another, owned by W. H. Kline, Esq. Then following the county road to the southward, we pass many good locations where dairies might exist, and where of necessity they must yet be established in order to meet

THE GROWING DEMANDS

Of San Francisco. There is about Colma much land belonging to the different grants and Homestead Associations which could be bought at a fair price, affording good pasturage and capable of supporting large numbers of cattle. This land at present is partly occupied with horses which are sent from the city for pasturage, and partly rented out for raising hay and the common farm products. It is from eight to twelve miles of the city, by a well-graded road, and must eventually be brought under high cultivation in order to get the full benefit of its nearness to market. It is held at varying figures, according to location and quality; some parts being near the railroad, others sloping off to the hills, away to the ocean. Most of the hill land is suitable for pasturage, and also raises good hay and potatoes. It is kept green late in the Spring by the fogs and mists which rise from the ocean, and on this account furnishes better feed than the hills across the bay in Alameda or Contra Costa.

This pasturage lasts from February to September, after which hay, pumpkins and short feed become necessary until the December and January rains start the grass of the next season. The value of the hills would probably range from $40 to $60 per acre, while the lands adjoining the main county road, and along the immediate track of the Southern Pacific Railroad, would run from $80 to $125 per acre. These lands rise gradually from the railroad westward, culminating in a lofty watershed from one to two miles distant, and forming a sunny frontage to the entire farm. The slope is well watered by springs, and on several of the dairies already full advantage is taken of their great value in supplying water and cooling the milk. The Swiss Dairy, on Mrs. Easton's farm, is conducted admirably in this respect, and shows what tact and industry can accomplish when directed by the skill and experience of practical dairymen. There are also many shade trees at the foot of these hills and scattered over the farms, which are of great

value in sheltering stock, adding to the healthful and thriving character of the cows, and also ornamenting the farms themselves.

THE JERSEY FARM.

Just above San Bruno Station is the Jersey Dairy, a large and successful establishment, employing sixty or seventy men, and conducted by R. G. Sneath, Esq. In the two farms owned by this gentleman there are some 2,000 acres, partly good farming land near the county road, and partly a mountain ranch where some of his stock is pastured.

Mr. Sneath has succeeded in converting a large portion of his farm along the upper road into a rich growth of hay, and in June the hay-makers may be seen at work—mowing, raking and hauling it to his barns. This growth, from the natural root, without ploughing or sowing, as in other parts of California, is especially favored by two conditions—First, the moist, springy nature of the slope itself, and second, the favoring mists and fogs of the ocean which nourish the grass and neutralize the drying power of the sun in the summer season. Although not so nourishing as the timothy or clover of the East, the hay makes good feed for milch cows; the yield here is about the average of Eastern hay farms, and many other locations can be found in valleys among these hills, equally well suited for its cultivation and growth. There are fed and maintained on the Jersey Farm, at least 600 cows, beside several hundred other stock, and the main part of their support comes, I believe, from the ranch itself. Every day, at twelve o'clock noon and twelve midnight, the huge milk wagon leaves the farm for the city, bearing the milk of more than 600 cows from this ranch, beside several from outside farms, whose milk Mr. Sneath contracts for by the season.

COMPARISON WITH HUMBOLDT.

Mr. Richard Johnston, of Humboldt County, describes in a recent article to the *Rural Press* the great opportunities for this business in the north, and in that communication states that the ranges of his county will keep in good condition the year round one cow to every four acres, and that the feed is still as good as when the country was first settled. The ranges on the San Mateo hills will do fully as well, and some whose opinions I asked think they will support one cow to three acres, that is, allowing extra feed from the 1st of September to the 1st of February. It matters not, he says, how close the pasturage is fed off in the Fall, in the Spring there is as thick a sward of grass as ever, and the same remark applies equally well here. The cows will average from 150 to 200 pounds of butter per year from the natural grass, with common hay during the Fall and early Winter, and in a few instances, with extra feed of beets, pumpkins and carrots, have yielded 275 pounds. Those who have tried dairying, grain-raising, and cultivation of potatoes, side by side, claim far greater profits from the dairying than either of the other pursuits, and, as a rule, potato raising, once so common on these hills, is now abandoned. This, of course, is on the hill land, where sloping valleys of small size are interspersed throughout the range, and where many inconveniences attend the raising of potatoes and harvesting of grain.

Over the hills, to the westward of Mr. Sneath's mountain ranch, are to be found a number of

CHOICE VALLEYS,

Which slope toward the ocean and lie sheltered between high ridges. These valleys, especially the one farmed by W. Smith, Esq., furnished the best barley hay I met with in any part of the county, and the wheat attained a growth somewhat extraordinary, without manure or any assistance beyond the mere process of Nature. The climate is cool and somewhat foggy, but entirely healthful and bracing throughout the year. The general healthfulness of the township may be attested by the fact that no doctors are to be found from San Francisco to San Mateo, and from the San Pedro Valley on the west to the bay on the east, a distance of more than twenty miles in each direction, and among a population of 1,500 by the census.

Most of the cultivated lands on this west shore are tenanted by Italian gardeners, and many other good farms could be established with industry and a moderate investment. The present owners of a large number of the farms are Messrs. Tobin and Patterson, from whom they could probably be purchased at a fair figure.

If any should desire reliable information concerning the chances, either for farming or dairying in this township, I would refer them to P. Brooks, Esq., who has followed both pursuits here for more than twenty-five years. Mr. Brooks has himself a valuable dairy farm of about 500 acres, stretching from the main road, near Colma, away westward to within half a mile of the ocean. There are also others who have had the experience of many years in stock-raising and farming, and have lived long in this district, who would cheerfully point out to intending settlers where lands are for sale and for what price they could be had. Among these I might name Messrs. R. S. Thornton, Jason Wight and P. Flannelly.

THE SACRAMENTO VALLEY.

In other portions of this State which I have visited, many excellent farms are thrown open for sale, partly because of sickness or departure of owners, and partly on account of that restless desire for change which sweeps now and then like a tidal wave over the people of the west. In the Sacramento Valley, west of Rio Vista, Solano County, several farms are awaiting sale, chiefly from this last cause, and abundant chances could be found for permanent homes and profitable investments. Having lived there in 1871 and 1873, I had many opportunities of gathering facts as to the value of lands and the nature of their productions, and I can testify to the natural richness of the soil and its bountiful products. The main business in this part is raising wheat, potatoes and vegetables, but there are also good locations for dairies, and several already exist. Mr. Linus Tryon has some 1,500 acres in one tract, partly good grain land, and partly marsh and tule, in which, during the dry season, cattle secure feed until the higher ground comes in after the early rains. Less hay is required than in the hills of San Mateo County, and this saving partly compensates for the greater distance from market. Mr. Tryon and others who send butter and cheese from this part haul their dairy products to Rio Vista, whence they are brought from the river steamers seventy-five miles to San Francisco. From this gentleman and also from M. Smyth, Esq., another old resident here, reliable information could be obtained by any who would wish to make inquiries.

SACRAMENTO COUNTY.

About thirty miles to the east of this part, and nearly the same distance south of Sacramento City, there are several farms and dairies which I have visited, especially along Dry Creek and in the neighborhood of Galt. Mr. James Macfarlane has a large and profitable dairy, about five miles west of the town, and near him in the Winter season, are Messrs. Wright and Brownell, who keep each from 80 to 150 cows, beside other stock. In the Summer season, from June to November, they drive their herds to the mountains for feed, chiefly in the foothills and mountains beyond Placerville, and when the feed begins again in the valley they return.

Land in this part could be bought at considerably less than in San Mateo or Alameda Counties,

ranging from about $15 to $30 per acre, and of all those who have undertaken the dairy business on either a large or small scale, I believe none have failed, while a majority have acquired an independence, and several a fortune. Should any desire safe authority for statistics and other facts connected with this part of the valley, I take pleasure in referring them to my old friend John Brewster, Esq., the proprietor of the chief place of business in town. His address would be Galt, Sacramento County.

I have thus briefly sketched out a few of the many great fields to be found in the State suitable for the particular industry I have selected. In addition to the information given I have referred to responsible and reliable parties, who would gladly assist any seeking a home in the State, and who could point out without delay the main chances in their respective localities. Should the Immigration Bureau, when fully organized, desire to point out to emigrants where public lands are still open for occupation and where private sales at favorable rates can be offered, it could do no better than to secure the services of the interior residents, long familiar with various districts in the State, and at the same time thoroughly reliable and conscientious in the discharge of such a duty.

There are still large sections of the State which I have never been able to visit, and which there is barely space to mention, such as the Klamath, Smith River and Pit River Valleys in the north, the San Buenaventura and San Luis Obispo ranges in the south, besides others equally valuable, yet scarcely half filled to their capacity of production and support.

Registrar Bradley, of Marysville, says there are nearly 1,200,000 acres of Government land in his district not yet disposed of, mostly foothill and mountain districts, and fairly suitable for settlement. He thinks that much of the eastern portions of Napa and Lake and the western parts of Yolo, Colusa and Tehama Counties are open where persons wishing to go into stock-raising might profitably locate.

Should the movement undertaken by the Board of Trade, urging upon Congress an appropriation for surveying the public lands, be crowned with success, great advantages would result to coming settlers, and an immense area of more than

TWENTY MILLION ACRES

Would be thrown open—an area capable of supporting a million of people in comfort, and destined at no distant day to take its natural place among the productive parts of the State. Of the great body of Europeans who land annually on the Atlantic shores, few reach a territory where such advantages are offered them, and could information of the above nature be placed in the way of the more thrifty Swiss and German farmers, we are positive these vacant lands would be rapdly occupied, while the State would produce in its hills and valleys all that the Bountiful Giver intended it should, and there would come up from these Western shores a hum of industry which would startle our Atlantic cousins and become at once the joy and pride and glory of the land.

RESOURCES OF MENDOCINO.

There are five counties on the coast north of San Francisco. Mendocino is in the middle, having Sonoma and Marin on the south, and Humboldt and Del Norte on the north. Strangers can easily find it on their maps. Any school-boy can find the famous Golden Gate, through which the merchant ships of all nations come to the modern Venice of the western world. Sailing in toward San Francisco Bay, your face to the bow of the vessel, on your left hand is Marin County; north of Marin, Sonoma; north of Sonoma, Mendocino. You are about seventy-five miles from the southern boundary of Mendocino County as you enter the Golden Gate. That the enquirer may be sure he is correct, I will furnish another landmark by which to find this county. As your eye rests on California, find the 39th parallel of N. latitude, and you will observe that a point of land juts out far west into the ocean, a few miles south of that line. This is Point Arena, in Mendocino County, and it is about sixteen miles north of its southern boundary. This county extends north to the 40th parallel, which is on the line that separates it from Humboldt. This county has been known formerly only as a great redwood forest, fit for hardy woodsmen to ply their vocation in cutting lumber. For over a quarter of a century, Mendocino saw-mills have been furnishing the San Francisco market with millions of feet of lumber annually. The march of civilization, the musical stroke of falling axes, and the discoveries of the adventurer and hunter have served to make developments that give a very different impression. As its forests have been tapped here and there, and roads have been built along its streams, through its valleys and over its romantic hills, time has continued to show the importance of this county and reveal its vast resources. These are primary elements, which are essential to make any country attractive to the immigrant, and in which this county excels, viz: good climate, good soil and abundant building materials.

DESCRIPTION.

Mendocino contains 3,500 square miles. It is as large in area as several European duchies, or half a dozen English shires. It is as large as the States of Rhode Island and Delaware together, with eighty square miles still left in reserve. Much of its surface is rough, mountainous, timber land, unfit for agricultural purposes. Its loftiest peaks and steepest hillsides, when its timber is cut, will, if sowed with mesquit grass, make excellent pasturage for cattle. This county offers superior inducements, and presents special advantages to any and all who may seek to march with "the star of empire," and find happy homes in the land of the setting sun. There is no country where there are better opportunities for the poor man, with little or no means, and also for the man of moderate wealth. There is no other country where capital might be more profitably invested, and where money would eventually yield better interest. There is room and place here for thousands of families, where they can live comfortably. From a report recently issued from the Land Office, at San Francisco, it appears that one-half the land in the county still remains unsold. This leaves, then, 1,750 square miles, or a million of acres, yet to be settled up, being open to preëmption and homestead settlement. Most of the valley lands are taken up and occupied. These all lie inland, and are contiguous to the water courses formed by Eel River, flowing north and west, and Russian River, flowing south and west. The greater part of public lands vacant are to be found in a belt midway between the valleys and the ocean. Lands along the ocean, the whole length of the county, have been taken up for several miles back. Most of the saw-mills are found at or near the mouth of the rivers where they enter the ocean. The lands on these streams have been also taken up by those owning these mills and others. At the head waters of these rivers and on many of their tributaries are to be found thousands of acres of land unoccupied, and even townships unsurveyed, with the most valuable standing crop which is found anywhere to-day on the continent. The time is not very remote when all these lands will be taken up, and these hillsides and vales, these dells and upland ridges, will be in possession of an industrious and prosperous population, like many spots known to the writer, where ten or even eight years ago awful solitude reigned in silence, unless when broken by the heavy footfall of the prowling bear or the nimble tread of the deer.

In many places this has given place to human habitations, lowing herds and the merry voices of children. Many parts are unfit for cultivation, it will be said, and therefore do not furnish sufficient inducement to the settler. Not for men who want cleared prairie farms to work and cultivate. If any such wish to come to Mendocino County, they must buy farms in the valleys cleared already, and these can be bought at reasonable rates. The Mendocino wild land is cannot be appreciated where prejudice exists already against them. They are not as rough as many parts of the Old World, where teeming populations thrive upon their industry. The roughest lands in this county are only undulating hills compared with inhabited parts of Wales, Scotland and Switzerland.

TIMBER LANDS, ETC.

There may be small quantities of open lands fit for grazing and cultivation here and there, which are still awaiting claimants. These are at extreme points in the different valleys, and beside claims occupied already by parties who pretend to own these vacant lands, and who get the benefit of them for stock-raising in the mean time. The most of the vacant lands in the county are timber lands. Within a few hours' travel of where the writer now sits, there are hundreds of claims which have been taken up within a few years, and now these men are in possession of these lands, have obtained titles, and are making money manufacturing their timber into railroad ties. Many of these, known to the writer, came here a few years ago from the Old World with nothing to begin the struggle for independence with except their brave hearts and strong hands. They are all now in a position to make a comfortable living and eventually to own valuable homes, as

they clear and improve their land. The most abundant and valuable timber is the famous redwood. The immigrant who comes looking for a claim on which to settle, must go to the Land Office in San Francisco, where they will inform him where the vacant lands are situated. With his description, then he must come to Mendocino, and pay a few dollars to a surveyor or some one acquainted with the surveys, lines, etc., who will show him the very land he seeks. I may as well tell any and all strangers that they cannot find it themselves. However well executed and minutely drawn their plats and maps may be, their attempt to find a certain lot is almost sure to prove "love's labor lost."

OPERATIONS.

Little capital is needed to begin. If a man has some money all the better, as it will enable him to push his way more successfully. Find your claim, build your cabin and get yourself settled. You need not worry nor fret about your lumber to build and expenses of hauling it to the spot. It is all on the ground already. You need no sawmill. Buy a broad and a narrow axe, a cross-cut saw, a maul, a frow and some wedges. You cut down your tree and saw it into lengths, and then split out your boards just of the size you need. If you wish planed lumber for your cabin, then you must purchase planes, etc., in order to dress it, as many of the early settlers did. All that a man must buy is his windows and nails. He can even in a few hours furnish his cabin with table, bedstead, benches, etc., all of redwood. In working up these timber lands there is an excellent opportunity for a man to make his mark. I am not now noticing the capitalist who can purchase a saw-mill site and manufacture sawn lumber. I am addressing the poor man, whose only means are the muscles and sinews of his physical frame. He cannot do better than get his claim and commence to make railroad ties. Redwood is so soft in the grain, and is so easily split, that it is well adapted for this purpose. They are now in great demand, and the Mendocino woods are swarming with men who are busily engaged in this profitable enterprise. There are hundreds of men all along the coast who have been for years employed in this industry, and the demand increases for ties as new railroads are being built and extended throughout the country. These ties are of two sizes, known as the long and the short tie. The former are generally cut to the even size of eight feet long and 6x8 inches through, while the latter are made six feet long and of the same dimensions. A man working ordinarily can make from 20 to 40 ties in a day, according to timber, etc. This altogether depends on circumstances. Many men can make several more some days. One tree may make from 20 to 50, and all the way up to 600, as the writer knows to be the case, and can furnish names who can testify to that fact. Some trees even make twice as many. It must be remembered that some of these trees are from 150 to 200 feet high, and at the butt, where cut, will measure from nine to twelve feet. It is not so strange, after all, if one of them would make a cargo for a schooner. On forty acres of land there would be from 15,000 to 20,000 ties, according to the quantity and quality of the timber. I am taking a small average, as I prefer keeping under the general yield rather than that my statements should prove to be anything but true. This would give from 60,000 to 80,000 ties on one claim of 160 acres. It costs from three to four cents to haul, if the distance is only a few miles. It costs something to make roads besides. Ties sell now at the landings for twenty-eight cents, that is long ties; short ones in the same proportion. When your timber is too short for a long tie, then it can be worked up into a short one, so that there need be no waste. That part of the timber which will not make ties, may make posts, and these are in great demand for fencing material in Southern California, and are sent there by the cargo. The bark of the redwood is very thick, and has a tough fibre, and no doubt some genius will some day make a discovery which will turn it into some article of commerce which will prove useful and profitable. When your ties are hauled away, then you can set fire to the bark, limbs, chips, etc., and when they are burned up, sow over your ground mesquit grass. It needs no cultivation whatever. The rain will start it, and it makes an excellent pasture either for cattle or sheep.

OTHER USES.

Some redwood trees, from some cause or other, are all curled. These are known to all Californians as the curly redwood. These "spiral whirls" run through the timber with a regular uniformity. These undulations vary, and present distinct patterns. Other trees have a large excrescence which grows upon them. When this is sawed and dressed, it presents as many bird's-eyes as the maple of the East. It will take an elegant finish, and will shine, when it is polished, like Aberdeen granite, having a very smooth surface and an attractive appearance. It is well fitted for panel work, veneering, etc. I have seen mouldings of this wood around fire-places, also centre-tables, book-cases and work-boxes of the same material, which far surpassed the japanned work which is so eagerly sought. It would make elegant furniture, and some day it will call forth the admiration of the world, and ornament the parlors of money kings in all lands. Redwood is also cut up very extensively into shakes. These are shingles cut in bunches of 24 each, split with a frow. They are six inches wide, one half inch thick, and four feet long. They are not entirely separated at one end until used. Their dimensions show that they are very desirable for roofs where timber is scarce, and they are in great demand in the southern part of the State, where they are used either for barns, sheds, stables, or even houses.

These are found very suitable, cut in this way, as they are easily transported inland and they cover a good deal of surface. Another industry in which the redwood might be profitably used is manufacturing fencing materials of all kinds. There are dozens of streams in the county which would drive a water-power mill. Fancy pickets and turned posts are needed abundantly all over the State. These are now made from materials on which the freight has been paid to San Francisco, except the pickets, which many of the mills make from their refuse slabs. One of these portable mills could be brought into the woods and set up beside the timber, where everything could be worked up profitably. It is only a matter of time till a long-line railroad will reach this timber belt in Mendocino. Parties are surveying now from Cloverdale to Ukiah, the county seat. Short lines from this main line will strike right into the redwoods. There will also be railroads built from favorable points on the coast into the heart of the timber here, and these shortly. There is one already extending eight miles into the woods on Salmon Creek. It is known as the "Salmon Creek Railroad Company."

In course of time, no doubt, mills will be built at many points which now are in possession of poor men who have no means to develop the resources available. When the canal across the Isthmus has been completed, a new impetus will be given to the redwood industry of this coast.

SHIP-BUILDING FACILITIES.

This is not an Utopian scheme of the writer, but a practical enterprise which has been suc-

cessfully tried already. Mendocino County abounds with the California fir, which has been found easy to work and durable for ship-building. If the timber is cut in the Fall, it equals the best Oregon Pine. The tree is very tall and graceful, straight as an arrow, and without a limb for hundreds of feet. Over two dozen vessels have already been built in this county. There are at least two ship-yards where vessels are constructed on the coast. This industry is only in its infancy, and it seems strange, now that vessels are unable to carry away the different commodities that await shipment at the different landings, that practical mechanics do not build more vessels, where material is so easily obtained. If these assertions are questioned, I would refer my readers to some of the Mendocino and Little River schooners, several of which have been built at these ports, and are now trading to San Francisco.

TAN-BARK, OAK FIRE-WOOD, ETC.

Another tree which grows very extensively is the chestnut oak tree, the venerable Druids on the earth still. These oak groves of Mendocino would furnish them such temples as would both satisfy and astonish. Along most of the landings hundreds of cords are shipped annually to San Francisco. Bark is always in demand, and brings a paying price—sometimes as high as $19 per cord, at other times from $10 to $15 per cord. San Francisco has forty-three tanneries; Santa Cruz has also some of extensive capacity. A few inland towns in different localities have small tanning establishments. Most of our hides are sent east to New York, are tanned and worked up into boots and shoes, and we pay for the transport both ways when we purchase them. Tanning facilities are such in California that it ought to furnish the continent with the best leather that ever passed under the currier's knife. Mendocino having abundance of bark convenient, affords ample opportunity to any one who may wish to engage in this business, provided that a man knows what he is undertaking, and that it needs considerable capital to prosecute this successfully. The man who gets out the bark is in no danger. His adventure will surely pay. Often, on many a timber claim, when a man has cleared it of redwood, he can then begin and cut his oak and peel his bark. This bark is generally peeled from June till September. The wood is sometimes cut up into firewood after it has been peeled, and it makes good fuel. There is a tree which grows all over this county, and which commands the highest price in the market. It is the live-oak. It is soft and cuts easily, and becomes very hard as it dries. It has been shipped in cargoes to San Francisco, but how profitable this attempt has proved I am not able to say.

The yew that grows in many places and the laurel along many of our streams are very valuable and useful. When these woods are cut, as I have already mentioned, they may be sown with grass or planted as an orchard, as has been done very successfully in many places. Any who may desire to see such orchards growing will find them at the Ray place, on the Cloverdale and Mendocino stage route, and along the Navarra River on the same road, before striking out near the ocean.

FRUIT TREES, ETC.

All ordinary fruits grow in this county. Apples, pears, figs, plums, peaches, quinces, grapevines, and all do exceedingly well. There are thousands of shady nooks among these unbroken forests where immigrants may come in, and in a few years have all these fruits I have mentioned. These all enumerated grow on the coast, except the fig and grape, which need to be back a few miles from the rather sharp winds which occasionally sweep inland from the ocean.

CEREALS, ETC.

We can raise wheat, barley, oats, rye, corn, hay and hops. It is said that the hops raised in the Russian River valley command from twenty-five to fifty cents per pound. An acre of ground will realize for the grower from $300 to $800 if planted with hop-vines. The vines produce the second year, and continue to bear for ten years. There are now about 450 acres devoted to hop-culture in this county. Let it be understood that Mendocino County cannot be surpassed for raising all kinds of vegetables. The potatoes shipped from Ten Mile River, Point Arena and Cuffey's Cove cannot be excelled, unless by those raised in our neighboring county, Humboldt.

WOOL INTERESTS.

Mendocino and Humboldt wool bring the highest price and are in great demand. This is an important factor now, in our yearly revenue. Last year, 1,650,000 pounds were raised and sold. The sheep are generally sheared twice a year—in the Fall and in the Spring. I find ten names mentioned in the report of 1880, and they nearly average fourteen tons of wool. Many of our citizens have entered extensively into this business, as it proves very remunerative, and the land is very suitable. Wool is sold from twenty-five to thirty cents per pound. The sheep are mostly these merino sheep. They graze out all Winter. There are seldom any snow-storms that hurt them. It would be easy to erect on every sheep ranch where timber can be got conveniently, a shed, where they would have shelter during the rainstorms that are severe, and it would pay well to feed them with some hay at that time, between the rotting of the old grass and the starting of the new upon the range. There are nearly 2,000 Angora goats in the county, and thousands of acres which are adapted in their native state to pasture these goats, known as the chemissal brush. As there are not mills available where to dispose of this wool, it is not advisable just now to encourage this industry.

WOOLLEN MILLS.

We sell our wool, and it goes East and is returned into cloth, and it comes back to us either in the web or made up into ready-made clothing. It must cost considerable, as it passes through the hands of so many persons, each of whom must make some percentage over the original selling price. Then, there is the freight paid both ways. Now we need the material here. We wear clothes and pay for them. When we can raise as good wool as can be produced in any country, why does not some enterprising manufacturer come among us with his machinery, and set it up, and get the benefit of his investment, and give us the genuine home-made material, instead of the shoddy that is so often palmed off upon us? There are in Mendocino County over 300,000 sheep, and the interest is increasing, and the investment pays, and manufacturing the raw material on the ground is sure to prove a profitable investment for some lucky adventurer. There are towns in the county which would encourage such a project, I have no doubt, with a site for a woollen factory. There are streams to drive such if water power is needed, and if not, there is plenty of available fuel, which costs but little. It is needless to say that such an enterprise would succeed, either at Ukiah, the county seat, or some other point in the valley or on the coast, which connects with the valleys by very good roads, which are passable all the year except a few weeks during the Winter rains and after they have ceased.

WOODENWARE, ETC.

There is always a demand for tubs, pails, firkins, etc. These are all brought from the East,

and must be sold at prices that pay. In this county there is a grand opening for anyone who could set up an establishment for manufacturing this kind of ware. The timber is here on the ground, an endless supply. The California fir will be found very suitable for making such articles. How easy to find a suitable place on some of our streams, with an excellent water-power to saw up the material. There are groves of this timber along the coast, where the trees tower aloft 200 feet and as straight as a rush. No doubt but this will be one of the future industries of the county that will pay profitable dividends to those who invest.

PROSPECTIVE MINING.

The "color" has been found in several places in Mendocino County, and five mining districts were marked off. These were in Eden Valley, Potter Valley, Ukiah, Requa and Calpella mining districts respectively. Gold was not found in paying quantities in any of these places, and operations ceased for the time being and the excitement died away, unless it be in Calpella, where hope of success still keeps the fires of expectation burning. These weird hills and gloomy mountains might yet rejoice the heart of the patient and persevering miner.

OAT MEAL MILL.

There are tons of oat meal brought to this county and retailed out in most of the stores. Freight has to be paid from the city. We raise oats of a superior quality in every part of the county. This oat meal could be manufactured here to meet the home consumption, at least, and it would undoubtedly pay. There are already five grist mills in the county, but no oat meal mill.

TAN BARK PRESSED.

It would be easy to make this a special industry The bark, as now handled, is cumbersome, and it is very desirable, in every way, that its bulk might be diminished. I know of no better way in which this could be done than to introduce strong bark mills, grind it up, and get presses constructed which would press it into bales, which would fit closely together, like so many brick. Pressed bark could be easily done up with a few slats and a couple of strands of wire or baling rope. One schooner would then carry more at once than she could in three cargoes, as it is now handled. This bark will yet be ground up on the peeling ground by steam power, driven by donkey engines in Mendocino County. It will pay.

BEES.

Although I am unable to state how much honey is produced in the county, I know that bees are kept in many localities, and that they have succeeded well. During the Summer months the traveller meets them all through the woods. In the midst of the redwoods, among the oak groves, and where some rippling brook rolls over its pebbly bed, these little industrious toilers sweep past you on their homeward or outward journeys. There is no part of the State where there is better opportunity for bees to gather honey than here. Our climate is so mild and temperate there are always some flowers in bloom that invite them. On the coast, where the air is always modified and tempered by the sea breeze, is this especially true. In January, I have seen the California lilac (blue blossom) in full bloom. All travellers up and down the coast know that the very air is balmy with its rich and fragrant smell. About the same time the manzanita puts on its robe of spotless white, and its pendant clusters of snowy bells are a thing of beauty for beholders and the paradise for bees. The woods abound with wild flowers and shrubs, trees and bushes from which bees extract honey. In the Spring and all through Summer our woods seem a garden of roses. Madrones, blueberries, rhododendrons, wild currants, lilacs and an endless variety are found here.

SPECIAL ADVANTAGES.

The climate cannot be surpassed; in fact, a man can obtain in Mendocino any climate he wishes; on the coast it is fresh and agreeable, nights are cool and pleasant, but never cold. Travelling inland, in a few hours' travel the difference in temperature is noticed. The nearer a man gets to the valleys, the warmer it becomes. We are not subject to any endemic diseases. I am willing to be contradicted by any who can point us to any country anywhere, or any spot on this continent, healthier than that stretch of land along the coast between Sonoma and Humboldt counties, in California. Mendocino is easily reached from San Francisco; it only takes a few hours to reach it by rail to Cloverdale, and by stage to Ukiah, daily. From Cloverdale there is a stage that leaves tri-weekly through Anderson Valley, striking the coast at Navarra. Another route is by the Narrow-gauge Railroad to Duncan's Mills, thence by stage to Mendocino City. By each of these routes the expenses are about the same, costing something over $10, besides incidentals by the way.

There is a cheaper way, if the traveller will prefer it. There are schooners coming all the time to all points in the county. They make short voyages, generally, of a few days, and furnish board and passage for about five dollars. This is the cheapest and easiest if one is willing to put up with the unpleasant sensations connected with sea-sickness. There is still another way yet, the steamer Alex Duncan leaves Broadway wharf, San Francisco, every second Monday at four o'clock for Mendocino City and way ports. Captain Von Helms will kindly care for any who come with him and land them almost anywhere between Point Arena and Bear Harbor, the northern extremity of the county. Fare, including board and bed, to Mendocino City, nine dollars. Strangers coming should find out in the Land Office in San Francisco where there are vacant lands, and then strike out as near as they can for this locality. If they want timber lands, Mendocino City is a good point to start from. If they have some money and seek improved farms, which can be bought reasonably, Ukiah would be the best place to get information.

DAIRY BUSINESS—STOCK-RAISING.

Dairying is an important item in our valuation. Hundreds of beef cattle are every year sold for ready money. There is always a constant demand. As the country is cultivated and sown with better grasses, there will be an increase in the number of cattle raised. Butter-making pays well. There is generally a local market found for all the butter made on the coast. Last Summer the price averaged twenty-five cents per pound, and immediate sales. I have no figures to show the quantity made, but in 1866 the returns showed 5,000 pounds. Since that time, owing to marked improvement, there must be much more produced now.

HOGS, ETC.

There is an extensive business done in raising hogs. This is chiefly and most profitably conducted in the valleys. It is generally managed in this way: In the surrounding woods are found immense oak groves producing tons of acorns. These begin to fall in Autumn, and continue falling all Winter. Half-grown hogs are driven out on this acorn pasture, where they luxuriate all Winter, a herd generally coming round to see that bears do not make havoc among them. When the acorns are consumed, they are then in a good condition either to be kept over during next Summer, or fattened with corn or peas raised on these rich valley lands. These hog

claims are valuable, as there is little or no expense except purchasing the land. The acorns fall themselves, and the hogs eat them.

PROSPECTS, WEALTH, ETC.

Mendocino is no isolated, inferior, second-grade county. It stands in the very front rank in importance and position. The first few settlers came here about thirty years ago. The county has advanced in prosperity ever since. Every year added to its prosperity, made new discoveries of its resources, and afforded fresh developments of its material advantages. Since H. Meiggs, the railroad king of Peru, built his first mill at Mendocino City, sawmills have improved very much in the gear and machinery. Nineteen mills run most of the year in this county, and manufacture over forty million feet of lumber annually.

The valuation of property in Mendocino County for 1880 gave a total of $6,006,792. There are four weekly papers published in the county—three in Ukiah and one in Mendocino City. There are in the county nineteen school districts where school is kept open part of the year, and in most of them all the scholastic year. There was expended on education, in connection with our common schools, in 1880, $10,620 80. Mendocino has four Roman Catholic churches, with suitable edifices, three on the coast and one in Ukiah. There are five organized Methodist churches. There are three organizations belonging to the Presbyterians, with church buildings at Ukiah and Mendocino City. The Christian denomination have two organizations in the county. The Baptists have five organizations, but only two church edifices, and these are on the coast.

There is plenty of room for all who wish to come and settle in Mendocino County. We want men who are ready to face hard work, who will put up with some inconveniences for a while, or even rough it at the outset. Let none fear but they can make an honest and successful living, and in time, if sober and industrious, obtain a competency so as to live comfortably. We have many men worth over $10,000 in this county who began with very little. Our climate is so exceedingly pleasant that new settlers build only very common domiciles at first, and never suffer from the cold. On the coast after the Fall rains we have our loveliest weather; our forests abound with game; deer, ducks, wild geese, pigeons and quail are found everywhere. Most of our streams have plenty of fish. In every little brook may be seen mountain trout. In September the salmon enters most of the streams running into the ocean. Codfish are found out in the ocean, but few try this business. Abalones are found all along the seashore, and they formed a lively business several years ago for Chinamen, who dried them and sent them to China, where they sold readily at 25 cents per pound. The beautiful abalone jewelry, so fashionable and greatly admired, now might be manufactured here by machinery, as the coast is strewn with shells.

There are many industries which might be suggested, but it would only be an endless task. Our farmers are lords of the soil and noblemen of creation. In the Old World landlord and tenant are involved in a bloody strife; here we have only one class—all are landlords. We want a larger population, so that we may live closer together. We have now only a population of 12,800 souls—not four persons on every square mile. We have room for over 620,000 immigrants before we are as closely crowded together as they are in the Switzerland. We can accommodate 925,000 more before we are as compact together as the people are in the Netherlands. If 974,000 came, we would still have as much room as the people have in England. Our soil could support as many to the square mile as any of these countries if we worked our land as wisely and prudently as they do. Our scenery is just as inviting, our air as balmy, and our skies as lovely. We live not only in the El Dorado, but in the Italy of the New World.

A gifted poetess of our own county, Mrs. Anna M. Reed, of Ukiah, has well said of Mendocino:

"Her redwood groves, they sing a living song;
Her rivers to the sea rich greeting bear;
Her farms are nestled in the vales;
Her hills a smiling prospect wear."

"Within her bounds dwell sons of noble toil,
Whose lives in usefulness seem half divine,
Within whose hearts the echoed truth
Of words thus offered at her country's shrine."

"God bless the earnest, peaceful hearts that know
The quiet joys that fill the farmer's life;
And bless the ones who share their lot,
The careful mother and faithful wife."

Of the fifty-two counties in the State there are forty-four that contain less taxable property than this county. Mendocino, then, ranks eighth in wealth among the counties of California. Her star ascends in altitude and grows in brilliancy.

Perhaps I should say that a special Act of Congress, passed some time ago, applies to timber lands in California and Oregon. It allows any one to find 160 acres of timber-land, apply for it at the land office and advertise it in a local paper, and then buy it out by paying $2 50 per acre. Many claims of this kind have been taken in Mendocino County this last year, and others are now finding claims and advertising in order to purchase them. OBSERVER.

PRACTICAL TALK ABOUT LUMBER.

By JOHN LUCAS.

We are now in the middle of the season for redwood working, and in the forests all along the coast, from the rise to the setting of the sun, may be heard the sharp ring of the woodman's axe' the scraping of the saw, and the crashing sound of falling timber. In every gulch and hillside where good wood is to be obtained, men are working with a will, filling orders for ties, posts, etc., but notwithstanding the great number of energetic workers, the demand, like in past seasons, far exceeds the supply. This reason accounts for the present article, and in it the writer will endeavor to show the thousands of unemployed in San Francisco and elsewhere, where they can obtain remunerative work, and of what the work consists. First we will treat of the redwood, as this is its season, and it is really the most important.

THE REDWOOD TREE.

This tree peculiarly belongs to the Pacific Coast. Nowhere else is it found growing in the same magnificent proportions. It is essentially and *par excellance* the poor man's tree, and is more prized for the common purposes of the household than all others combined. It runs straight from the root, is gigantic in proportions, and so easily worked that in the labor item alone three ordinary redwoods will about equal one tree of any other species in cost made into lumber, and then you will have ten or more times the wood. This may seem strange, but it is true. The redwood splits straight and requires little work at the hand of the carpenter, unlike the oak, and, although the pine splits straight, it is a hard wood and requires much work. Then the redwood is very durable, more so, in fact, than most other trees. These facts joined make it the cheapest and most serviceable tree in the world, and as there is an almost inexhaustible supply, there is but little danger of a scarcity, at least for many years to come. As the demand increases, and it will constantly increase, owing to the growth of railroads and the opening up of agricultural lands, good prices will always be obtained and men will be in constant demand. This should turn the attention of workingmen to the redwoods, for in no other field is there such a glowing prospect for men without money.

THE STARTING POINT.

It is an old saying that once well started in anything, half the work is done, and this is very applicable in the present instance. Let us suppose a man out of work looking for something to do, and San Francisco is full of such men. He turns his attention to the woods, but knowing nothing about them, and not willing to trust to chance, he rarely comes up to the acme of first perseverance and gets there. He applies at intelligence offices, gets no information, or sometimes worse—false information—and so keeps on in the old ruts, doing his day's work at whatever may turn up, loafing half the time and living a hand-to-mouth existence. To such a man we would say, go to the woods, go to any village in the woods in Sonoma, Mendocino, Humboldt, or other counties, where there are good forests, and you will have no trouble in getting work. But, remember, it is work, and hard work; but it pays, and you will have plenty to eat of good, wholesome food and a comfortable bed to sleep on, besides putting money in thy purse. All you want is a working suit—rough pants and boots, with a couple of wool shirts. You don't require any "boiled linen" and can leave the razor at home. Tools will be supplied you. Now for facts, and the writer wants to be a Gadgrind in this: say you have a $10 outfit; it won't cost more; your fare will cost from $5 to $10, with $5 in pocket at destination—$25 in all—and you are fixed, and the work before you. Don't be afraid you won't get it, for the demand is great for the willing worker. Taken to the wood cabin, you will find your home and provisions. Three to four dollars a week will pay for your board, with nothing to pay for rent. If there be only a few of you, you will have to cook your own meals; otherwise a cook will be provided. At first you will likely be put to sawing. The saw is the ordinary redwood one, crosscut, six to eight feet in length, and six to eight cuts of a tree five feet in diameter is a fair day's work. The cut for posts is seven feet long, for ties eight feet. Next to sawing, splitting is in order. For posts the face is 4½x4½ inches, ties 6x8 inches. Commencing at the top cut of the tree, you split the cut from its top down the middle. The reason for splitting the cut from the top is obvious, because if you split it from the bottom it would not keep its width, as the tree lessens in size, and your post must have the minimum, 4½x4½ inches and seven feet long, but a little larger does not make it objectionable. If it is smaller it is culled. The same reasoning holds good for ties, but with this difference: ties have to be neatly squared with a broad axe, hewed into perfect shape, while posts are taken in the rough as they come from the tree. Now for the price: For posts you will be paid two and a-quarter cents each, and for ties eleven. In what is known as rough ground you may get a little more. A good five-foot tree should contain from eight to ten cuts, and have three or four hundred posts or a proportionate number of ties. The chopper of the tree, of course, has to be paid out of this on a proportion of one-fourth, or as you may arrange. In a few months you may learn to chop your own trees, but it is best to have a partner, so as to change off in chopping, sawing and splitting and with ties hewing. Two of you should work up a five-foot redwood easily in two days or less. To pick out the tree is no small part of the work, and one on which opinions differ, as a bad splitter will have to be left, and the time spent in chopping thus lost. So far as known, the best tree is one with straight, wide bark, whose chips are also straight, not "kinky." You can throw, after a little practice, a perfectly straight tree anywhere to suit you, but one leaning—and the majority lean—must be thrown in the half circle toward which it bends. This is done after the half cut is made, by graduating the outside cut towards the point of fall. Then for the "swamping" out, or cleaning away the underbrush, which is generally very thick and troublesome, especially if it is composed of oak tops and huckleberry vines, and so on to sawing to splitting. This is all there is in it. There is no "trick" in the work, and anyone may take it up who has any brains at all, and is willing to use his hands. The work can go on all the year round, but it is generally dropped when the barking season arrives, which for a few months is more profitable work. At the end of the so-called season, you will have money in pocket,

and then the next step would be, in place of spending it in the city, to take up a claim and go to work for yourself. After a few months' work you will know all about it, but to those who have a little money and no experience, and who are out of work, the following remarks will not be out of place for their guidance, if they want to make a home in the redwoods. To digress a moment, it should have been said that, supposing the poor man had a wife and family (and he generally has), he can off and on draw a little money from his employer, and send it to them, or after he is settled bring them to live with him, which would be cheaper, and even with all this outlay, if he is a good worker, he will have sufficient surplus to enter a claim for himself at the end of the season.

LOCATING A CLAIM.

By a wise provision of the General Government, any citizen, or any one who has declared his intention to become a citizen, may take up a claim. This consists of 160 acres, and the first thing to do is to find a good one as near as possible to a depot for transportation that is as near as possible to the ocean. All the way from the upper counties down along the coast there are transient calling places, where schooners put in as soon as notified that a cargo awaits them, so that if near the water there is but little trouble and expense in shipping to market. Notwithstanding that the best coast claims have been taken up, there are still good ones, and ones abandoned full of redwood, oak, pine, and other trees, waiting for the willing worker. Now, to find one of these is the trouble. The man with no experience in the woods should not try, or depend too much on what people may tell him. The best way is to go to work for a time for some other man, gain a knowledge of the woods, and with this lore, search for a claim and take it up. How to do this, and what will be required for working it when it is done, are the next essentials. Having found a claim, you file it in the Land Office of the District. This will cost $3. Next, you build a cabin, and work up an acre or so in the nearest clearing. In this cabin you live for six months, prior to proving up, when you pay for the land at the rate of a dollar and a quarter an acre. You, of course, can take up less than 160 acres, and the time for payment may be extended for a year or more; but it is as well, if you have a good chain to take up 160 acres at once, as you can only enter a claim once at the price, and pay at the end of six months, so as to be clear of debt. The plan requiring a certain amount of land to be worked up is a good one, but one which not one-tenth of wood-workers appreciate or apply to their advantage and profit. On it you can raise vegetables for the table, in place of paying three prices at the store or doing without, and for many other purposes it is very beneficial. Having erected a cabin, you must clear away the trees adjoining, so that a heavy wind may not endanger it and you by some day blowing over a tree or branch. Next put in your supplies, furniture, bedding and provisions. If you have a horse and wagon, you will save the cost of hauling. Tools are the next requisite. Crosscut saw, steel wedges (five or six), bar, axe and hewing axe. Your firing is ready at the door, and, with your tools, you are ready for work. If you have a wife, so much the better, she will be a good helpmeet, and you will not have to cook and wash, or keep the house in order. You should also have a man who will work for what he can earn. Two are always better in the woods than one, and assistance in any pinching work is mutually rendered, and time passes away more agreeably and socially.

As an owner you receive, according to the market, from 12½ to 15c. for posts, for ties, 45 to 50c., which leaves you a profit of 7 to 8c. on posts, after paying all charges, and proportionately on ties. Then you are your own master and own your own home. The hired man receives much less than half of this, and his endeavor should be to become an owner as soon as possible and throw off his servitude, even if it is a pleasant one, as it generally is, for the master, rarely in the woods, is other than one who himself served and not often reckons on his help as above it, but only its equal. This is especially observable in intercourse and all social gatherings.

Condensing the matter in brief, we then arrive at the following: Given a good tree, five feet in diameter, in good ground, say of ten cuts, and containing 300 posts, two men, two days, at 2½ cents, $6 75, minus board. The owner, who does nothing, receives about double, and if he is working trees himself, which he generally is, about three times as much. Now, this is good pay, better, certainly, than city work, and if it is harder it is steady, not working one day and loafing the next.

To figure up the cost of getting everything in readiness before the work is really started is an important but easy matter to the claim owner. Filling on your claim costs $3. The cabin nothing but the price of nails and a hammer, as the wood is your own and at the door. Hauling, say $8 per day, four-horse team, bedding, stove, furniture and supplies, bacon, flour, onions, coffee, tea, cooking utensils, etc., about 10 per cent over city prices. Tools as enumerated above the same. In all, say $150, and you are fixed for the season. Each one, beside yourself, will cost say $50 more. If you have a horse and wagon you can save the expense in hauling, but it will consume your time, and you will have no use further until the end of the season. Even then, one horse would be of no account for heavy hauling, and would eat in the meantime more than it would cost to have the work done by others. You should, however, by all means keep your own poultry and pigs, as they cost literally nothing, and in the matter of pork and eggs, if you do not, you will have to pay store prices, and they are always fancy ones.

The above brief outline is to the point, and for the guidance of intending woodmen will be of practical benefit. The writer has endeavored to place the facts before the public so that the unemployed may know where to turn to for remunerative work, and those with small capital may know how to increase it without danger. The work is there. Let those willing at once take advantage of it and build up homes. The redwoods are open for thousands, and unlike the forests of Canada or British Columbia, offer the greatest advantages to all in a magnificent climate, with a ready and near market. There is no intense heat or bitter cold. The climate is equable and work goes on all the year round. Schools are always near enough, but grog shops generally find better business in other localities and are scarce. Sickness is something unknown.

As the workers are far from city attractions, but near enough for all necessary purposes, money earned is money saved. To those, therefore, who are ambitious to make for themselves a home and to rear their children "far from the madding crowd," we would say, turn to the redwood forests of California. If it would be thought desirable to correspond with owners, doubtless the Gualala Mill Company at Gualala, the Mill Company at Eureka, Gus. Schnoor of Fisherman's Bay, who employs many men, Edward Stuart, Mr. Winslow, Mr. Cole, and other gentlemen of Fisherman's Bay, would supply all information required to those seeking work or seeking claims. This article has been confined to posts and ties solely for the reason that posts and ties are about the only things made now, or likely to be for some time to come, out of the redwood in the woods.

STOCK RAISING.

By ROBERT LYON.

Twenty-five years ago, the only cash product of Southern California was cattle. At that time all the great tract of country lying between San Luis Obispo and San Diego, comprising a distance of over 300 miles along the coast, was one vast cattle range. Then, land was laid off and owned by leagues instead of acres, and agriculture was so little known that a ten-acre field of grain would have been a novelty. A cattleman or ranchero generally owned from nine to thirty-three square miles of land in the valleys and along the water courses, which comprised his cattle range or rancho, and a California cattle raiser at that time generally owned from 3,000 to 60,000 cattle, and from fifty to 500 horses. Of course those estimates include all classes of stock, both old and young. But since the great grants have been segregated and sold in small tracts to farmers for grain and fruit land, and the passage of the no-fence law, which prevents cattle from roaming where they please, and makes the owner of stock liable for damages when his stock trespasses on the land of another, stock raising in Southern California is so limited that there is scarcely enough raised in this once great cattle country to supply the local markets with beef.

Twenty-five years ago the counties of Los Angeles and Santa Barbara furnished more than one-half of all the cattle used at that time for food in the entire State of California. But at the present time beef cattle will bring a better price in Los Angeles, Santa Barbara or Ventura than they will in San Francisco, and it is hard to find cattle, even at a high price, to supply the continually increasing local demand. At the present time stock raising receives less attention, and is more neglected in Southern California, than any branch of industry which usually follows farming. A few years ago, when the rush of emigration to Southern California was so great that land sold readily at almost fabulous prices, and the mania for orange groves was at its height, the land was too valuable to raise cow feed on, and cattle men disposed of their stock, and then began selling off their large ranches in parcels to the new comers, who engaged exclusively in setting out large orchards and grain raising; so in a few years the great cattle ranges of Southern California were converted into great grain fields, and every little valley, even far back in the hills, that was favored with a running brook, or a living spring of water, was occupied with a cottage and orchard, but the improvements were seldom enclosed with a fence. The hills bordering these mountain valleys are, in some instances, the very best kind of pasture land, and would maintain and fatten hundreds of cattle if they could be safely guarded so as to prevent them from trespassing on the land of adjoining farmers. Many of these hill-enclosed valleys proved too cold, or too dry, for the successful propagation of the orange and other tender tropical fruits. Those places could be purchased at a low figure, and held in connection with the hill land (which can be purchased at from one to three dollars per acre), would make an excellent and profitable stock pasture. Throughout Southern California the new grass starts with the first Winter rain, which generally comes in November and continues green and growing until the rainy season is over, which is about the 1st of May. San Buenaventura is near the centre of Southern California, and the rain record kept by I. T. Saxby, of that place, shows the following to have been the rainfall during the months of November and April for the last four years. Rainfall in November, 1877, 3.65-100 inches; November, 1878, none; November, 1879, 1.95-100 inches; November, 1880, 77-100 of an inch; April, 1878, 1878, 2.26-100 inches; April, 1879, 2.15-100 inches; April, 1880, 3.61-100 inches; April, 1881, 45-100 of an inch; and the total rainfall in each year for the last four years was as follows: June, 1877, to June, 1878, at Ventura, 20.22-100 inches; June, 1878, to June, 1879, 12.79-100 inches; June, 1879, to June, 1880, 22.63-100 inches, and from June, 1880, to June, 1881, the total rainfall was 13.71-100 inches. The more rain the better the feed and the fatter the cattle. The pasture in Southern California is generally at its best in March and April, and young steers that were poor in December, if permitted to run in the hills, will generally be good beef in March. Where the grass is not fed off in the Spring it is dried and cured on the ground where it grew, and remains good feed until the first rain comes in the Fall, which destroys it. Burr clover, which forms one of the principal forage grasses of the wild pasture in Southern California, is eaten more readily by all kinds of stock after it is thus dried, than when it is young, green and growing. Alfilerilla is the earliest and best cattle pasture in California. It is better for fattening than the best tame clover or timothy pasture, and as long as it remains green (which is generally from the latter part of January to June) it is the best feed for dairy stock in the world. It produces an extra flow of rich milk, and the butter made from cows grazed on pastures of green alfilerilla, is of the best quality. Most of the low hills along the coast of Southern California (excepting those which are too rocky to produce anything, or so densely covered with brush that nothing else can grow), are covered each Spring with a heavy crop of this rich and nutritious stock food, and the more it is pastured the better is the yield the next season; and after land has been fed close for a few years, the alfilerilla will run everything else out. Wild oats are indigenous to the soil and climate of Southern California; on some of the hills, where there is no stock to feed it down, the wild oats grow as tall and thrifty as the oats that are cultivated in the valleys. All that region in Ventura County known as Sulphur Mountain, is mostly covered with wild oats. One year ago that whole country was swept by fire, but nevertheless the oat crop was last Summer as good as usual. Alfalfa does exceedingly well in Southern California, and will grow all the year round, where the land is not too dry, or where water can be had to irrigate with. But alfalfa will not make as good a growth during the Winter and early Spring, when the ground is cold, as it will in the Summer and Fall, when the ground is warm. For instance, a field of good alfalfa will yield a good crop of hay every fifty days from the 1st of April

until the 1st of December. And the same field would not yield more than one good cutting from the 1st of April to the 1st of December. Alfalfa keeps green, but grows very little during the rainy season; but alfillerilla grows rapidly all the time after the first good rain, and more than supplies the place of alfalfa for Winter pasture. Therefore a stock range composed of these two superior grasses—alfalfa and alfillerilla—would supply excellent green feed all the year round, and make the best pasture in the world. I know a few men in Ventura County who each has a small patch of alfalfa growing on his farm, and of late years some of them have kept a few cows, and raised the calves instead of killing them, as they did when they only kept one or two cows to supply the family with milk and butter. Some of these farmers have their grain fields fenced, and let their stock range in the hills during the Winter and Spring, and then turn them on the alfalfa pasture in the Summer, after feed in the hills is dried up or fed off. These farmers never feed their loose stock anything, and only feed their work-horses when they are using them at hard and regular work; at all other times they run on the range, and do better than they would if kept in the stable and fed hay and grain twice every day. And those cattle which run on the range all the time, are never poor, but dry cows and steers are fat enough for beef at all times of the year. I have noticed that the few farmers who keep and raise stock, are, as a general thing, more prosperous than the many who depend entirely on agricultural products for their revenue. And this is often the case when the man who raises stock has a very cheap farm, with not much good grain land on it, and the man who raises only grain has a very valuable farm, all of it good land, that would sell for ten times as much as the stock farm, although it does not yield half so much revenue to the owner. On the outskirts of the great grain fields of Southern California, and bordering the foothills, which always surround every valley, are hundreds of small farms that were bought and improved years ago, but which, on an average, have not paid expenses, chiefly on account of being cultivated by men who knew nothing about horticulture, and who persistently tried to make their land produce products to which it was not at all adapted. Some of them set out acres of orange, lime and lemon trees in the early Winter, or at the same time they set out their apple trees, and they wondered why the orange, lime and lemon trees all died, when the apple and peach trees, which were set at the same time, all lived and grew so nicely. But they were not looking for an apple and peach orchard. They had come to Southern California to get rich growing oranges, and as that land would not grow orange trees, they did not want it. But after the orange fever died out, it was hard to sell a small farm at any price, so many of them still hold their little farms, and make a bare living by cultivating the arable land, which may range anywhere between five and fifty acres, to barley, wheat or corn, and each year trying to sell their land for half what they paid for it, without any improvements, but without finding a purchaser even at that. Now, if these men would seed their little patch of arable land to alfalfa, get a few good American cows and pasture their land instead of ploughing and planting it, they could derive a good revenue from their unprofitable place without much labor or expense. Any one that has a range for fifty cows, and their increase for two years, has a pretty sure thing on $1,500 per annum from sale of stock alone. For after the second year he ought to be able to sell forty head of two year-old cattle every Fall or Spring, and a good American two-year-old, either steer or heifer, will always bring $40 for beef, if fattened on a good alfillerilla or alfalfa pasture. To be sure, if a man wished to milk his cows, and carry on dairying, in connection with stock raising, he would derive a much greater revenue. But the dairy business is very confining, and it is hard work, besides a man must have some experience in the business in order to carry it on successfully. There are hundreds of unprofitable grain farms in every part of Southern California which could be turned into very profitable stock ranches, and there is a better opportunity to engage in stock raising now with a small capital than ever before. In the first place grazing land is cheap, and can be bought in large or small tracts to suit the purchaser. In the second place there is always a ready home market for fat stock, and there is always likely to be. In the third place the natural pasture is best, and cattle are fattest early in the Spring, which is the time of year when beef is scarcest and dearest. And fourth, stock require less care in Southern California than any place in the world. The great herds of long-horned, slim-legged, wild-eyed California mustang cattle, which formerly filled every nook and corner of Southern California have almost entirely disappeared. Still there are a few ranches far back in the hills of Ventura County where they keep a few thousand of the native, or Spanish cattle, as they are generally called. But even there the young stock is mostly half or three fourths American, and the old cows alone retain their native purity of descent and their natural ferocity of disposition. Sometimes bee-keeping is carried on in connection with stock-raising, and where a suitable location is obtained (and there are plenty of little valleys which would answer well for both,) it proves a pleasant and profitable occupation. Or a few acres of land in orchard, securely fenced, would give a man a pleasant occupation for leisure time. And young trees are like young stock, they are growing in value all the time, even at night when the owner is asleep. And if one can obtain twenty acres of valley land for alfalfa, with a good hill range to back it, he can maintain even in a dry season 150 head of cattle, old and young. For if feed is likely to be short, he can cut two crops of hay from his alfalfa before he pastures it, and keep that hay to feed late in the Fall. The main thing for a good stock range is plenty of good, pure water, and in Southern California the hills are the best places to find it. And cattle raised in the hills are more healthy and hardy, are better travellers, and have better feet than cattle which are raised in the valleys. At the present time beef cattle is scarce at seven cents per pound, and American cows sell for from $40 to $60 per head, including the calf. There is no fixed price for stock cattle, and there are very few for sale in Southern California.

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BEE-KEEPING IN CALIFORNIA.

California holds a peculiar position on this continent. Differing in climate from every other State in the Union, her productions will always be special. Certainly one role she will always play will be that of a large honey producer. Go where you will in California, there is just sufficient Winter to make the bees instinctively gather all the stores possible, and yet it is so short that the little fellows can work nearly all the year round at one thing or another—for they do not always work at the same kind of work. Early in the year they have progeny to raise, to supply an army of workers for the press of the season of abundant flowers; so they have then to gather special food for the young brood differing in part from common stores.

RELATIVE VALUE OF DIFFERENT DISTRICTS FOR HONEY-GROWING.

Some parts of California differ much from others, owing to the prevalence of flowers in various seasons which does not exist in other parts; and so it has come about that Southern California, near or toward the coast, has become the great honey-producing region. This selection is not in the least one of those seeming chances which causes manufactures to grow up in one locality, whilst another apparently more favorable is neglected. One only needs to intelligently observe both Northern and Southern California to ascertain the reason why the South is so prolific in honey. Before having an opportunity of so doing, the writer was at a loss to understand it, and could find no one to explain it, having judged that the climate of Southern California, being so much drier than that of Northern California, the country must be more destitute of flowers. The South is certainly immensely drier than the North, after the first burst of Spring has passed in each; yet, for one flower in the North there are a hundred thousand in the South, during the rainless Summer and Autumn. California is in general much less flowery than many countries. Nowhere so continuously flowery as the Western prairies, and nowhere presents such a splendid glow of bloom as, say, the gorse over Ireland, or the heather over the mountains of Scotland, or the Azaleas and Rhododendrons and Kalmias over parts of the Allegheny Mountains. The large valleys are usually very flowery in Spring with herbaceous annuals, which are not great honey producers. The same may be said of many parts of the hilly districts of the north. But, when May has passed, the bulk of the flowers of the year has gone all over Central and Northern California under 2,000 feet elevation. Not so in Southern California. If there the lack of Spring rains causes a deficiency of Spring-flowering annuals, the honey produce may not be much or at all affected, because the bulk of the honey comes from perennial plants which, from their age, have deep roots, and will cover with bloom in the dryest soil with a very moderate rainfall, presenting a continuous succession of bloom from February to December, more or less abundant, and spread over every kind of ground according as the rains of Spring have been favorable.

THE SUCCESSION OF FLOWERS IN CALIFORNIA.

There are some flowers to be found in Northern California during every month of the year; but they are few and far between—conditions very unfavorable for honey; for bees love to work at one time from only one class of flower, and will toil long seeking out one class, whilst other flowers close by will be neglected, though equally honey-bearing. The first flowers of the season are those of manzanita, beginning in the coast counties as early as November, and blooming successively to April. On warm Winter days, these bushes are humming with bees. In February comes the bloom of willows and of chaparral. Now come the Spring herbaceous annuals, and orchard blossoms; but of these little good honey is got. Rhus aromatica and rhus toxicodendron, or poison oak, yield much honey through all the Spring. Buckeye follows, giving a narcotic honey; and then the ceanothus, everywhere through the lower mountains, chiefly white in the north and blue in the south. In the mountains of the south it is amazing to see the continuous areas of bloom from blue ceanothus, at altitudes from 3,000 to 6,000 feet. With these in the north the honey producers may be said to be almost over, with the exception of the small areas of purple clover to be found in springy ground, and the few plats of alfalfa. There is an entire absence of the flowers so deservedly valued in other climates, such as white clover, cultivated clover, tilia or linden, vulgarly known as bass-wood, liriodendron or tulip tree, called also locally poplar. The general absence of maize and of buckwheat is also a great drawback in California, making an almost entire absence of honey-bearing plants in the north after the early part of June. But about this time commences the great variety of honey-bearing flowers of Southern California, embracing the whole of the coast counties from the line of Mexico to Santa Barbara County, and from the ocean to the high mountain chains. In this region, from early Spring, there is a succession of flowers borne on perennial herbaceous and ligneous plants, until Winter again; so that the little valleys and shelving foothills are a successive flower-garden; the most honey-bearing plants flowering in June and July. Later than this, little fine-flavored honey is obtained, but in ordinary seasons abundance of Winter stores is laid in quite late. In those years which have dry Springs, the deficiency arises as much from the honey being desiccated in the flowers as from a scarcity of bloom.

THE WEIGHT OF HONEY PRODUCED BY EACH COLONY

Varies considerably in different years. In some seasons 400 pounds from each colony may be extracted. In other years the bees are liable to die of hunger as early as midsummer, if not artificially fed. The average will not be over half of that of an abundant year. The deficiencies of Nature may be compensated by cultivating honey-bearing plants. Of these, buckwheat is considered the most favorable for California, as on moist ground it flowers continually until cut off by frost. It also makes a desirable honey, much superior to that produced from it in moist climates. But, as every bee around feeds off it, the advantage gained hardly compensates the labor and expense. There is every reason why, in a good year, the produce of honey in Southern California from each colony should be at least double that of the largest production in other States, from the long continuance of bloom and the absence of rain, which both washes out the honey on the flower and also prevents the bees

from gathering. A further reason is that in Southern California at least three-fourths of the whole of the land is uncultivated, and will long remain so.

BEE-KEEPING EXCELLENT OCCUPATION FOR INVALIDS.

It is pleasant and unlaborious.—In a most healthy sort of country, which is specially health-giving to men who are consumptive, or asthmatical, or bilious. Such men will often become quite strong from the pure air, free from everything malarial. One man will comfortably attend to 200 colonies with a little assistance during the heaviest part of the honey season. From these he should get an average crop of from 10 to 15 tons of honey in the season. This year honey is high, being only a one-fourth crop year. The price, in consequence, has been as high as $180 a ton on the farm. Usually $100 may be relied upon, or $120 on an average. Income from this source would, therefore, be at least $100 per month, when the grower had worked up to having his 200 colonies producing. The capital required for the undertaking would be nearly as follows: Supposing him to begin by purchasing 50 colonies and working them up the same season into 200 good colonies, ready to begin the next season with. This plan gives him time to get everything into perfect order, able to do all to the best advantage.

CAPITAL FOR STARTING A BEE-FARM.

Fifty hives common bees, @ say $6	$ 300
Nucleus hive, with pure Italian queen, 3,000 Italian bees and combs of brood	10
Lumber for making 150 hives, and 300 upper stories and 4,000 frames	180
Tools for working to best advantage	120
Extractor, foundation, and all utensils	90
Honey house	100
House for own dwelling and necessaries	200
Provisions and necessary things not grown in garden, for 15 months	150
Cans for packing the first third of extracted honey, say 5 tons, at ¼ cent per pound	25
Bee feeding for first Winter	85
Horse, light wagon and harness	125
Sundry small things	65
Total	$1,400

Now, no two persons will be found to agree with this estimate. It is too high, it is too low, as every one thinks he can do with each item. Pass it so, and say that a man with $1,500 may safely calculate to begin life in bee-keeping, and without other resource of income may, if he gives proper attention and thought, and has an average year to begin on, obtain at least $1,200 net profit the year after beginning, as well as increasing his stock of colonies 50 per cent., whereby to increase his income the following year. He will begin operations by

BREEDING ITALIAN QUEENS AND BEES

From a pure imported Italian fertile queen, and building up his stock of 50 black colonies into 150 young colonies of Italians, and, lastly, substituting Italian queens for his 50 original black queens. He is then ready to commence the next season with pure Italians. These are better workers, more gentle, and will give a perceptibly larger produce in the same time. An intelligent man quickly learns the business, partly by observation of neighbors, partly by the many excellent manuals of Cook, Langsworth, and others. He can have no better guide to form his judgment than the admirable manual called "A, B C of Bee Culture," of Root, of Medina, Ohio, and the "American Bee Journal" and the "National Bee Journal," both published in Chicago. He will there also find where he can obtain every facility he may require.

WOMAN'S LABOR IN BEEKEEPING.

Some help is necessary during the busiest of the season. There is also much light labor in making frames and a host of things. No hand can do this so deftly as a woman's light hand. Many prefer to sell their honey in jars and cans, for all of which labor a woman can do better than a man. Should a man be alone he must pay for labor, which must be added to his costs; and it costs as much for living—more probably, much more—alone as with the addition of a wife. An invalided man, with a wife to care for besides, need have no fear of the initial hardships of the undertaking. The climate of Southern California is so superior to that of any other point, that the first hardships they would sustain until, by their own labor they had made all comfortable, are very little more than Summer camping on the beach. But the spots for this vocation are very retired, and often much removed from any desirable society. In addition, any one going into this life, must be prepared to be in constant attendance at least two-thirds of the year, for at times twenty-four hours' neglect may cause much loss. The greatest part of the bee-keepers are found in San Diego, Los Angeles and Ventura Counties, and scattered northward, near the coast, through Santa Barbara and San Luis Obispo Counties, all of which may be said to have practically no Winter. In consequence, bees never are injured there by cold, and are in vigor to recommence work with the first flowers. Considering the capital employed, a business can be built up in bee-keeping, second to none in its income and assured return.

SORUTATOR.

TULARE VALLEY.

By STEPHEN BARTON.

The tapping of a powerful stream of artesian water near the town of Tulare, recently, brings the public lands of the south portion of the county of Tulare into prominent notice. In the region referred to there are some fifteen townships, all in one body, in which the even sections (and the odd, too, for that matter,) are practically all vacant. These lands are as level as a house-floor, and whoever inspects them will have no hesitation in declaring that for fertility they will rank with the very best lands of the State. They lie on both sides of the Southern Pacific Railroad, and extend from Tulare back to the foothills. The only thing which has tended to keep them from coming into notice and favor was a lack of water. I do not acquiesce in the notion that they are valueless for farming without irrigation, but with simple irrigating facilities, I believe that no well-informed person would question but that they could be made to produce more centals of wheat than is now produced by any county in the State. The soil for the most part is a clay loam of a light color, and generally somewhat compact. In good years most of it is covered with a heavy coat of alfilleritia and clover, and is generally used as a vast sheep walk. There is timber for firewood in the adjacent foothills, and pine and redwood in the mountains beyond afford ample facilities for lumbering. For the most part, the mountains and foothills are also vacant, and are mostly unsurveyed. Some gold mining has been done at White River and Long Town, and a small farming community occupy Lyons' Valley, in the higher foothills.

As a means of determining whether the source of supply of artesian water is liable to become exhausted, it would be necessary to consider the character and area of the adjacent highlands, and the volume of streams which disappear therein.

The streams which rise and flow exclusively in Tulare County from the east bring to the valley an average of about ten thousand cubic feet per second the year round. This is what has been regarded as the only source of two-thirds the irrigating supply of the county; and Kings River, running for the most part in Fresno county, was looked to for the remainder. By entering the mountains, however, and estimating their flow, we shall find that about one-half of the volume of these streams is from the south before reaching the valley. It is not uncommon to find a bold mill stream entirely disappearing, and in the dryest portion of the year no water enters Tulare Lake for a period of several months, though Kern and Tulare Counties and most of Fresno drain into it. During the period of which I am now speaking, the whole amount of water brought to the valley by the various streams of the different counties, will approximate five thousand cubic feet per second. It must not be supposed that even five thousand cubic feet per second covers all the water lost in the beds of the streams of Tulare County. Kern River traverses it for a distance of seventy miles before entering Kern County, and in all this distance its bed is nowhere less than two thousand feet above the level of the Tulare Valley. There is a thousand square miles of mountain region in which much of the water disappers in the beds of the streams. But we must not stop here, for this mountain region is but a fringe on the edge of a great elevated plateau, which extends well across the continent.

In determining whether we have any reason for expecting to encounter the drainage of a continent in boring artesian wells, the elevation of Tulare Valley becomes a factor in the estimate. So far as I am able to ascertain, the elevation of Tulare Lake is believed to be about thirty-two feet, at the present time, above Watson's ferry, on the San Joaquin, or 179 feet above the sea; and Visalia is about 115 feet higher. Most of the vacant lands referred to in the beginning of this article are between these altitudes. There is, therefore, good reason for believing that artesian wells in this county may be made to yield an aggregate supply of 5,000 cubic feet per second, or possibly double that amount, without exhausting the supply.

There are still Government lands to be met with in nearly every portion of the valley, besides those I have already mentioned, which are subject to homestead and preëmption, and some can be found yet upon which the stately form of the valley oak is seen. Along the foothill there is a quantity of land known as "hogwallow," which is characterized by the presence of small mounds, about two or three feet high, and ten to thirty broad. They are of pretty uniform height, nearly circular, but rather longest in the direction of northwest and southeast. They are clearly not artificial, and their presence has puzzled nearly every one who has beheld them. Some have thought them to be the results of the last efforts of the waves of a retiring ocean; some have attributed them to the action of the wind; others have argued that they showed that a forest of giant trees had been uprooted and destroyed; while the great Humboldt seems to have regarded it as the result of a sort of local and superficial volcanic action. Without venturing an opinion myself, I will only remark that they are "somewhat peculiar." This class of lands have generally been rejected, because it would be somewhat unpleasant farming them with patent machinery. The soil is generally stony, however, and they may be rated among the best fruit lands of the county. People living at a distance, and desiring homes in the Tulare Valley, would be naturally desirous of knowing what the lumber resources of the region are. In reference to this matter, it may be mentioned in the start that probably more than one-half of all the "big trees," or *sequoea gigantea*, in the world are in Tulare County. Most of this timber is used in the manufacture of lumber, and is found to be very dura-

ble. Much lumber has been annually produced in the adjacent mountains for the last twenty-seven years. What is known as the Giant Forest, however, remains untouched and almost unexplored. This body of timber stands on what is known as the Marble Fork of the Kuweah River. There are a series of ridges, entirely within the pine belt, and constituting a district about ten miles square, are covered with a dense forest of sequoy, sugar pine, cedar, fir, spruce and yellow pine. Aside from the lumbering resources of this region the altitude is not so high but that a climate is met with more temperate than that of any of the Northern States east of the Rocky Mountains, and fruit, corn, alfalfa and vegetables may be grown successfully. To reach this forest from the present travelled road a new road would have to be opened along the side of a ridge, sparsely covered with post oak for a distance of ten miles. It is about twenty miles from the valley and forty from Visalia. Though the Giant Forest is the most compact body of timber in Tulare County, it is after all no very great proportion of it. In travelling through the foothills from north to south at the lower edge of the pine belt, we encounter eleven streams, which carry a flush millhead the whole year, and six of these streams have no settlement on them, nor is the land surveyed. They all point the way by which a road might reach a forest of pine, but by only five of them is the pine belt accessible by road or bridle travel.

On Kern River a thousand square miles have generally been looked upon as a barren desolation, but the altitude of many of the little valleys is enough of itself to show that stock could survive there all Winter without feed; and when we look at Switzerland, we are at once convinced that the mountain region of this stream is destined one day to sustain a hardy and thrifty population. But a road must be constructed over Greenhorn Mountain before this can occur.

Heretofore one of the great drawbacks to prosperity in the Tulare Valley has been the inertia (i. e., *laziness*) begotten of a pastoral life. The no-fence law brought with it an influx of energetic population, and has diffused new life into what was once a sluggish community. Up to 1873 we did not produce our own wheat or flour; and it was no uncommon thing, up to that time, for a hog drover on his way to Stockton to meet an ox-team freighting Chicago bacon for the Visalia market. One great need of the valley is a foundry. With all the saw-mills, grist-mills, quartz-mills and farming implements constantly needing new castings, it is quite a drawback to have to send by express to the city. This year Tulare County is expected to take her position as the banner wheat-producing county of the State; and it is confidently believed that the time is not far distant when she will outrival her sister counties in the production of silver and lead. A point near the centre of the broadest valley of the State, like Visalia, with such advantages and such a prospect, is certainly a favorable place to locate a foundry and machine-shop.

An article on the lands of the Tulare Valley could not be brought properly to a close without reference to the present condition of Tulare Lake. In 1868 this body of water outleted into the San Joaquin, as the result of the great freshet of that year. Since that time it has been gradually subsiding, partly owing to natural cause, and partly owing to the use of large quantities of the water of the streams for irrigation. The result is that the lake is now some twenty feet below high-water mark, and between these two margins some three hundred thousand acres of most beautiful land is exposed. An attempt has been made to survey some of these lands as swamp lands, but the field notes of the survey showed that in some cases the chain-bearers travelled for miles in heavy wheat stubble. Moreover, the law is clear about the character of lands laid dry by the retiring of a lake. These and other circumstances resulted in a re-examination of the survey, and there are hundreds taking up claims with the confident expectation that the even sections will be thrown open to homestead and preëmption. If any security can be given against future inundations these lands will rank amongst the best in the State.

In order to make Tulare Lake outlet into the San Joaquin at the present level, it would be necessary to cut a canal fifteen miles long and fourteen feet deep, and to make such a canal a quarantine against the overflow of the border counties it would need to be two or three hundred feet wide. It is, probably, too early yet to urge the construction of such a work, but it is bound to come, but, perhaps, not till a catastrophe has overtaken the new settlement now being founded, but when it is done, a country will be reclaimed capable of growing the bread for a million of people.

THE SHEEP INDUSTRY.

By ROBERT DUNCAN MILNE.

It is proposed in the following article to give a detailed but concise *resume* of the various salient features of the sheep-raising industry in this State, and to furnish such practical information as may be of value to emigrants from other States, or residents of our own, who propose embarking in this business. Sheep raising in this State is not what it was, this must be acknowledged. The fortunes which were made from fifteen to ten years ago are made no longer. The reasons for this lie in the contraction of pasture lands, through their becoming available and valuable for agriculture; in the deteriorated value of the sheep itself; in the fall in the price of wool. While ranges have become more contracted, flocks have been constantly increasing, and their increase has necessitated the driving of the surplus to other quarters, notably Nevada, Arizona and New Mexico. For the past ten years the stream of sheep immigration from California has been steady and on the increase. In order to present the reader with an epitome of the whole subject, the following topics will be discussed in their order: 1—Sheep and wool; their grades, values, etc. 2—Pasture lands; their location, advantages and values. 3—Economical questions; wages of help, cost of living, freightage. 4—Business aspects of the industry. 5—Summing up of the subject.

SHEEP AND WOOL.

There are only two classes of sheep which it will pay to raise in this or any other State—the wool-sheep and the mutton-sheep. This distinction is designedly made broad, inasmuch as either characteristic, carried to extremes, militates against the other. A breed of sheep may, of course, be raised by judicious crossing, which partakes of both characteristics, in a measure—take, for instance, a cross between the Southdown and Merino, or the Leicester and Merino—but in such a breed the staple of the wool will not be so long or so fine, nor the clip so heavy, as in the pure or fifteen-sixteenth Merino, nor will the mutton be so marketable, or the weight of the animal so great, as in the case of the Southdown proper, the best mutton-sheep that exists. The original California sheep is a lank, long-legged, wiry animal, without wool on its belly, and a merely nominal portion on its back and sides, but admirably adapted physically to withstand the exigencies of our seasons. It could subsist on the shortest possible rations, travel miles to water, and rear its lambs where its finer and more valuable congener would sink and starve to death. But these admirable characteristics were secured at the expense of the clip, the animal not shearing more than three or four pounds of wool. This breed, in its entirety, has almost entirely disappeared, as it would not pay to raise it, but, through successive intermixture with high-bred Merino rams, it at present forms the basis of the most serviceable flocks in the State. The pure Merino, whether French or Spanish, which will shear eight or ten pounds of wool twice a year, is too delicate an animal for our State. It cannot stand either scarcity of feed in Summer, or continuous wet weather in Winter, to both of which vicissitudes it is liable to be exposed. Like all fine-bred animals it has more trouble in parturition, and its progeny is more delicate and requires more care than a lower grade. The sheep best adapted for this country is a cross of, say three-fourths Merino and one-fourth Southdown or Leicester, or such fair ordinary breed as can be relied on for physical constitution, of which there is no lack anywhere. Selection should be made of such ordinary flocks as have a long, rather than a fine staple, and the best Merino rams, plenty of which can be secured at prices ranging from $30 to $75 a head, introduced. The most approved quality in wool is rather length of staple than extreme fineness of fibre, and such animals as shear from six to seven pounds are fair average and will pay the grower. The broad axiom may be laid down for this State that, on ordinary pastures, it will not pay to raise too fine stock. The principal and most successful sheep-owners rely upon introducing rams to average sheep, keeping, perhaps, one band of six or eight hundred fine ewes upon their best land. This is the course pursued on the various large ranches scattered over the State, which support from fifteen to thirty thousand head apiece. The small owner, if his land is level and produces rich grasses, and is well watered, may find it more profitable to confine himself to fine stock for the sake of the heavier clips and the profits accruing from the sale of rams, but on ordinary ranges he should keep to ordinary sheep. The price of sheep has fallen within the last few years, good three-parts Merino being now obtainable at from $2 75 to $3 per head, while mutton sheep range some 20 per cent lower. Values fluctuate with good or bad seasons, and occasionally much better bargains are obtainable. The price of wool having fallen all the way from 75 to 25 per cent within the last decade, has necessarily reduced the value of stock.

LOCATION AND VALUE OF PASTURES.

Sheep are raised in all counties of the State, not excepting even the purely agricultural ones lying along the San Joaquin and Sacramento rivers, though their withdrawal from the latter is merely a question of time and land values. It will at once be apparent that the northern counties, from Mendocino to Humboldt, where rains are steadier and feed fresher and more abundant, must command higher prices for pasturage than the counties south of the Bay, where long, hot, dusty Summers prevail, and rains are uncertain. The northern counties are well watered, abounding in streams and natural springs. The southern, on the other hand, are badly watered, and it, therefore, becomes necessary to eat up salt pastures as lie too far from water in the Spring and early Summer while the feed is green, then drive the sheep into the cañons of the Sierra Nevada, keeping them there till snow comes on, when they are driven back to the plains. Such pastures as have springs upon them, or where water can be raised by pumping with wind or other power, are scrupulously reserved to the last as a precaution in case of prolonged drouth. In good seasons the pastures of the plains abound with such rich grasses as the *alfilaria* (or "filaree," as it is com-

monly called), and bur-clover. These, when dry, are admirably adapted for fattening sheep, the animals licking the seeds and natural hay off the surface of the parched earth, but water is a vital necessity, and vast tracts of land are robbed of its utility by its lack. Within the last half dozen years, however, the southern country—notably Los Angeles County—has become dotted with artesian wells, but then, as a set off, such land immediately becomes too valuable for agriculture or fruit-raising to warrant its being relegated to the raising of sheep. As values will always adjust themselves to advantages, a glance at the figures for which ranges are now held will be instructive. Good ranges in Mendocino and Humboldt Counties, and their neighborhoods, command from $4 to $5 per acre, while in such counties as San Luis Obispo, Fresno, Tulare, Kern, Los Angeles and San Bernardino they will not bring more than $2 50 per acre, or a rental of from 10 to 15 cents. To demonstrate that pasture lands have been, in times past, held at inflated prices, we may cite the instance of a large ranch near Gilroy whose value has fallen, within the last ten years, from $70,000 to $40,000. There are still some out-of-the-way cañons and nooks along creeks in the foothills of the Sierra Nevada and Coast Range where small holders may pasture bands of, say a thousand head of sheep, under difficulties. Such holdings are usually occupied by French and Basque shepherds, many of whom have enriched themselves by frugality and perseverence. The question has been raised why limited bands of fine sheep might not be raised within fenced fields planted with alfalfa or Chilian clover. This grass is so luxuriant that, where the necessary irrigation facilities exist, heavy crops can be raised annually, and the care of sheep, which is one of the principal items of expenditure, thus reduced to a minimum.

EXPENDITURES AND PROFITS.

The paramount question in the prosecution of every industry is, Will it pay? This is what the individual making the venture wishes to know. We shall, therefore, dissect this subject by items and categorically. Take, for instance, the owner of a band of 1,000 head of sheep, and calculate his annual estimated profits and expenditure. We shall suppose his sheep are of good grade; that they have cost him $2 75 per head; that they shear nine pounds of wool per annum; and that he rates his land in a southern county at 15 cents an acre, handy for transport to this city by sea. The following will be a summary of expenditures and profits fairly computed:

EXPENDITURE PER ANNUM.

Wages of shepherd at $25 per month	$300
Extra help during lambing	50
Maintenance of shepherd at $8 per month	96
Rent of 1,500 acres at 15 cents per acre	225
Shearing at 6 cents per head (twice)	120
Expenses during shearing, sacking, teaming, etc.	40
Freight of 8,000 lbs wool at $20 per ton	160
Total	$991

PROFITS PER ANNUM.

8,000 lbs wool at 13 cents per lb	$1,040
750 lambs, estimated at $1 per head	750
Total	$1,790

It will be seen from the foregoing table that the profits accruing from the wool are rather more than the expenses of keeping the sheep, and that the grower's actual profit lies in his increase. This formula is a pretty constant one in average years, and is generally recognized by sheep men as a fair one. Lambs, after weaning, may be roundly estimated as worth a dollar a head. Had the rent been, say, 25 cents per acre in a northern county, the wool would have been worth more than 13 cents per pounds—in fact, as high as 18 or 20 cents—by reason of its freedom from clover burrs and dirt, and the owner would have been free from the extra expense of driving to the mountains, or renting fresh range, to which the southern sheep-owner is always liable. During the following year the owner would need to rent fresh range for his yearlings. He could then either continue to increase his flock or sell his wethers for mutton, and mix his yearling ewes with his old band. But these are matters of experience and not to be discussed in a statistical article. A common way of keeping sheep without the necessity of personal care is to entrust them to some reliable party for a consideration. This party takes the sheep "on shares," as it is called, pays all the expenses of their maintenance, and receives in return half the wool and half the increase. If the party taking the sheep "on shares" is industrious, knows his business, and herds his band upon some Government land where he pays no rent, he can make all his immediate expenses, and soon have a band of his own, while the owner is meanwhile receiving a good interest upon his original outlay.

GENERAL REMARKS.

Within the past few years a new industry has become more developed in this city in connection with the sheep business, viz., that of scouring. Until lately this business was confined to three houses; now it engages no less than twelve. The practical object of scouring the clip in San Francisco is to save the extra freight on the grease and sand in shipping East. It has now become a matter of moment for growers to consider whether it pays better to scour wool here or to ship it East with all its impurities. This is purely a matter lying between the grower and the railroad companies. Should the latter increase their rates of transportation, or even preserve them at the present figure, it would materially alter the status of the scouring business. This is for growers to consider. Inland freights are measured and scheduled so as to be within the reach of everybody. Of course, points of embarcation on the sea—the coast counties in fact—have considerable pull, in point of freight, over such as have merely railroad transit.

It may be interesting, in this connection, to give a concise summary of the wool business in the last twenty-six years. The clip for 1854 weighed 175,000 pounds; for 1860, 3,055,325 pounds; for 1870, 20,072,660 pounds; for 1880, 46,074,154 pounds; for the past year, 1881.43,204,769 pounds; the highest price and weight having been reached in 1876, which clipped 56,550,970 pounds. Then came the year of drouth, which gave a set-back to growers.

PLACER COUNTY.

By W. B. LARDNER.

By referring to the map of California, the reader will observe that Placer County has a northeast and southwest direction, being from the Nevada State line on the east to the Sutter County line on the west, about 100 miles, while the width of the county just above Auburn, between the Bear and American rivers, is very narrow, only about eight miles. Above Auburn, the county widens out into the two divides, lying between the Bear River and the Middle Fork of the American River. These are known as the Dutch Flat, or Railroad Divide, and the Forest Hill Divide.

The southwest part of the county is more regular in shape than the part just described, being bounded on the east by El Dorado County, on the south by Sacramento County, on the west by Sutter County, and on the north by Nevada County. This section contains the foothill and agricultural land. In shape it is nearly a parallelogram, the southwest two-thirds being on the plains proper, and the northeast one-third being the foothill and fruit district.

In describing the county, I shall adhere to the division as just stated. That part to the south and west of an imaginary line drawn from the Bear to the American River, near Auburn, constituting the horticultural and agricultural section, and the balance of the county, or the two "divides," the mining and lumbering section.

The farming section proper consists of the average plain land, much of it being of a granite formation, on which crops of wheat, oats, barley, and hay are raised, varying in quantity and quality with the amount of moisture during the season. The successful farmer, as a rule, Summerfallows one-half his land and crops the other half, thereby prolonging the fertility of the soil and making crops more certain by getting the seeding done in proper season.

Along the Bear River there are complaints about the slickens or debris question, but the amount of land injured or endangered is very small, in proportion to that of other valley counties bordering on the rivers.

The California and Oregon Railroad runs north and south through this section from Roseville to Lincoln and Sheridan, and then across the Bear River, thus furnishing easy transportation for the grain, stock and wool produced in this section.

There are but few large "grants" in Placer County, what we have being in the southern part, and when they are sold in reasonably large tracts for single farms we will have as thrifty and contented a farming population as any in the State.

Beginning at Rocklin and circling around to the north of Lincoln and Sheridan up to the Bear River, and from Rocklin southeast towards Folsom on the American River, we have the beginning of our foot-hill or fruit section. This section is composed of rolling hills traversed by ravines, and up to within two miles of Auburn is of a granite formation.

This part of our county is now rapidly filling up with settlers, who are turning their attention to the raising of fruits and berries.

Here the proportion of land for successful operations is much different than in the farming section proper—there, from 100 to 500 acres is considered the proper quantity; here, those having from five to fifty acres meet with the most success. Most of the Government land is taken in this section, but much valuable land can be had from the Railroad Company at $5 per acre. The foothills of this county are bound to be filled with a thrifty, enlightened population. I will hereafter speak more particularly of the adaptability of the foothills for fruit and berry culture.

From a short distance below Auburn on up the mountains we find the red soil prevailing, on which the finest of fruit is raised equally with the granite soil, but as we reach a higher altitude small fruits drop out and the apple, pear and cherry come to a higher state of perfection.

The two "divides" of our county can properly be called the hydraulic mining and timber sections.

On the Dutch Flat divide we find the most extensive washings of this description, and the most extensive lumber mills. This is accounted for only by reason of the abundance of water and the facilities for shipping lumber—for the divide lying between the middle and north forks of the American River has exhaustless gravel banks and extensive forests of pine, spruce, and cedar fit for lumber, and those sources of wealth only await the introduction of more water and better transporting facilities to make themselves felt in the channels of trade.

Part of the eastern boundary of the county is the famed Lake Tahoe, on which are several

steamers and water-craft, which are used for the purpose of carrying the United States mail, for pleasure travel, and for towing logs across the Lake to the Nevada side.

So, in reality, the county extends from an altitude of about 40 feet on the plains to that of 7,000 at the Summit, and with corresponding degrees of climate, soil, adaptability for farming, fruit culture, and for the choice of invalids.

Reversing the order now, and coming down the mountain, I will note more particulary objects of interest to strangers, and items of material wealth and pride to our citizens:

First, in reference to our railroads, we have a little less than 100 miles of road in the county—the California and Oregon running nearly north from Roseville through the farming section; the Central Pacific running in a northeasterly direction up the Dutch Flat divide, and the Colfax and Nevada narrow-gauge, running from Colfax to the Bear River, the east boundary line of Nevada County. Many of our people have a chronic habit of abusing the railroad, but there is one period of the year when they are quiet, and that is when the railroads come up with their checks for one-third of our taxes. I have not the exact figures before me, but it averages about $28,000 per year. It is by reason of the quick delivery of small fruits that the foot-hill products are so favorably known. In the Spring our strawberries and raspberries are put on the cars fresh from the vines, and in a few hours are laid down in San Francisco or at Virginia City, where they command the highest market prices.

The summer resorts of Placer county are becoming more popular every year.

LAKE TAHOE

Is the chief of these, and by many considered the first in the State. This fashionable and healthful resort is too well known to need any comment, and if the narrow-gauge road should be built from Truckee to the Lake, as now contemplated, the Lake could be visited at all seasons of the year.

SODA SPRINGS

Is another pleasant resort for tourists, while numerous clear, crystal lakes invite health and pleasure.

The custom has grown up recently for pleasure seekers and invalids from around the "Bay" to start up the mountains as early as March, stop for two or three months at Auburn, the county seat, and as the weather becomes warmer, proceed higher up to Dutch Flat, Alta, Blue Cañon and Summit, and toward Fall reverse the order and move toward their homes.

For health and convenience to pleasure-seekers, I do not think Placer County can be surpassed.

But now for something more practical. The lumbering interest is carried on to a great extent in the higher Sierras. In Revised District No. 2, which includes the Dutch Flat "divide" down as far as Auburn, there are twelve saw mills and three shingle mills. The Towle Bros. carry on the most extensive lumbering interests in the county. They have several mills, the largest having a capacity of 50,000 feet in twenty-four hours. Their works are very extensive, the lumber yards, store-houses and box factory being located a short distance above Alta. From there narrow-gauge cars and a five-ton engine carry you some ten miles to the mills. Just before reaching the mills, a stationary engine, on a high ridge, elevates you up 1,300 feet, and lets you down on the other side 2,400 feet, from whence another four-ton engine and narrow-gauge cars take you three miles farther down toward Bear River, over astonishing grades and curves. We are informed these gentlemen intend to bridge Bear River, and put a third engine and cars on the Nevada side for the purpose of hauling the immense logs to their mills. The work of chopping, hauling the logs to the track, loading, and sawing into lumber, seems a herculean task to the stranger. This is the largest lumbering company in the district, and taken in connection with the other enterprising lumbermen of the county, the aggregate amount shipped to Nevada and the counties of this State is immense.

All told, there are three box factories in the county. In District No. 3, which includes the Forest Hill Divide, there are six saw mills, the largest having a capacity of 10,000 feet and the smallest 5,000 feet.

The two "divides" are distinctively hydraulic sections, and the works are in many instances very extensive, notably so around Dutch Flat, Gold Run, Iowa Hill, Forest Hill, Barn and Michigan Bluff. In Gold Run a pressure of 400 feet is used in some of the claims. The number of miles of ditches used is many thousand. Drift mining is also extensively carried on, two of the most notable being on the Forest Hill divide, one at Damascus, and the other at Sunny South—the tunnel at the first mentioned place being in the hill over a mile. Most of the quartz mining is carried on in the foot hill section, near the towns of Auburn, Ophir, New Castle and Penryn.

Numerous ledges are being prospected, and, in fact, prospecting is carried on more lively than for many years; and, when something more than surface work is done, abundant returns may be expected. Four new quartz mills will be erected in this section in the Spring. There are now in the county twelve mills, aggregating some 130 stamps.

The fruit and berry interest shall next claim our attention—and in my opinion this is to be in the future the most permanent interest of the county. Mines may work out, quartz ledges pinch out, and the soil of the plains "peter out," from over-work, but the innumerable foothills can furnish homes and occupation to the fruit-raiser for all time. Of course, sudden fortunes are not made as in the mines, but permanent homes are. The Assessor finds, each year, on his rounds, a little more value than the year before.

The shipments of strawberries, raspberries, blackberries, peaches, grapes, apples, pears, quinces, tomatoes, and in fact all kinds of fruits and vegetables, from the towns of Rocklin, Penryn, New Castle and Auburn, are immense, New Castle doing by far the largest business, it being the outlet for the prosperous Ophir fruit valley.

There are two fruit dryers in the county, and two shipping associations, the dryers, so far, not doing much, because the supply of good produce has not been up to the demand. The early and late markets are found in San Francisco, the mid-summer ones over the mountains, in the State of Nevada and the Territories.

The culture of the orange, lemon and lime is making gigantic strides from Auburn to Penryn. Many thousands were planted last season, and many thousands more will be.

The orange ripens from four to six weeks earlier here than at Los Angeles, and is thinner-skinned and equally good in flavor.

Our most successful orchardists feel certain that the success of the orange is assured, and do not hesitate to engage in the culture to the extent of their means.

The Bear River ditches and tributaries are important factors in the prosperity of the foot hills. The water is taken out of Bear River near Colfax, and is distributed like an open fan over the underlying hills. The main ditches and branches aggregate 500 miles in extent. The proprietor has stimulated the growth of the semi-tropics by offering free water from 1877 to 1882, to those planting the orange or lemon in groves of 50 and more, and also free water for the first year to those starting new places. The low valleys were once thought to be the proper places for fruits and berries, but experience has taught that the highest hills are the most suitable, freer from frost and earlier for the markets. Consequently, on the highest points to where the water can be piped or flumed, is where the little ranches are located.

I am informed that Mr. Washburn, the Bear River Ditch Superintendent, has paid a visit to the southern part of the State for the purpose of securing thrifty orange trees, and proposes to plant for the company the largest orange orchard in the State, near the town of Rocklin.

When the supply of choice fruit can overstock the market the fruit-dryers can be put into operation, and dried fruits and raisins can be brought into the market cheap enough to stop part of our import trade in those articles

The wine interest is of considerable importance, and good judges say the flavor of the wine made from the foothill grape is superior to that made from the valley grape. The grape-raiser is always sure of from $10 to $15 per ton for his surplus grapes at the neighboring wine cellars. The number of acres planted to wine grapes is a very small per cent of those that could be utilized from the base of our foothills to an altitude of Colfax.

The foothill farmers are, as a rule, branching out, and, as it were, are insuring themselves against a failure of any one crop. We will suppose a peach orchard is a special dependence; subordinate to this will be berries, pears, etc., and perhaps a fine hillside will be covered with alfalfa, on which can be cut four crops of hay per year, or a few choice hogs can be pastured, or cows, or bees.

In the valley the average farming of the plain is carried on. Some of the bottom land is very rich, and apparently exhaustless in fertility. The quarrying and dressing of granite is an important item of wealth to Placer County, and the curious inquirer may see many samples of the dressed rock in the public buildings and works of California. Among them may be named the base of the State Capitol, U. S. Mint, San Francisco, Dry Dock at Mare Island, and in fact many of the handsomest buildings in San Francisco were constructed from Penryn and Rocklin granite. The most expensive granite works of the county are carried on by Mr. Griffith, he having quarries both at Penryn and Rocklin. At Penryn, in connection with the quarrying and cutting departments, is a large polishing mill, from which is turned out columns, monuments and all kinds of cemetery work. Mr. Griffith, in the busiest season, employs as many as 150 men.

At Pino Mr. Turner carries on quite extensive works; also other parties whose names I do not recall, but all told, the shipments aggregate many tons. At Rocklin the granite is not so dark as at Penryn, but it is easier worked. In busy times the Taylor Bros., Mr. Hathaway, and other quarrymen, turn out immense quantities of fine building stone, and the business of the quarries, taken in connection with the railroad shops and roundhouse located here, make Rocklin a lively town. At Roseville there are several fine grain warehouses. In the county there are eight, and as the farmers become better able to hold their grain for a rise, we may expect more to be built. There is a large flouring mill in operation at Sheridan, and one is soon to be built at Roseville. At Lincoln there is a coal mine, which yields very fair coal. At the same place are also located the pottery works of Gladding, McBean & Co. The works are situated in the edge of town, while the immense clay bank is located only a mile away on land owned by Towle Bros. The clay is in a hill and easily extracted, being pronounced of the best quality, for which a small royalty per load is paid. The works are extensive, employing 25 or 30 hands. All sizes of drainage pipe are made; also substantial chimney flues and caps; fancy urns, flower-pots, and domestic ware of all kinds are moulded and burnt in the most approved manner. It is an industry that our county may well feel proud of.

Our Assessor's books show a small amount of property for a county that is a few square miles larger than the State of Rhode Island, to wit, only $5,642,932. This is evidently too low by half, as in 1872 the roll showed over $8,000,000, and the wealth of the county has materially increased since then. Our land is divided, for the purpose of taxation, into four grades, and the average valuation per acre for the whole county is only $2 70. Our tax for the year 1879 was apportioned as follows: State Fund, 62½ cents; County General Fund, 47 cents; Hospital Fund, 18¾ cents; County School Fund, 12 cents; General Road Fund, 10 cents. Total on the $100, $1 50.

Our County Hospital is a model for completeness. It can accommodate 70 patients. The average attendance is 55¾. Many of these properly belong to other counties. Very often railway accidents will send a patient there for treatment, the sufferer not being an employe of the company. An occasional sick tramp is cared for during illness, and as long afterward as he can feign sickness and enjoy his comfortable quarters. Each patient costs the county, including all expenses, $3 45 per week. The buildings cost about $15,000, and the 60 acres of land is worth $4,000 more. In a jocular way, our jail and hospital are called the two best boarding houses of the county. Indigent women and children are boarded at $5 per week till friends can be found who will care for them. These statements are not made to invite impecunious invalids or tramps, but simply to show that "there is nothin' mean" about our taxpayers. Tramps and vagrants are "game" for our local officers, and they had better keep away if they do not like to saw county wood and assist in fixing our streets, with ankle-bracelets and seven-pounders for adornments.

A few articles taken at random from the assessment rolls show as follows: American horses, 1,286; half breed, 222; Spanish, 843; colts, 346; cows (American) 1,837; mixed, 380; Spanish, 24; calves, 1,095; stock cattle, 993; beef cattle, 256; goats, 7,668; Cashmere, 675; sheep (imported) 384; common, 69,593; wine, 10,850 gallons. Placer County is used by outside drovers as a common pasture ground, and during the Summer thousands of horses, cattle and sheep are kept in the mountains. In townships one and ten in the southern part of the county, they have a special Act passed whereby they are not compelled to fence against stock.

There are forty-seven school districts and fifty-seven schools in the county, that of Auburn, with four departments, being the largest. The last census gives 2,904 school children of proper age. The school houses, lots, and furniture are valued at $52,820. The sessions for the county average 7.19 months. The following analysis will show what we are made of physically, politically, nationally, etc.:

FACTS AND FIGURES FROM THE GREAT REGISTER OF PLACER COUNTY,

W. B. Lardner, Esq., District Attorney-elect, has been to the trouble to make a partial analysis of Placer County's Great Register, compiled during the present year, and has generously allowed us the use of his findings. The matter, while no doubt of curious interest to all, will afford a subject for much reflection and study to those who interest themselves in ethnological subjects. The synopsis, on the whole, shows a population of good material, a foundation to build on that promises a sturdy race for the future. The total number registered is 3,332. These, in point of nationality, are divided as follows:

Naturalized in the different United States and State Courts	1,003
Citizens by virtue of their father's naturalizatian..	113
Born of American parents temporarily abroad.....	4
Native Californians, mostly young Americans from 21 to 29 years of age—few of Spanish descent.....	154
Born in the Southern States.....	411
Born in the Northern States (exclusive of California).....	1,592
Natives of the District of Columbia and the Territories; citizens by virtue of treaty with Mexico, and by honorable discharge from the army.....	55
Total.....	3,332
Number of foreigners naturalized in Placer.....	489
Number naturalized in other counties of the State	304
Number naturalized in other States.....	210
Total.....	1,003

The average age of the first ten after the firs fifty of each of the first ten letters of the alphabet is 45.27 years; average age of the last ten of each of the last ten letters of the alphabet is 44.93, giving a reasonably correct average of the age of the whole 3,352 of 45.11 years. The young men 21 years of age who are on this register for the first time number 57. There are just 60 over 70 years of age, the oldest being Mr. Noble Johnson, of Lincoln, whose age is given at 82. The best represented Northern States are New York, Maine

and Ohio; the best represented Southern States are Missouri, Kentucky and Virginia. The total average vote from this registration at the last election was 2,800, divided on an average about as follows: Republican, 1,165; Democratic and N. C., 840; Workingmen, 776. This would leave the total number not voting 532, which is too large a percentage to charge to incivism in a county like ours. The fact that many live remote from voting places may account for the lightness of the vote, rather than the indisposition to exercise a voice in the affairs of government. The further fact that these 532 took the pains to register shows that they are not so indifferent as the comparative strength of the vote would indicate."

Placer County was organized by Act of the Legislature, approved April 25, 1851. Before that time Auburn was the county-seat of Sutter County, or rather the original Sutter County included most of what is now Placer.

There are 11 townships (political) and 34 voting precincts, Auburn being the largest, with 341 votes at the September election, and Martis Valley the smallest, with only 4 votes. In the county there are 26 Post Offices, and 18 Wells, Fargo & Co's Express offices. The express business transacted in shipments from the Auburn office aggregated as follows: Currency and gold notes, $18,730 95; gold coin, $129,887 50; gold dust, $16,428 45; gold coin, $39,013 95; total for 1879, $357,890 85. The office at Dutch Flat and the other mining towns, without doubt, go far beyond this showing.

The people are kept posted on local matters by four weekly papers—the *Argus*, *Herald* (one of the oldest papers in the State), *Forum*, and the *Mountain Echo*. The two first are published at Auburn, the next at Dutch Flat, the last at Rocklin.

As each town has a history peculiarly its own, I shall not attempt to describe them. Suffice to say, that most of them have a fresh, thrifty and progressive appearance.

The population of the county seat is about 1,200 and increasing fast.

All told, there are forty benevolent orders and societies throughout the county.

The population of the county is about 15,000, and on the increase. In 1872-3 the population and enterprise were at the lowest ebb. At that time a gradual change began. Old ideas were beginning to give way to new ones. Property values began to rise. The middle section has advanced rapidly in wealth and population, thereby cementing the extremes—mining and farming.

As a rule, our people are enthusiastic about old Placer. They feel their importance in the State, always taking an active part in its affairs. Over 1,000 of our people were at the Grant reception in Sacramento, and our banner in that procession was the only one followed by a distinctive body, representing a county from abroad.

We feel that we have a flourishing population, and know there is room for plenty more, provided they are of the right kind. We want immigration, and a kind that will stay and not rush off to Oakland and San Francisco after they have made a competency.

MODOC COUNTY.

By Prof. G. K. GODFREY.

Modoc County was created by an Act of the Legislature in 1874 out of the eastern portion of Siskiyou County, and derived its name from the Indian tribe of Modocs. It is the extreme northeast county of this State, with Oregon for its north boundary. It extends eastward from the celebrated Modoc "lava bed," south of Tule Lake, to the Nevada State line, and is nearly one hundred miles in length and sixty miles in width. The topography of the county is a succession of mountain ranges and valleys, and is principally drained by Pitt River, which has its outlet in the Bay of San Francisco.

THE LAVA BED

Section, at the northwest corner of the county, is a succession of gulches and crevasses, which range from a few feet to one hundred feet in width, and many of them are one hundred feet deep; some have subterranean passages, which lead for miles under the rocks. This broken country extends in a belt eastward to Goose Lake. This lava section of the county has no arable lands, and it is fit only for grazing purposes. It is a vast plain of table land, and in some places it is sparsely covered with juniper.

BIG VALLEY.

Situated at the southwest corner of the county, is about twenty-five miles in length, and about the same in width. This valley is watered by Pitt River and numerous creeks. The soil of this valley is as variable as is the formation of the county itself, and embraces all variations—the deep, rich loam, the dark red clay, fine and coarse gravel, decomposed granite, lime, chalk and marl formations. Stone coal has been found on Pitt River, north of Big Valley. This valley has been settled only eleven years, and it now contains a population of about 800 souls. Adin is a prosperous town, located on Ash Creek, near the east side of the valley. It is making permanent progress in the erection of substantial buildings, and will in time become a prosperous village. Here the Adin *Hawkeye*, at Democratic paper, is published.

Surrounding Big Valley are Juniper Creek, Willow Creek, Butte Creek, Ash Creek and Hot Creek, with their rich bottom lands converted into farms. A majority of the settlers in these valleys are engaged in stock-raising. Grain and vegetables are grown here in sufficient quantities to supply the market. These valleys are subject to early and late frosts, which run in belts through the lowlands and along water courses. The mountains on the south and west sides of the Big Valley are covered with a dense growth of oak, cedar and pine forests, sufficient to supply the inhabitants for all coming time.

The country east of Big Valley consists of long oval hills and table lands, stretching away to what is known as the Madaline Plains. These hills and table lands are interspersed with small valleys, which are adapted for grazing purposes. These small valleys are preferred by settlers as locations, on account of the proximity of timber, and also because of the adjacent hills, which constitute a range for stock of unequalled excellence. These hills are covered to their very summits with a thick growth of bunch grass. Hence stock-raisers regard locations in these narrow valleys as extremely desirable. To the north of Adin a succession of small valleys extend to Pitt River. There is a good wagon road extending from Adin through these valleys some twenty miles, over a low divide to the lower end of Hot Spring Valley.

HOT SPRING VALLEY

Is noted for its large boiling spring, which throws up the water five or six feet high. This valley is about fifty miles in length, by six miles in width. As you pass along this valley your attention is directed to a wall of perpendicular rock, on the north side, nearly a hundred feet height, and extending the whole length of the valley to Goose

Lake, with here and there a cañon cutting through the rocks as they open into the valley from the north. To the north is a vast stretch of flat table land, known as the Devil's Garden, on account of its surface being literally strewn with scoria and volcanic rock of various dimensions. The arable lands of this valley are confined to the river and creek bottoms putting into the valley from the north and south. Vegetables and grain are not always a sure crop along the river bottoms on account of the early and late frosts, though the valleys and surrounding hills are not surpassed for grazing purposes.

The seat of justice of Modoc County is Alturas, located near the east end of Hot Spring Valley, and at the confluence of the north and south forks of Pitt River. The south fork of Pitt River runs north, and the Goose Lake fork due south, and both forks unite at Alturas and present a fine location for the county government. Alturas has a population of about two hundred souls. It supports three large stores and one large and commodious hotel for the accommodation of the public. A weekly paper, the Modoc *Independent Republican*, is published here by W. F. Edwards. Alturas is in a flourishing condition, and is improving rapidly. Many tasteful residences adorn the place. On account of its being central and easily accessible from all parts of the county, it is deemed to have a promising future.

The south fork of Pitt River heads in Eagle Lake, near the south end of the Warner Range of Mountains, and along its sluggish waters large tracts of swamp land are covered with tule, and are unreclaimed.

South Fork Valley is well watered by creeks, flowing down westwardly from the summit. The stage road to Reno passes up this valley and across the Madaline plains to Susanville.

GOOSE LAKE VALLEY,

Lying on the east side of the lake, is exceedingly fertile, and is well watered by numerous creeks and ravines, furnishing bountiful irrigation, and the mountains on the east, near the valley, are heavily timbered with cedar and pine; therefore wood is plenty and all kinds of lumber good and cheap—$15 to $20 per 1,000 feet.

Goose Lake and its surroundings is one of the most beautiful and fertile countries on the face of the globe. It abounds in bunch grass and other choice grasses; and therefore the range is extensive and the cattle keep for all the year round.

Crops are produced on the farms with little labor and most bountiful returns. Wheat, barley, oats, corn and vegetables grow in abundance.

Large and delicious wild plums are found in profusion around the lake and on the hillsides. These plums are of two varieties, red and yellow, as large as walnuts, and their flavor is delicious.

SURPRISE VALLEY

Is divided from Goose Lake and Hot Springs Valley by the Warner Range of Mountains, which averages some twelve miles in width, and extending north and south about 100 miles.

This valley was settled in the month of June, 1864, by a small party of pioneers in search of a fertile region in which to make a home for themselves and families.

Within two years the valley had but few accessions, was sparsely settled, and the Indians rendered it dangerous in the extreme for a small settlement. At this time the Government established Fort Bidwell, at the north end of the valley, when the population increased and they commenced building and fencing and tilling the soil, and found a market for their produce at the fort. This valley is about seventy-five miles in length and averages about twelve miles in width.

There are three wagon roads passing over low divides along the range from Surprise Valley to Hot Spring Valley and Goose Lake, and also a good wagon road extending from Reno through this valley to Fort Warner, in Oregon.

There is a chain of three beautiful lakes on the east side of the valley, extending nearly the whole length of the valley, with a width of from two to four miles. The south two are united by a narrow strait, and the waters of the middle lake flow through the strait into the south lake. The north or upper lake is apparently a few feet the highest and largest, and between this and the middle lake there is a space of about three miles of sandy desert, covered with grass and sage brush, such as found in Nevada. When Peter Lassen, the old pioneer, passed through this valley in 1851, guiding an emigrant train from Humboldt through to his ranch on Deer Creek, near the head of the Sacramento Valley, these three lakes were dry, and the emigrants passed dryshod over the bed of the north lake. During the last three Summers these lakes became dry by evaporation.

Last Fall large quantities of second quality salt was gathered up from the dry bed of the middle lake.

The waters of these lakes are impregnated with alkali, borax and salt, notwithstanding the large amount of pure water annually running into them from the mountains. Neither they nor the streams flowing into them contain fish of any description.

The farming lands lie along the west side of these lakes, adjacent to the mountains, where streams of cold pure water are seen running down to the lakes every two or three miles, the whole length of the valley, for all purposes for irrigation and machinery; and upon some of which are now in operation four saw-mills and two large flouring mills.

Timber, such as pine, cedar, laurel, juniper and tamarack, is in abundance on the creeks in the mountains.

On the east side of the valley, extending to Humboldt County and the Owyhee Mountains, the country is mountainous and barren of timber, except on the hillrops and in the ravines.

Surprise Valley has been settled by whites sixteen years, during which time its inhabitants have experienced some ups and downs, yet on the whole it has made steady progress. Within the past few years many improvements have been made in the way of fencing and permanent house building, and during the past year times have never been better than in Surprise Valley.

Surprise Valley supports four towns of moderate size. At the lower end Eagleville is located, on Eagle Creek, in a fine farming community. This is the smallest of the four villages.

Sixteen miles north a d in the central portion of the valley, where the county road passes over the low mountain divide to Alturas, is located the growing town of Cedarville. This village is supported by a rich and fertile neighborhood, and is by no means deficient in a business point of view, as it carries over half the trade of the valley.

To the north, ten miles, Lake City is located on Mill Creek, near the upper lake shore. This village is surrounded by a long stretch of meadow land which cannot be surpassed for productiveness.

Sixteen miles further on, at the head of the valley, is situated Fort Bidwell. Fort Bidwell is splendidly located on Mount Bidwell Creek, at the extreme northwest end of the valley, upon a Government Reservation a mile square. It consists of large and commodious frame buildings, so as to nearly inclose a fine parade ground of about one hundred yards square.

A few hundred yards to the east, and off the reservation, is the town of Bidwell, with its usual public buildings, and which has about an equal portion of population with Cedarville to draw public patronage. Fort Bidwell has been a great aid to the settlers of this valley in consuming the produce raised and protecting them from Indian depredations. The population of Surprise Valley will approximate 3,000.

All the goods and merchandise which supply this valley are hauled in wagons from Reno, 175 miles distance. With the increase of population the times demand quicker transportation. A bright and prosperous future is in store for this county, which ere long will be brought out of its chrysalis state. The Winnemucca and Oregon Railroad survey passing through this valley made three years ago was pronounced practicable, and I believe it is the design of the Central Pacific

Railroad Company to commence the construction of this railroad as soon as the Southern Pacific Railroad is completed.

From the location of Modoc County some are led to suppose that it has no natural advantages nor facilities of communication with the outer world. We are two days travel by stage and railroad in reaching San Francisco. This county is well provided with good mail facilities. A daily line of stages are running from Reno through Surprise Valley to Fort Blawell, connecting with the Reading and Alturas daily mail, leading into Oregon and Idaho Territory.

RESOURCES AND ADVANTAGES.

Modoc County is noted for its fertile valleys, its extensive grazing facilities, and her enterprising citizens. A belt of farming land extends from the extreme northeast corner of Surprise Valley down to the south end, in Lassen County, and is settled up in neighborhoods the whole distance. Good frame school houses have been built in each neighborhood to educate the children for future usefulness. The school system of this county demands some attention. The county is divided into twenty-two school districts. The total number of children returned by the last census between five and seventeen years of age, is 1,086. Efficient teachers are provided for their education. The public school system affords entirely the means of education for the children of the county.

We have no High Schools nor academies of learning in which to train our children for the respective professions, and must, therefore, rely upon the State Normal School and the University. We need County Normal Schools, and then compel every teacher to take a course of instruction in these schools before they are allowed to be employed as teachers in our public schools. Then we will have thorough and competent teachers to educate our children.

Churches have been organized in various parts of the valley, and congregations assemble every Sabbath to hear Methodist, Christian, and Unitarian preaching.

The farmers are contented to live here, feeling happy, and are prosperous.

On the whole, the valley may be considered in a prosperous and thriving condition, posessing a soil rich beyond comparison, yielding bounteous returns to the husbandman in grain and vegetables and his stock of various kinds, such as sheep, hogs, cattle and horses. The finest pasture covers the undulating slopes of the mountains, while an abundance of wild grass, such as clover and red top, bordering the lakes and large streams, afford the most nutritious hay. Mountain streams every few miles flow down from the summit of the Warner Range into the lakes, from whose pure, cold and limpid waters there can always be had a sufficiency for irrigating purposes.

Living is cheap in Surprise, as everybody raises just what they choose with perfect ease and facility. Wheat, barley, oats, corn, rye and vegetables grow luxuriantly, wheat and barley yielding sixty and seventy bushels to the acre, and the crops never failing by reason of the great irrigating facilities. Farmers raising grain, vegetables and hay find a ready market at Fort Bidwell and among the stock raisers in the small valleys surrounding Surprise. There is a home demand for all our produce, and at better prices than are obtained in either Sacramento or San Francisco.

Dairying and stock raising are carried on extensively. The dairy interest in this valley is a large one, and in the main is profitable, and the butter and cheese made finds a ready market in Nevada.

But the stock-raising business is still better. It is a permanent interest not only in this valley, but in all parts of the county, consisting of cattle, horses, mules, hogs and sheep. Stock raising will be successfully pursued for years to come. Beef cattle are bought and driven to Redding and Reno for the Sacramento and San Francisco markets.

The climate of Surprise is healthful exceeding description. The atmosphere is cool and bracing during the Summer months, with a gentle breeze springing up nearly every afternoon.

Few deaths have occurred in this valley since it was settled.

Snow seldom falls over a foot here, except in the mountains, and what few inches fall in the valley does not last long. Stock is seldom fed in the Winter.

Fruit-growing may be considered in its infancy in this county, and so far as our people have experimented, the soil and climate, growth and maturity of apples, peaches, pears, plums and cherries, and various kinds of berries, compare favorably with other mountain counties of this State.

Surprise Valley may be justly considered one of the most fertile and promising regions in California, and, particularly of late, is coming into more prominent notice by reason, not only of its superior productiveness, but is rapidly becoming occupied by actual and enterprising settlers, such as are the bone and sinew of the world, and tend to the true development and progress of any country.

Heretofore there has been Indian depredations and other drawbacks to interiere with the settlers, but that time is now past, as the proper protection is afforded by the soldiers of Fort Bidwell, and the Indians are kept in subjection. It is doubtful if there is another district in California which affords so great inducements to immigration as Surprise Valley, and the chain of valleys along down Pitt River, and many others of equal salubrity of climate and fertility of soil in Modoc County, though less extensive and less known, which are admirably adapted for agricultural purposes. Surprise Valley is the only one that has been cultivated successfully to test its capacity for producing cereals, and it is no exaggeration to say, that it yields crops of wheat, barley, oats and vegetables fully equal to the best products in any other portion of the State. And, although as remarkable as it may appear, the tender vegetables, such as tomatoes and others, which scarcely can be produced in some of the mountain valleys on account of frosts, are produced here abundantly, and are not prevented from maturing by early frosts. Such a thing as grain being killed here by frost after heading out is unknown.

The soil of Surprise is of that deep, dark, rich character which is most adapted to the production of grain, grapes and vegetables, while the climate is salubrious and bracing to the constitution.

But while these valleys offer, in the salubrity of their climate and fertility of their soil, such rare inducements to agriculturists, they and the adjacent hills are destined to become the very Paradise of stock-raisers. All who have explored this portion of the country concur in representing it as covered with the finest growth of rich, succulent bunch grass that they have seen in any country.

This, it is true, is at present a somewhat remote region, but we know of no better service that can be rendered to emigration, which is constantly flowing into the State, than to draw their attention to the fertile valleys of Modoc County.

BY RICHARD MELROSE.

ANAHEIM, January 24th, 1882.

Since writing the article on page 15 the progress of Los Angeles County has been phenomenal. Its onward strides, though due in a great measure to the advantages which Nature has lavished upon the county, were accelerated by a happy combination of circumstances. Just at the time when the San Francisco market was gorged with the product of our farms, orchards and vineyards, and prices had fallen in many instances below the cost of production, the development of the Arizona mines, and the consequent rush of people to that Territory, created a demand for the products of the soil which this county, from its contiguity to the territory, was called upon to supply. Just then, too, the railroad had penetrated the territory, and the transportation of our produce, which would otherwise have been a serious problem, and would have made heavy inroads into the profits, was solved. The opening up of the Arizona market has been of incalculable benefit to Los Angeles County, and from the very nature of things, this county will always be the storehouse from which the territory must draw many of its supplies.

Still another factor in the progress of our country was the completion of our Southern Railroad route. It has made permanent residents of hundreds, who, had they come to the State by the Northern route, would probably never have seen this county. Instances there are without number of people who have come here to see, and having seen, were conquered; they came to look at the county, and were so well pleased that the sudden resolution to remain was formed and acted upon.

I know of no community in the southern part of the county which is not more prosperous now than it was in 1879, when my first article was written. A vast area of country, which was then grazing land, has been transformed into orchards and vineyards, and all the marks of progress which follow an increased population abound on every hand. There are more school houses, more churches, more private and public enterprises of every kind, and the new comer who settles here now finds matters much more to his taste than did the pioneers who reclaimed the wilderness and made it the garden of fertility and beauty that it now is. And I challenge anyone to point out another section which offers so many and superior inducements to those seeking a new locality to begin anew the founding of a home. A fertile soil, an incomparable climate, a profitable and voracious market, good schools, churches of every denomination, good society—what more could one ask for? Thousands of acres are yet to be had in the vicinity of Anaheim, fully as good as that which yields to the Anaheim vineyardists a net profit of $150 per annum. These lands can be bought for from $25 to $100 per acre, and are, beyond question, the cheapest lands in the State of California.

This county depends in a great measure upon irrigation, and the community which has the most perfect irrigation system is bound to lead in the struggle for precedence. Appreciating this fact, Anaheim has been putting forth extraordinary efforts during the past year to secure a water supply abundant for the needs of the present and prospective population. In addition to the Cajon ditch, they completed last month, and are now using, a ditch which cost $14,000, and which is but the beginning of a water system embracing the idea of storing up the water during the Winter months when there is a superabundance. The Anaheim Water Company have secured a tract of land which only requires to be closed at one end to make a perfect reservoir, capable of holding 58,074,019 cubic feet of water, equal to 434,393,662 gallons. This is sufficient water to run ten heads of 100 inches for 67 days (of 12 hours each), without taking into account the stream pouring into the reservoir in the meantime. The reservoir and ditch leading thereto has been surveyed, and work will begin about the middle of May. The estimated cost is $50,000.

The example of Anaheim in this particular must necessarily be imitated by other communities which are dependent on river water for irrigation. Indeed, since the inception of the enterprise, there have been steps taken in the same direction by other towns in this and San Bernardino counties. There can be no question that the completion of this reservoir will immediately be followed by a large increase in the price of the land to be benefited by its waters. The land is now held for about an average of $40 per acre; with the reservoir in operation, it will command $150 per acre readily.

The number of people who seek this place for relief for asthmatic and pulmonary troubles is not inconsiderable, and for the information of sufferers who have a desire to know something about our climate, I present the following thermometrical table, which gives the average temperature of the respective months for the past five years. The average is made up from four readings of the thermometer daily—at 7 A. M., at 7 P. M., and at its lowest and highest readings:

	1877.	1878.	1879.	1880.	1881.
January	61⅞	51⅝	51	48¾	49
February	56	53¼	54	46¼	53
March	58	54	56⅞	48	52¼
April	67¼	55	57½	54⅜	60¼
May	61⅝	60⅛	61⅓	60⅛	63¾
June	70	64	66½	64	63¾
July	72⅛	67½	68⅝	65¼	69¾
August	70¾	69	70⅝	66⅝	69⅝
September	69	66¼	66¾	63¼	66¼
October	62	61⅞	62¾	60	59¾
November	59½	56	53½	54	54⅝
December	54½	50¾	52⅛	51¼	52¾

A study of the above table will show a great equability of temperature, and no extremes of heat or cold. The climate here is certainly as near perfect as aught in this mundane sphere is apt to get; and it atones in full for whatever disagreeable features are peculiar to this region.

Fares, Work and Wages, Cost of Living, Etc.

BY JOSEPH CARROLL.

It is of importance that intending immigrants to California should understand three things connected with their journey: First—The time to start: It may be stated, generally, that immigrants should so time their departure as to arrive here about May. Labor is then in demand, and in a good harvest year an industrious man can earn enough to enable him to rent land and put in a crop in the Fall. Most of the other industries are also active in the Summer. People seeking land will have time to make their selection before ploughing and seed time, and can also see the actual possibilities of the soil. These, however, may come as late as November, though it is better to arrive earlier.

Second, as to route: San Francisco is reached by two transcontinental railroads, the Central and the Southern Pacific; and also by sea from New York, via Panama, by the Pacific Mail steamers. By the latter route the time is about thirty days. By the former first-class passengers make the journey from New York in seven days; immigrants in about fifteen. The steamers furnish cooked food and sleeping berths without extra charge; the railroads furnish transportation only. The Central and Southern Pacific roads have fitted their emigrant cars with upper and lower sleeping berths, but furnish no bedding. These are, however, easily converted into good beds, and are a great convenience to emigrants. No additional charge is made for this accommodation. Free baggage to the amount of 100 pounds is allowed for each whole ticket between Eastern points and San Francisco; 50 pounds for each half ticket. Cars cannot usually be chartered for colonies, but a special car westward can be obtained when the number of passengers is sufficient—each, however, paying the schedule fare.

Third, as to cost. The railroad fare from Eastern points cannot be readily ascertained, as the Companies here only concern themselves with the schedule for Eastward-bound passengers. Besides, the rates vary from time to time, on account of cutting-up on the part of certain lines. The following table is approximately correct. The fares are for third-class passengers:

Albany, N. Y., to San Francisco	$65 00
Austin, Texas, to San Francisco	71 85
Boston to San Francisco	66 00
Baltimore to San Francisco	65 00
Chicago to San Francisco	55 00
Cincinnati to San Francisco	59 80
Detroit to San Francisco	61 50
Indianapolis to San Francisco	67 50
Kansas City to San Francisco	50 45
Louisville, Ky., to San Francisco	60 45
Montreal to San Francisco	65 00
New York to San Francisco	65 00
New York, via Panama, to San Francisco	65 00
New Orleans to San Francisco	65 00
Omaha to San Francisco	45 00
Philadelphia to San Francisco	63 50
St. Louis to San Francisco	55 50
Saint Paul to San Francisco	59 35
Washington to San Francisco	65 00

WORK AND WAGES.

From the subjoined compilation of the main industries of California and the average wages paid, it will be seen that the remuneration of labor on this Coast is on the average better than that realized in any part of the Union. There is sufficient diversity of occupation to suit almost any class of workers, though, as will be seen hereafter, the opportunities for immediate employment are by no means equal in all the callings cited.

Apprentices		$ 3 00 to $ 6 00	per week
Bakers, 1st	f	*50 00 to 80 00	per month
Bakers, 2d	f	30 00 to 40 00	per month
Bakers, 3d	f	25 00 to 30 00	per month
Bartenders		15 00 to 50 00	per week
Barbers		12 00 to 20 00	per week
Bedmakers		20 00 to 30 60	per month
Bellhangers		2 00 to 3 00	per day
Blacksmiths		2 50 to 3 50	per day
Blacksmiths, ranch	f	60 00 to 75 00	per month
Bookbinders		2 00 to 3 00	per day
Bookkeepers		50 00 to 150 00	per month
Bricklayers		3 00 to 4 00	per day
Brewers		4 00 to 7 00	per day
Bridgebuilders		3 50 to 4 00	per day
Brushmakers		2 00 to 3 00	per day
Bootmakers, custom		2 00 to 4 00	per day
Bootmakers, mfg		1 50 to 3 00	per day
Butchers, to kill	f	40 00 to 65 00	per month
Butchers, market	f	25 00 to 50 00	per month
Buttermakers	f	30 00 to 45 00	per month
Brickmakers	f	35 00 to 40 00	per month
Brickmoulders	f	35 00 to 45 00	per month
Bricklaborers	f	25 00 to 30 00	per month
Boxmakers		1 50 to 2 00	per day
Butlers, family	f	30 00 to 50 00	per month
Coachmen, family	f	25 00 to 40 00	per month
Confectioners	f	50 00 to 100 00	per month
Cooks, first	f	100 00 to 125 00	per month
Cooks, second	f	50 00 to 75 00	per month
Cooks, third	f	30 00 to 40 00	per month
Coopers	f	30 00 to 50 00	per month
Coopers, piece work		2 00 to 4 00	per day
Cabinetmakers		2 00 to 3 50	per day
Carpenters, house		2 00 to 4 00	per day
Carpenters, ship		4 00	per day
Carpenters, ranch	f	30 00 to 60 00	per month
Carriage painters		3 00 to 4 00	per day
Carriage builders		2 50 to 4 00	per day
Carriage trimmers		3 50 to 4 00	per day
Caulkers		4 00	per day
Curriers		2 50 to 4 00	per day
Cigarmakers		7 50 to 12 00	per 1,000
Cheesemakers	f	25 00 to 50 00	per month
Dishwashers	f	15 00 to 30 00	per month
Dyers		2 00 to 3 00	per day
Engineers, civil		3 00 to 6 00	per day
Engineers, mining		4 00 to 7 00	per day
Engineers, locomotive		125 00 to 150 00	per month
Engravers		2 50 to 5 00	per day
Edgers, sawmill		3 00 to 5 00	per day
Farm hands, Winter	f	20 00 to 30 00	per month
Farm hands, harvest	f	1 50 to 2 50	per day
Farm hands	f	200 00 to 400 00	per year
Filers, sawmill	f	30 00 to 50 00	per month
Firemen		2 00 to 2 50	per day
Foundry laborers		1 50 to 2 50	per day
Gasfitters		2 00 to 3 00	per day
Gardeners	f	25 00 to 60 00	per month
Grainers		3 00 to 3 50	per day
Harnessmakers		2 00 to 3 00	per day
Harnessmakers, ranch	f	30 00 to 50 00	per month
Hodcarriers		1 50 to 2 50	per day
Horseshoers		2 00 to 3 00	per day
Harness cleaners	f	25 00 to 40 00	per month

Hostlers.....f	25 00 to	35 00	per month
Lathers.....	2 00 to	3 00	per day
Laundryman .....f	20 00 to	40 00	per month
Laborers, general.....	1 50 to	2 00	per day
Machinists.....	2 00 to	3 50	per day
Man and wife (farms, etc.) f	50 00 to	60 00	per month
Masons.....	2 50 to	4 00	per day
Milkers.....f	25 00 to	30 00	per month
Millers.....	2 00 to	3 00	per day
Millwrights.....	2 50 to	3 00	per day
Miners.....	3 00 to	4 00	per day
Miners.....f	35 00 to	50 00	per month
Moulders.....	2 50 to	3 50	per day
Painters (house).....	2 00 to	2 50	per day
Painters (sign, etc.).....	3 00 to	4 50	per day
Pantrymen.....f	15 00 to	25 00	per month
Plasterers.....	3 00 to	4 00	per day
Plumbers.....	2 00 to	4 00	per day
Porters (store).....	50 00 to	75 00	per month
Porters (hotel).....f	20 00 to	50 00	per month
Printers (per 1,000 eme).....	35 to	50	
Printers (job).....	12 00 to	25 00	per week
Roofers.....	1 50 to	2 50	per day
Riggers.....	4 00	per	day
Sail-makers.....	2 50 to	4 00	per day
Soap-makers.....f	25 00 to	35 00	per month
Shepherds.....f	15 00 to	25 00	per month
Sawyers—mill.....f	50 00 to	65 00	per month
Sawyers—crosscut .....f	25 00 to	40 00	per month
Screw-turners.....f	30 00 to	50 00	per month
Stonecutters.....	3 00 to	4 00	per day
Sheep-shearers.....	5 to	7	per head
Teamsters (city).....f	25 00 to	40 00	per month
Teamsters (freighting).....f	40 00 to	60 00	per month
Teamsters (ox, logging)....f	40 00 to	75 00	per month
Telegraph operators.....	50 00 to	125 00	per month
Tie-makers.....	10 to	12½	per tie
Tinsmiths.....	2 00 to	4 00	per day
Upholsterers.....	2 00 to	3 50	per day
Waiters (hotel).....f	15 00 to	30 00	per month
Waiters (restaurant)..... .f	20 00 to	60 00	per month
Warehousemen.....	2 00 to	3 00	per day
Woodchoppers.....	1 50 to	2 00	per cord
Woodsmen (swampers, etc.)f	30 00 to	50 00	per month

FEMALE OCCUPATIONS.

Assistants (housework).....f	$10 00 to	$15 00	per month
Chambermaids.....f	15 00 to	20 00	per month
Cooks (family).....f	20 00 to	40 00	per month
Cooks (hotel) .....f	25 00 to	50 00	per month
Dressmakers.....	8 00 to	15 00	per week
General housework.....f	15 00 to	25 00	per month
Governesses.....f	20 00 to	35 00	per month
Housekeepers.....f	20 00 to	50 00	per month
Ladies' maids.....f	20 00 to	25 00	per month
Laundresses (family).....f	25 00 to	30 00	per month
Laundresses (hotel).....f	25 00 to	30 00	per month
Milliners.....	7 00 to	12 00	per week
Nurse girls.....f	8 00 to	20 00	per month
Saleswomen.....	7 00 to	12 00	per week
Seamstresses.....f	1 00 to	1 50	per day
Seamstresses, first-class.....	2 50 to	3 00	per day
Seamstresses.....f	25 00 to	30 00	per month
Waitresses .....f	15 00 to	20 00	per month

*f means, *and found, i. e.*, with board and lodging.

MALE HELP.

The foregoing table, while as nearly correct as it is possible to make it, demands some explanation. The figures given are collated from the best authorities, but in many of the industries represented there is little or no demand for help. On the other hand there is a steady and constant inquiry for good workmen in many branches of labor. Cooks command good wages, and can usually find employment. The same may be said of waiters, dishwashers, pantrymen and stewards, if thoroughly up in their work. Blacksmithing is one of the best trades in California, especially in the country. A blacksmith who can shoe horses, point ploughs and repair agricultural machinery need not be long out of a job. Custom boot and shoe making is another good calling. There are many opportunities for a good artisan in the towns and villages of the interior. In the shoe factories, however, the demand is small. First-class butchers find work without much difficulty. Competent butter-makers can always secure employment. Carpenters are more plentiful than the demand warrants at present. Carriage or wagon builders are usually busy, especially where they start shops of their own in the smaller towns, of which there are a number needing such mechanics. Caulkers, riggers, 'longshoremen, etc., have Unions that keep wages up to a good figure. Their work is far from constant, and there is little or no chance for outsiders. Farm laborers are usually in good request. The lowest figure given above is $20 per month, but the writer was assured by a gentleman who employs a good many men in Santa Cruz County, that he never paid less than $30 in Winter and wanted no cheaper men. The great desideratum is efficiency, which, on account of the nomadic character of many of the ranch hands, and the lack of experience of hundreds who try farm labor as a last resort without any previous training, is difficult to secure. A farm laborer who thoroughly knows his business can find an engagement almost any day, and even a novice who is willing to learn will have little difficulty in getting an opportunity. Men who will engage by the year are much sought after by farmers. In harvest the usual wages are $2 a day and board for laborers. Men to run headers get $3 and $4; tablemen for threshers, $2 50; feeders and machine tenders, $4; derrick-fork men, $3 to $4; sack-sewers, $3 to $4; engineers, $3 to $4. Harvest, including threshing, lasts from three to five months. This rate obtains generally in the Sacramento and San Joaquin Valleys. In some of the coast counties it is smaller. In Ventura County common farm laborers got $1 25 a day and board last harvest, but the work is light. On account of the dump wagons used for handling the grain in that county, lads of 14 to 18 are usually employed. First-class hostlers obtain employment easily. They complain, however, that the work is harder than in the East. The wages are much higher, however. The supply of harness-makers is more than equal to the demand. Opportunities occur occasionally, however, on the large ranches. Laundrymen are in fair request. Milkers who can handle from 20 to 25 cows twice a day, are nearly always in demand. Miners are rather plentiful just now. The miners' unions on the Comstock, in Bodie and other places, keep up their wages, but there are hundreds idle in these camps. Shepherds usually get $25 a month and board. They are expected to care for from 1,500 to 2,500 sheep. They lead a solitary life in a tent or cabin, but they have a good opportunity to save money, and many of our opulent sheep-owners commenced life in this way. Sheep-shearers can make $3 or $4 a day and board for a few weeks in the Spring and Fall. In every branch of the lumber industry great activity is displayed. At this writing (March, 1882) every intelligence office in San Francisco is overrun with orders for wood choppers, ox teamsters, swampers, tie-makers, sawyers, screw-turners, etc. It might be said that the extreme prices quoted above for such workmen are ruling, and that in many cases they are rather under than over stated. The demand is mainly from Humboldt and Mendocino counties, though the boom extends as far as Puget Sound, where nearly all the saw mills are in full blast. Tie-makers are especially needed, as most of the tie-contractors are behind with their railroad orders. At 10c. each tie a good hand easily makes $2 50 to $3 50 per day. The timber is redwood, and is easily worked. Persons coming to California with means enough to employ their own labor and make it productive, are morally certain of a good livelihood. From time to time the rural papers give notice of wants. A blacksmith shop is needed in one town, a paint shop in another, a good shoemaker is requested to settle in a third, and so on. In many cases the residents are so anxious to have a particular mechanic that they contribute to the expense of starting the business. Farm laborers, with a little means, can rent land, and wood-choppers, etc., with tools and provisions can get large and profitable contracts.

FEMALE HELP.

Competent female help for housework is scarce. The scale of wages printed above was compiled chiefly from the books of some of the most prominent employment offices in the city, and represents the actual prices offered by employers. From all that could be gathered during actual interviews with employers, managers of intelligence offices and applicants for work, it appears certain that a competent female servant can secure a place at good wages with little or no trouble. City positions are most sought after. It is next to impossible to get a woman to engage for the country, even at $30 a month and found. The writer inquired if, considering the demand for house servants, the Chinese interfered so much, and was answered that they do, the most desirable places in the city being filled by them. The chief inquiry appears to be for house help. A disposition is clearly apparent to substitute white females for Chinese, wherever possible, as the constant demand attests. The writer was incredulous as to the wages paid for seamstresses by the day, but was assured that a good hand could not be procured for less than $2 50 a day. The other figures are the actual ruling rates at this writing. There is some demand for girls to work in pickle and fruit-preserving canneries. They are paid by piece work, and their wages run from $6 to $12 a week, according to efficiency. The busy season, however, lasts but a few months. Women are also employed to a considerable extent in bagging factories. Good hands can make $12 a week at this industry. A considerable number of females work at bookbinding. They average about $10 a week, first-class binders realizing as high as $15 per week. Printing and its kindred industries are also followed extensively by women in San Francisco. Wages from $8 to $15, according to efficiency.

LABOR IN FACTORIES.

While almost all of the manufactories of San Francisco show a satisfactory growth for 1881, it can scarcely be said that there is much demand for labor in them at present. The machine and boiler shops have lately been running on heavy orders. The rolling-mills are busy. Planing-mills, box and bag factories, soap works, etc., have plenty to do. But they all appear to be well supplied with help. According to the report of the Assessor to the Surveyor-General, the local manufactories, in 1881, increased the number of their employés by 2,671. The most conspicuous growths are appended.

INCREASE OF EMPLOYES.

Bags	37	Hats	32
Breweries	46	Pickle and preserve	255
Clothing	630	Sash and door	749
Cigar	320	Soap	45
Furniture	210	Tanneries	50
Glass	30	Woollen mills	119

This increase was readily supplied from the resident population, and no scarcity of this class of help was experienced. A large number of Chinese are employed, especially in cigar, clothing and woollen factories.

COST OF LIVING.

San Francisco has long been noted for the variety, excellence and cheapness of her market products. The necessaries of life are cheap and abundant; the comforts and luxuries are easily attainable, even by people in moderate circumstances. The following table of prices, taken from THE MORNING CALL of March 4, 1882, may be relied upon as correct:

COAL.

Hard, ₩ ton	16 00@17 00	Cannel, ₩ ton	15 00@16 00
West Hartley, do	10 00@10 50	Wellington, do	11 00@11 50
Scotch, do	9 50@10 00	Seattle, do	8 00@ 9 00
Sydney, do	9 50@10 00	Coos Bay, do	8 00@ 9 00
Renton, ₩ ton	—@ 8 50	Coke, ₩ bbl	70@ 75

DAIRY PRODUCE, ETC.

Butter, choice, ₩ lb	35@ 37	Cheese, Sage, ₩ lb	—@ 30
Ordinary do, ₩ lb	30@ 32	Eggs, hen, ₩ doz	25@ 30
Firkin do, ₩ lb	30@ 32	Do, Duck, ₩ doz	25@ 30
Cheese, Cal. ₩ lb	25@ —	Honey, comb, ₩ lb	20@ 25
Eastern do, ₩ lb	30@ —	Extracted do, ₩ lb	12@ 13
Swiss do, ₩ lb	25@ 40	Lard, ₩ lb	15@ 18

MEATS.

Bacon, ₩ lb	16@ 18	Pork Chops, ₩ lb	—@ 15
Beef, choice, ₩ lb	15@ 20	Rib Chops, ₩ lb	10@ 12
Corned Beef, ₩ lb	—@ 8	Round steak, ₩ lb	8@ 10
Ham, Cal., ₩ lb	13@ 15	Sirloin steak, ₩ lb	12@ 15
Do, Eastern, ₩ lb	18@ 20	Porterh'se st'k, ₩ lb	20@ —
Mutton, ₩ lb	12@ 15	Smoked Beef, ₩ lb	12@ 15
Pork, fresh, ₩ lb	—@ 15	Spring Lamb, ₩ lb	12@ 25
Pork, salt, ₩ lb	15@ —	Veal, ₩ lb	10@ 15

POULTRY AND GAME.

Broilers, each	50@ 65	Rabbits, ₩ pair	25@ 30
Ducks, each	75@ 00	Squirrels, each	8@ 10
Geese, each	1 75@2 50	Quail, ₩ doz	1 25@1 50
Hens, each	75@1 00	Mallards, ₩ pair	—@ 75
Pigeons, ₩ pair	60@ 70	Canvas-backs, pair	1 00@1 50
Roosters, each	60@ 00	Snipe, ₩ pair	50@ 60
Turkeys, ₩ lb	22@ 25	Teal, ₩ doz	1 00@1 37
Small Birds, ₩ dz	—@ 50	Widgeon, ₩ doz	1 25@1 50
Hare, ₩ pair	50@ —		

FRUITS AND NUTS.

Almonds, ₩ lb	20@ 25	Lemons, ₩ doz	40@ 60
Apples, ₩ lb	10@ 12	Limes, ₩ dozen	15@ 25
Bananas, ₩ doz	50@ 60	Oranges, ₩ doz	50@ 75
Cocoanuts, each	12@ 20	Pineapples, each	50@ 75
Cranberries, ₩ gall	75@1 00	Raisins, ₩ lb	10@ 25
Figs, Cal., dry, ₩ lb	12@ 15	Walnuts, ₩ lb	15@ 25
Do, Smyrna, ₩ lb	30@ 35		

FISH.

Anchovies, ₩ lb	—@ 6	Shrimps, ₩ lb	—@ 5
Barracuda, ₩ lb	—@ 20	Shad, ₩ lb	30@ 40
Catfish, ₩ lb	4@ 5	Skates, each	10@ 15
Codfish, ₩ lb	—@ 12	Smelts, ₩ lb	8@ 9
Cuttlefish, ₩ lb	—@ 15	Soles, ₩ lb	6@ 8
Flounders, ₩ lb	8@ 10	Sturgeon, ₩ lb	3@ 5
Halibut, ₩ lb	—@ 20	Tomcod, ₩ lb	6@ 7
Herring	3@ 5	Turbot, ₩ lb	—@ 15
Kingfish, ₩ lb	8@ 10	White Bait, ₩ lb	—@ 6
Mackerel	25@ 30	Clams, ₩ gall	—@ 75
Perch, ₩ lb	6@ 8	Do, hard shell, ₩ 100	45@ 50
Pompano, ₩ lb	—@ 50	Crabs, each	10@ 12
Rockfish, ₩ lb	10@ 12	Do, soft shell, ₩ dz	37@ 40
Do, salt & dry, ₩ lb	3@ 5	Mussels, ₩ quart	—@ 10
Salmon, smok'd, lb	6@ 8	Oysters, Cal., ₩ 100	50@ 75
Do, fresh, ₩ lb	—@ 10	Do, East'n, ₩ doz	40@ 50

VEGETABLES.

Artichokes, ₩ doz	—@ 75	Onions, ₩ lb	3@ 5
Asparagus, ₩ lb	5@ 60	Okra, dry, ₩ lb	—@ 75
Beets, ₩ doz	15@ 20	Peppers, dry, ₩ lb	—@ 50
Beans, Butter, dry ₩ lb	5@ 6	Parsnips, ₩ doz	15@ 20
Do, Lima, dry, ₩ lb	8@ 10	Potatoes, ₩ lb	1@ 3½
Cabbages, each	8@ 10	Do, new, ₩ lb	8@ 9
Cauliflower, each	8@ 10	Do, Sweet, ₩ lb	6@ 7
Celery, ₩ bunch	8@ 10	Radishes, ₩ dz bch	15@ 20
Cress, ₩ doz bchs	15@ 20	Rhubarb, ₩ lb	20@ 40
Cucumber, ₩ doz	—@3 50	Sage, ₩ lb	30@ 35
Eschalots, ₩ lb	15@ 25	Spinage, ₩ lb	8@ 10
Garlic, ₩ lb	6@ 8	Sprouts, ₩ lb	8@ 10
Green Peas, ₩ lb	—@ 20	Squash, Marr't, ₩ lb	—@ 5
Lentils	10@ 15	Thyme, ₩ lb	—@ 37
Lettuce, ₩ doz	15@ 20	Turnips, ₩ doz	15@ 20
		Tomatoes, ₩ lb	—@ 12

It will be noticed that fuel is somewhat dearer than in the Atlantic cities, but the climate here calls for but little consumption, except for cooking purposes. Rent is also somewhat higher. A tenement of four rooms can be rented at from $10 to $15; one of six rooms from $15 to $20; one of eight rooms from $20 to $25. This rent includes water. The expenses of a family of six for living comfortably and without stint may be stated as follows:

Rent	$15 00 per month
Vegetables	3 50 per month
Groceries	5 00 per month
Flour	2 50 per month
Fresh meat	10 00 per month
Fuel and light	4 00 per month
Total	$40 50 per month

This list includes every necessary except clothing, and is given from the experience of practical housekeepers. But it is a fact that laboring men, and others whose income is less than $40 per

month, support and clothe their families comfortably and decently, besides saving a little toward the purchase of a homestead. It is also worthy of remark that provisions are exceptionally dear just now. Meats are 50 per cent higher than usual. Potatoes are quoted at 3c. and 3½c. a pound. They are usually worth about 1c. per pound, and frequently much less. Clothing, hats, boots and shoes, etc., are about as cheap as in the East.

BOARD.

Board and lodging in good, respectable hotels, can be had for from $4 to $5 per week. The table is well supplied with substantials and delicacies. Good meals can be had in restaurants for fifteen cents. There are several restaurants where a meal, including soup, fish, entrees, and roast, with a bottle of wine, dessert, and black coffee, may be purchased for 25 cts. Single bedrooms may be hired for $5 a month. This, with restaurant board at $12, makes the lowest cost of living plainly, though satisfactorily, $17 per month. Washing is mostly done by Chinamen. Their prices are very low. Of course these figures are for people in moderate circumstances. Those who can afford to pay for it can find as luxurious living in San Francisco as in any city in the world. First-class hotels charge $3 per day for board and room, or from $60 to $75 per month. Between the lowest and the highest-priced caravansaries there are gradations to suit all intermediate classes. There is but little difference between the cost of living in San Francisco and the large interior towns. Good substantial meals can be had in almost any village from Siskiyou to San Diego for 25 cents and upward. Rent is much cheaper in the interior cities.

COST OF FARMING APPLIANCES.

Wagons	$100 to $175
Harnesses, set	40 to 60
Ploughs	12 to 15
Ploughs, gang	60 to 75
Mowers	100 to 200
Headers	225 to 300
American horses	75 to 150
Hogs, brood	10 to 12
Hogs, male	12 to 40
Cows	25 to 50

The lower range of these prices will purchase good articles, except, perhaps, wagons and native horses. The latter, at $5 each, are wild and worthless. Good animals of mustang stock may occasionally be broken to harness, but they are generally too light. An American horse at about $125 is the cheapest in the long run. Serviceable two-horse farm wagons cost at least $125; larger in proportion. Headers are built with 10, 12, 14, 16, 20, and 24-feet cuts. The prices mentioned above are for different kinds of 10-foot headers. As a general rule, it may be said that agricultural machinery is sold at a very small advance over Eastern prices. The fact that storehouses and granaries are not needed here, on account of the dryness of the Summer and Fall months, materially lessens the cost of farming.

JOSEPH CARROLL.

COUNTIES, ACREAGE, VALUATION, POPULATION, SCHOOL FUND, ETC., IN CALIFORNIA.

Counties.	Acres.	Real Estate.	Personal Property.	Total Valuation.	Population.	No. Child'n.	Amount School Fund.
Alameda	472,000	$39,105,894	$3,716,983	$42,822,877	62,972	15,677	$110,052 54
Alpine	565,000	284,159	256,100	540,259	539	97	680 94
Amador	362,000	1,847,870	620,772	2,468,642	11,386	2,819	19,789 38
Butte	1,130,000	8,653,077	2,090,349	10,743,426	18,721	3,916	27,490 32
Calaveras	622,000	1,245,669	626,081	1,871,750	9,694	2,298	16,131 96
Colusa	1,472,000	10,624,916	1,777,392	12,420,308	13,118	3,057	21,460 14
Contra Costa	470,000	6,381,081	964,015	7,345,096	12,525	3,462	24,303 24
Del Norte	990,000	434,789	261,831	696,620	2,584	454	3,187 08
El Dorado	1,210,000	1,556,620	755,970	2,312,590	10,685	2,377	16,686 54
Fresno	5,180,000	4,143,578	2,211,018	6,354,596	9,478	2,377	16,686 54
Humboldt	2,626,000	3,875,995	1,605,551	5,481,546	15,510	3,951	27,736 02
Inyo	6,500,000	781,898	571,402	1,353,300	2,928	452	3,173 04
Kern	5,184,000	4,316,653	1,688,807	6,005,460	5,601	1,212	8,508 24
Lake	690,000	1,662,024	514,990	2,177,014	6,596	1,571	11,028 42
Lassen	3,040,000	590,853	639,911	1,230,764	3,340	885	6,212 70
Los Angeles	3,080,000	13,731,873	2,636,777	16,368,649	33,379	10,609	74,475 18
Marin	326,000	7,071,156	1,342,194	8,413,350	11,325	2,188	15,359 70
Mariposa	988,000	879,127	415,921	1,295,048	4,339	972	6,823 44
Mendocino	2,280,000	4,033,950	1,942,013	5,975,963	12,800	3,339	22,467 86
Merced	1,260,000	4,182,104	1,126,141	5,308,245	5,656	1,343	9,399 78
Modoc	2,750,000	582,985	684,319	1,267,304	4,399	1,117	7,841 34
Mono	1,790,000	605,150	364,715	969,865	7,499	554	3,889 08
Monterey	2,130,000	6,016,424	1,168,771	7,185,195	11,302	3,189	22,386 78
Napa	505,000	6,718,390	1,297,951	8,016,341	13,225	3,228	22,600 56
Nevada	720,000	5,492,909	1,433,309	6,926,218	20,827	5,056	35,493 12
Placer	915,000	4,277,253	1,497,607	5,774,860	14,226	2,951	20,716 02
Plumas	1,700,000	1,546,210	568,963	2,115,173	6,180	1,023	7,181 46
Sacramento	620,000	14,213,568	4,202,770	18,416,338	34,391	7,208	50,600 16
San Benito	676,000	3,410,501	537,227	3,947,728	5,584	1,578	11,077 56
San Bernardino	13,550,000	2,156,253	420,720	2,576,973	7,786	2,460	17,269 20
San Diego	9,580,000	2,382,795	1,142,458	3,525,253	8,618	1,991	13,976 82
San Francisco	27,000	190,389,410	54,237,350	244,626,760	233,956	55,115	386,907 30
San Joaquin	876,800	14,502,255	2,874,874	17,377,129	24,354	5,536	38,862 72
San Luis Obispo	2,290,000	3,414,838	961,246	4,376,084	9,142	2,395	19,620 90
San Mateo	293,760	5,624,855	730,825	6,355,680	8,669	2,368	16,833 96
Santa Barbara	1,450,000	4,395,076	942,562	5,337,638	9,522	3,073	21,572 46
Santa Clara	830,000	24,181,865	3,421,375	27,603,240	35,039	9,053	63,552 06
Santa Cruz	280,000	5,412,514	897,210	6,309,724	12,801	3,738	26,240 76
Shasta	2,410,000	1,084,196	877,240	1,961,436	9,492	2,247	15,703 74
Sierra	500,000	1,156,966	339,622	1,496,588	6,623	1,172	8,227 44
Siskiyou	3,890,000	1,503,092	1,148,275	2,651,367	8,610	1,860	13,057 20
Solano	530,000	7,407,641	1,635,240	9,042,881	18,475	4,977	34,938 54
Sonoma	960,000	12,884,150	2,685,212	15,569,362	25,926	7,236	50,796 72
Stanislaus	960,000	5,068,521	1,163,920	6,232,441	8,751	1,970	13,829 40
Sutter	391,000	3,368,429	752,022	4,120,451	5,159	1,442	10,122 84
Tehama	2,000,000	3,022,073	1,177,925	4,190,998	9,302	2,346	16,468 92
Trinity	1,680,000	538,675	329,821	868,496	4,998	707	4,663 14
Tulare	4,100,000	4,010,859	1,193,918	5,204,777	11,281	3,467	24,548 94
Tuolumne	1,250,000	1,080,685	515,330	1,596,015	7,848	1,712	12,018 24
Ventura	1,077,000	2,711,630	558,531	3,270,161	5,073	1,493	10,480 86
Yolo	651,000	8,604,742	1,572,685	10,177,427	11,772	3,089	21,684 78
Yuba	395,000	3,087,390	1,206,240	4,293,630	11,270	2,380	16,707 60
Totals	100,218,560	$466,273,585	$118,304,451	$584,578,036	864,686	211,237	$1,482,883 74

PLACES NORTH.	MILES.	PLACES NORTH.	MILES.
Point Bonita	7	Tillamook Head	523
Bolinas Point	17	Columbia River Bar	540
Point Reyes	33	Astoria	555
Point Tomales	49	Kathlamite	583
Bodega Head	52	Oak Point	595
Point Arena	100	Rainier	611
Cuffy's Cove	112	Kalama	620
Mendocino City	122	St. Helens	631
Shelter Cove	167	Willamette River	649
Point Gordo	184	Portland	661
Cape Mendocino	195	Cape Disappointment	545
Cape Fortunas	200	Shoalwater Bay	569
Table Bluff	212	Gray's Harbor	657
Humboldt Bay	216	Destruction Island	6638
Trinidad	233	Flattery Rocks	6897
Crescent City	274	Cape Flattery	770
Cape St. George	276	Port Townsend	8068
Rogue River	312	Seattle	83 3
Port Orford	336	Tacoma	
Cape Blanco	341	Steilacoom	830
Coquille	360	Olympia	855
Cape Gregory	372	Victoria, B. C.	750
Umpqua River	394	Nanaimo, B. C.	833
Cape Perpetua	433	Seymour Rapids	907
Yaquina Bay	454	Cape Fox	1306
Cape Foulweather	464	Fort Wrangel, Alaska	1434
Cape Lookout	483	Sitka, Alaska	1596
Tillamook Bay	499	Harrisburg, Alaska	1726

PLACES SOUTH.	MILES.	PLACES SOUTH.	MILES.
Point Lobos	7½	Point Harford	201
Point Pedro	19	Point Sal	217
Pillar Point	26	Point Arguello	236
Pigeon Point	46	Point Conception	248
Point New Year	51	Gaviota	260
Santa Cruz	70	Santa Barbara	288
Monterey	85	Carpenteria	296
Point Cypress	88	Ventura	311
Point Sur	104	Hueneme	321
Cape San Martin	136	Point Duma	344
Piedras Blancas	154	Santa Monica	361
San Simeon	160	Point Vincent	377
Leffingwell's	166	San Pedro	387
Cayucos	180	Anaheim	393
Moro	185	Point Loma	475
Point Bouchon	193	San Diego	482

FARES (NORTH).	CABIN.	STEERAGE.	FARES (NORTH).	CABIN.	STEERAGE.
Point Arena, Cal.	$7 00	$4 00	Walla Walla, W. T.	$34 00	$24 00
Cuffey's Cove, Cal.	8 00	5 00	Port Townsend, W. T.	20 00	10 00
Mendocino City, Cal.	9 00	6 00	Seattle, W. T.	20 00	10 00
Shelter Cove, Cal.	10 00	6 00	Tacoma, W. T.	20 00	10 00
Eureka (Humboldt Bay), Cal.	10 00	6 00	Olympia, W. T.	20 00	10 00
Crescent City, Cal.	15 00	10 00	Victoria, B. C.	20 00	10 00
Astoria, Or.	20 00	10 00	Nanaimo, B. C.	25 00	12 00
Portland, Or.	20 00	10 00	New Westminster, B. C.	22 00	12 00
Dalles, Or.	25 00	15 00	Fort Wrangel, Alaska	45 00	25 00
Umatilla, Or.	30 00	20 00	Sitka, Alaska	55 00	30 00
Wallula, W. T.	32 00	22 00	Harrisburg, Alaska	70 00	40 00

FARES (SOUTH).	CABIN.	STEERAGE.	FARES (SOUTH).	CABIN.	STEERAGE.
Santa Cruz, Cal.	$2 50	.....	Santa Barbara, Cal.	$10 00	$7 50
Monterey, Cal.	3 00	.....	San Buenaventura, Cal.	12 00	9 00
San Simeon, Cal.	10 00	$7 50	San Pedro	14 00	9 00
Port Harford, Cal.	10 00	7 50	Los Angeles	15 00	10 00
San Luis Obispo, Cal.	10 80	8 30	San Diego	15 00	10 00
Paso Robles Hot Springs, Cal.	14 80	12 30			

POSTOFFICES IN CALIFORNIA.

POSTOFFICES.	COUNTIES.	POPULATION.	DIST. FROM S. F.
Acampo	San Joaquin	75	118
Adelaida	San Luis Obispo	203	
Adin	Modoc	325	
Alameda	Alameda	5,750	
Alamo	Contra Costa	58	
Albion	Mendocino	118	170
Alcatraz	San Francisco	220	
Alleghany	Sierra	271	252
Allendale	Solano		
Allen Springs	Lake	30	
Alma	Santa Clara	151	58
Alta	Placer	251	208
Altamont	Alameda	40	
Alturas	Modoc	500	489
Alvarado	Alameda	317	24
Alviso	Santa Clara	149	38
Amador	Amador	900	154
Amargo	Los Angeles		
America	Sonoma		
Anaheim	Los Angeles	813	498
Anderson	Shasta	201	
Angel Island	Marin	360	
Angel's Camp	Calaveras	615	91
Antelope	Sacramento	102	
Anthony House	Nevada		
Antioch	Contra Costa	654	55
Apex	San Diego		
Applegate	Placer		
Aptos	Santa Cruz	125	111
Arbuckle	Colusa	450	114
Arcata	Humboldt	1,792	234
Arlington	San Bernardino		
Arroyo Grande	San Luis Obispo	438	270
Athlone	Merced		
Atlanta	San Joaquin	63	
Atwater	Merced		
Auburn	Placer	1,250	176
Austin	Sonoma		
Ave a	Inyo		
Azusa	Los Angeles	1,003	
Baird	Shasta		
Bakersfield	Kern	803	306
Ball	Siskiyou		
Ballard	Santa Barbara		319
Ballena	San Diego	321	523
Ball's Ferry	Shasta	16	
Bangor	Butte	325	212
Banning	San Bernardino		557
Banta	San Joaquin	413	74
Bartlett Springs	Lake	88	116
Batavia	Solano	205	65
Bath	Placer	43	
Bear Valley	Mariposa	301	
Beckwith	Plumas	51	
Bellota	San Joaquin	63	
Bell's Station	Santa Clara		
Belmont	San Mateo	125	25
Benicia	Solano	1,153	33
Benton	Mono	86	472
Berdan	Butte		
Berenda	Fresno	85	
Berkeley	Alameda	1,500	11
Berlin	Colusa	80	
Bernardo	San Diego	102	
Berry Creek	Butte	75	236
Berryvale	Siskiyou	40	
Bertha	Lake		
Bethany	San Joaquin	103	
Bethel	Fresno		
Beveridge	Inyo		
Bidwell's Bar	Butte	30	229
Bieber	Lassen	44	
Big Bar	Trinity	75	
Big Dry Creek	Fresno	63	
Bigg's Station	Butte	287	213
Big Oak Flat	Tuolumne	83	175
Big Pine	Inyo	138	
Big Trees	Calaveras		178
Binghampton	Solano	31	75
Bird's Landing	Solano	75	
Bishop Creek	Inyo	350	
Bitter Water	San Benito	60	
Black Bear	Siskiyou	250	
Black Diamond	Contra Costa		51
Black Point	Marin		26
Black's Station	Yolo	84	97
Blair	Shasta		
Blanco	Monterey	52	
Blocksburg	Humboldt	135	
Bloomfield	Sonoma	363	66
Blue Canyon	Placer	75	218
Blue Lake	Humboldt	60	
Blue Tent	Nevada		
Boca	Nevada	303	267
Bodie	Mono	6,000	444
Bogus	Siskiyou	130	
Bolinas	Marin	163	46
Boonville	Mendocino	125	115
Borden	Fresno	338	176
Boulder Creek	Santa Cruz		
Bouldin Island	San Joaquin		
Brentwood	Contra Costa	52	
Bridgeport	Mono	150	442
Bridgeville	Humboldt	105	
Brighton	Sacramento	303	134
Bronco	Nevada	40	
Bronson	Tuolumne	33	
Brown's Valley	Yuba	150	204
Brownsville	Yuba	75	225
Brush Creek	Butte	105	245
Buchanan	Fresno	125	
Buckeye	Shasta		290
Buck's Ranch	Plumas	33	245
Bullard's Bar	Yuba		
Burgettville	Shasta	35	389
Burnett	Santa Clara	187	
Burney Valley	Shasta	175	
Burnt Ranch	Trinity	75	
Burwood	San Joaquin	35	
Butcher Ranch	Placer	107	
Butte City	Colusa	75	
Butte Meadows	Tehama		
Byron	Contra Costa	61	
Cahto	Mendocino	55	166
Cahuenga	Los Angeles		
Caliente	Kern	160	324
Calistoga	Napa	801	73
Callahan's Ranch	Siskiyou	398	392
Calpella	Mendocino	26	
Camanche	Calaveras	213	124
Cambria	San Luis Obispo	1,350	
Camp Badger	Tulare	127	
Camp Grant	Humboldt		
Campo	San Diego	51	540
Campo Seco	Calaveras	150	129
Camptonville	Yuba	351	235
Cana	Butte	118	
Canby	Modoc		
Capay	Yolo	260	
Capell	Napa		

POSTOFFICES.	COUNTIES.	POPULATION	DIST. FROM S. F.
Cape Town	Humboldt		
Capistrano	Los Angeles		
Carbondale	Los Angeles		
Carpenteria	Santa Barbara	11[illegible]	300
Caspar	Mendocino	50[illegible]	160
Castroville	Monterey	50[illegible]	109
Cayucos	San Luis Obispo	51	180
Cecilville	Siskiyou		
Cedar Flat	Trinity	17	
Cedarville	Modoc	225	509
Central House	Butte	110	
Central Point	Merced	203	
Centreville	Alameda	256	36
Ceres	Stanislaus	52	119
Cerro Gordo	Inyo	250	505
Charleston	Merced		
Cherokee	Butte	701	238
Chester	Merced		
Chico	Butte	3,510	235
Childs	Santa Barbara		
China Flat	Humboldt		
Chinese Camp	Tuolumne	438	147
Chino	San Bernardino	113	
Cholame	San Luis Obispo	40	
Christine	Mendocino	31	
Chualar	Monterey	103	128
Churchill	Tulare		
China Bar	San Benito		
Cisco	Placer	75	
Citrus	Los Angeles		
Clairville	Sonoma	100	82
Clarksburgh	Yolo	35	
Clark's Station	Mariposa		
Clarksville	El Dorado	348	
Clay	Sacramento	21	
Clayton	Contra Costa	175	
Clear Creek	Butte		
Clear Lake	Modoc		
Clipper Gap	Placer	38	
Clipper Mills	Butte	501	250
Cloverdale	Sonoma	705	90
Course Gold Gulch	Fresno		
Cold Springs	Mariposa		
Coleville	Mono	102	
Colfax	Placer	1,050	193
College City	Colusa	338	
Collegeville	San Joaquin	103	
Collinsville	Solano	50	40
Coloma	El Dorado		197
Colton	San Bernardino	500	528
Columbia	Tuolumne	1,249	170
Colusa	Colusa	1,800	132
Comosa	Tehama		
Comptche	Mendocino		
Compton	Los Angeles	443	
Concord	Contra Costa	535	
Conley	Sacramento		
Copperopolis	Calaveras	305	134
Copper Vale	Lassen	21	
Cordelia	Solano	149	49
Cornwall Station	Contra Costa		
Corralitos	Santa Cruz	107	105
Cosumne	Sacramento	45	
Cottage Grove	Siskiyou		
Cottonwood	Shasta	300	292
Coulterville	Mariposa	302	276
Courtland	Sacramento		95
Covelo	Mendocino	182	
Cozzens	Sonoma		
Crescent City	Del Norte	570	274
Crescent Mills	Plumas	33	
Cromberg	Plumas		
Crow's Landing	Stanislaus	30	
Cucamonga	San Bernardino	65	513
Cuffey's Cove	Mendocino	101	160
Daggett	Siskiyou		
Dana	Tuolumne		
Danville	Contra Costa	40	
Dark Canyon	Humboldt		
Darrah	Mariposa		
Darwin	Inyo	203	430
Davenport	Santa Cruz	100	74
Davis Creek	Modoc	30	
Davisville	Yolo	509	76
Decoto	Alameda	29	27
Deep Spring	Inyo		
Delano	Kern	50	271
Denverton	Solano	103	103
De Redwood	Santa Cruz		
Descanso	San Diego		
Desert	San Bernardino		
Diamond Spring	El Dorado	102	140
Dixon	Solano	912	68
Dougherty's Stn	Alameda	90	
Douglas City	Trinity	221	
Douglas Flat	Calaveras	250	
Downey	Los Angeles	500	484
Downieville	Sierra	700	259
Dow's Prairie	Humboldt		
Drytown	Amador	250	150
Duncan's Mills	Sonoma	300	80
Dunnigan	Yolo	159	104
Durham	Butte		220
Dutch Flat	Placer	1185	206
Eagleville	Modoc	500	
East Lake	Lake		
Easton	Fresno		
Edgewood	Siskiyou	50	
El Cajon	San Diego		
Elder Creek	Tehama	50	
El Dorado	El Dorado	298	
Elizabeth Lake	Los Angeles	100	
Elk Creek	Colusa	45	
Elk Grove	Sacramento	301	123
Elliott	San Joaquin	90	
Elmira	Solano	180	60
El Monte	Los Angeles	350	
El Rio	San Diego		
Emigrant Gap	Placer	201	223
Emmaton	Sacramento	52	56
Emmett	San Benito	30	
Eaglewood	Humboldt	125	
Enterprise	Butte	149	
Epperson	Colusa		
Erie	San Benito	25	
Etna Mills	Siskiyou	370	
Eureka	Humboldt	2,639	300
Eureka Mills	Plumas	45	
Evergreen	Santa Clara	100	
Fairfield	Solano	725	49
Fair Play	El Dorado	30	
Fall Brook	San Diego		
Fall River Mills	Shasta	120	
Farmersville	Tulare	108	
Farmington	San Joaquin	303	101
Felton	Santa Cruz	220	74
Ferndale	Humboldt	800	
Fir Cap	Sierra		
Firebaugh	Fresno	60	210
Fisherman's Bay	Sonoma	55	
Fisk's Mill	Sonoma	51	110
Florence	Los Angeles		
Florin	Sacramento	90	130
Folsom City	Sacramento	2,000	1084
Forbestown	Butte	250	242
Forest City	Sierra	636	252
Forest Hill	Placer	480	193
Forest Home	Amador	41	224
Forest Ranch	Butte		
Forestville	Sonoma	125	69
Forks of Salmon	Siskiyou	30	
Forster	San Diego	21	
Fort Bidwell	Modoc	140	
Fort Jones	Siskiyou	302	416
Fort Ross	Sonoma	45	90
Fourth Crossing	Calaveras	93	

POSTOFFICES.	COUNTIES.	POPULATION.	DIST. FROM S. F.
Francis	Trinity	.....	.....
Franklin	Sacramento	115	.....
Freeport	Sacramento	251	93
Freestone	Sonoma	135	66½
French Camp	San Joaquin	94	.....
French Corral	Nevada	300	225
French Gulch	Shasta	150	.....
Fresno City	Fresno	1,200	195
Fresno Flats	Fresno	1,000	.....
Fulton	Sonoma	202	.....
Fulton Wells	Los Angeles	.....	.....
Gabilan	Monterey	.....	128½
Galt	Sacramento	400	113
Garberville	Humboldt	95	.....
Garden Grove	Los Angeles	175	.....
Garden Valley	El Dorado	149	201
Gas Point	Shasta	35	.....
Gasquet	Del Norte	.....	.....
Gazelle	Siskiyou	.....	.....
Genesee	Plumas	.....	.....
Georgetown	El Dorado	550	196
Germantown	Colusa	87	.....
Gertrude	Fresno	.....	.....
Geyser Springs	Sonoma	40	95
Gibsonville	Sierra	373	248
Gilbert	Inyo	.....	.....
Gilmore	Colusa	.....	.....
Gilroy	Santa Clara	1,621	80¾
Gilroy Hot Springs	Santa Clara	35	.....
Glenbrook	Lake	60	97
Glencoe	Calaveras	101	.....
Glen Ellen	Sonoma	.....	....
Glennville	Kern	101	.....
Glenwood	Santa Cruz	.....	.....
Gold Run	Placer	403	204
Goleta	Santa Barbara	400	.....
Gonzales	Monterey	252	134
Goodyear's Bar	Sierra	251	.....
Gorman's Station	Los Angeles	151	.....
Grafton	Yolo	401	91
Grainland	Butte	302	.....
Grand Island	Colusa	123	127¾
Grand View	Tulare	21	.....
Grangeville	Tulare	103	.....
Granite Hill	El Dorado	.....	.....
Graniteville	Nevada	224	244
Grass Valley	Nevada	4,451	210¾
Gravelly Valley	Lake	.....	.....
Grayson	Stanislaus	257	.....
Green Valley	El Dorado	.....	.....
Greenville	Plumas	800	296
Greenwich	Kern	.....	.....
Greenwood	El Dorado	105	189
Gridley	Butte	.....	209
Grizzly Flats	El Dorado	345	.....
Groveland	Tuolumne	.....	...
Guadalupe	Santa Barbara	173	123
Gualala	Mendocino	207	124
Guerneville	Sonoma	305	77
Gwin Mine	Calaveras	35	.....
Half Moon Bay	San Mateo	550	.....
Hamburg Bar	Siskiyou	112	.....
Hamlet	Marin	25	.....
Hamptonville	Fresno	.....	.....
Hanford	Tulare	318	252
Hansonville	Yuba	.....	.....
Happy Camp	Del Norte	200	.....
Happy Valley	Shasta	.....	.....
Harrisburg	Alameda	45	.....
Havilah	Kern	260	355
Hayden Hill	Lassen	.....	.....
Hay Fork	Trinity	191	.....
Haywards	Alameda	1,231	21
Hazel Creek	Shasta	200	.....
Healdsburg	Sonoma	1,202	72
Henley	Siskiyou	90	441
Henleyville	Tehama	.....	.....
Hermitage	Mendocino	163	.....
Herrick's Cross	Tulare	.....	.....
Hicksville	Sacramento	93	.....
Highland	Lake	.....	112
Hill's Ferry	Stanislaus	140	.....
Hite's Cove	Mariposa	251	.....
Hollister	San Benito	1,300	94
Honcut	Butte	190	204
Honolulu	Siskiyou	.....	.....
Hoopa Valley	Humboldt	.....	.....
Hopeton	Merced	201	.....
Hopland	Mendocino	403	.....
Hornitos	Mariposa	605	162
Horr's Ranch	Stanislaus	.....	.....
Hotaling	Placer	.....	.....
Hueneme	Ventura	100	321
Hunsaker	Tulare	130	.....
Hurlton	Butte	.....	.....
Huron	Fresno	.....	270
Hydesville	Humboldt	164	247
Iaqua	Humboldt	.....	.....
Igo	Shasta	225	.....
Imusdale	Monterey	130	.....
Independent	Inyo	282	488
Indian Gulch	Mariposa	78	.....
Inglenook	Mendocino	...	.....
Inskip	Butte	75	.....
Ione	Amador	1,000	140
Iowa City	Placer	.....	202
Isleton	Sacramento	201	.....
Ivanpah	San Bernardino	180	.....
Jacinto	Colusa	80	251
Jackson	Amador	1,174	152
Jamestown	Tuolumne	151	153
Jamison	Plumas	106	.....
Jamul	San Diego	.....	.....
Janesville	Lassen	81	374
Jenny Lind	Calaveras	190	126
Jersey Landing	Contra Costa	.....	.....
John Adams	Butte	.....	.....
Johnson	Butte	.....	.....
Jolon	Monterey	151	185
Josephine	San Luis Obispo	26	.....
Judsonville	Contra Costa	203	.....
Julian	San Diego	135	480
Junction	Lassen	.....	.....
Junction City	Trinity	75	.....
Kelsey	El Dorado	165	204
Kernville	Kern	368	365
Kibesillah	Mendocino	56	.....
Kingsburgh	Tulare	101	215
King's River	Fresno	.....	.....
Kingston	Fresno	.....	.....
Klamath Mill	Siskiyou	67	437
Kneeland	Humboldt	.....	.....
Knight's Ferry	Stanislaus	150	138
Knoxville	Lake	300	96
La Fayette	Contra Costa	58	.....
La Grange	Stanislaus	165	135
La Honda	San Mateo	50	.....
Lake City	Modoc	54	228
Lakeport	Lake	702	120
Lake Valley	El Dorado	121	.....
Lakeville	Sonoma	41	35
Lancha Plana	Amador	105	.....
Lang	Los Angeles	.....	423
La Panza	San Luis Obispo	.....	.....
La Porte	Plumas	407	265
Las Cruces	Santa Barbara	.....	.....
Lathrop	San Joaquin	165	83
Latrobe	El Dorado	110	124
Lava Bed	Siskiyou	.....	.....
Laytonville	Mendocino	.....	.....
Leesville	Colusa	25	.....
Lemoore	Tulare	285	.....
Lewis	Mariposa	.....	.....
Lewiston	Trinity	301	.....
Lidell	Napa	.....	.....
Lillian	Modoc	.....	.....

POSTOFFICES.	COUNTIES.	POPULATION.	DIST. FROM S. F.
Lime Kiln	Tulare	.....	.....
Lincoln	Placer	302	168½
Lindale	Modoc	.....	.....
Linden	San Joaquin	101	106
Little River	Mendocino	170	173
Little Stony	Colusa	301	.....
Little York	Nevada	45	210
Live Oak	Sutter	201	.....
Livermore	Alameda	1,000	48
Livingston	Merced	.....	.....
Lockeford	San Joaquin	301	111½
Lodi	San Joaquin	664	104
Lompoc	Santa Barbara	346	244
Lone Pine	Inyo	250	469
Long Valley	Lassen	85	.....
Longville	Plumas	.....	.....
Lookout	Modoc	.....	.....
Los Alamos	Santa Barbara	85	.....
Los Angeles	Los Angeles	11,311	482
Los Baños	Merced	120	125
Los Gatos	Santa Clara	261	55
Lotus	El Dorado	.....	.....
Lovelock	Butte	.....	.....
Lowden's Ranch	Trinity	.....	.....
Lowell Hill	Nevada	.....	.....
Lower Lake	Lake	480	103
Low Gap	Mendocino	.....	.....
Loyalton	Sierra	240	.....
Lundy	Mono	.....	.....
McAdams	Siskiyou	.....	.....
Machado	Los Angeles	.....	.....
Madeline	Lassen	.....	.....
Madera	Fresno	202	173
Madison	Yolo	105	.....
Magalia	Butte	103	.....
Maine Prairie	Solano	107	.....
Manchester	Mendocino	250	
Mariposa	Mariposa	450	181
Markleeville	Alpine	65	364
Mark West	Sonoma	183	63
Marshall	Marin	.....	48
Martinez	Contra Costa	1,150	36
Martin's Ferry	Humboldt	.....	.....
Marysville	Yuba	5,012	192
Maxwell	Colusa	202	.....
May	Amador	.....	.....
Mayfield	Santa Clara	725	35
Meadow Valley	Plumas	45	273
Melrose	Alameda	.....	11½
Mendocino	Mendocino	603	165
Mendon	El Dorado	31	.....
Menlo Park	San Mateo	225	32
Merced	Merced	1,502	140
Merced Falls	Merced	120	162½
Meridian	Sutter	150	209
Merrillville	Lassen	85	.....
Michigan Bar	Sacramento	251	184
Michigan Bluff	Placer	307	208
Middletown	Lake	270	86
Midway	Alameda	25	.....
Milford	Lassen	104	361
Milbrae	San Mateo	125	17
Mills Seminary	Alameda	.....	.....
Millville	Shasta	305	324
Milpitas	Santa Clara	550	42
Milton	Calaveras	173	122
Mineral King	Tulare	.....	.....
Minersville	Trinity	51	.....
Mission San Jose	Alameda	302	.....
Modesto	Stanislaus	1,700	103
Mohawk	Plumas	.....	.....
Mohave	Kern	.....	370
Mokelumne Hill	Calaveras	715	158
Monitor	Alpine	201	361
Monterey	Monterey	2,005	85
Montezuma	Tuolumne	31	150
Montgom'y Creek	Shasta	.....	.....
Monticello	Napa	128	68½
Moon's Ranch	Tehama	.....	.....
Moore's Flat	Nevada	498	236
Moore's Station	Butte	103	.....
Moosa	San Diego	.....	.....
Mormon Island	Sacramento	257	.....
Morritto	Santa Barbara	.....	.....
Morro	San Luis Obispo	55	166
Mountain House	Sierra	103	.....
Mountain Ranch	Calaveras	.....	147
Mountain View	Santa Clara	195	39
Mount Bullion	Mariposa	.....	.....
Mount Eden	Alameda	400	29
Mount Shasta	Siskiyou	.....	.....
Murphy's	Calaveras	303	155
Musick	San Luis Obispo	.....	.....
Napa City	Napa	3,731	41
Napa Junction	Napa	100	33
Nashville	El Dorado	30	193
National City	San Diego	103	483
Natividad	Monterey	500	123½
Navarro Ridge	Mendocino	150	150
Nelson	Butte	101	.....
Nelson Point	Plumas	144	.....
Nevada City	Nevada	3,250	216
New Almaden	Santa Clara	.....	65
Newark	Alameda	500	30
Newbert	Yuba	.....	.....
Newbury Park	Ventura	85	.....
New Castle	Placer	.....	171
Newhall	Los Angeles	100	441
New Hope	San Joaquin	30	.....
New Idria	Fresno	400	.....
Newton	El Dorado	90	.....
Newville	Colusa	65	187
Nicasio	Marin	183	25
Nicolaus	Sutter	365	183
Niles	Alameda	135	30
Nimshew	Butte	45	.....
Nord	Butte	150	243
Nordhoff	Ventura	60	323
Norman	Colusa	30	.....
North Bloomfield	Nevada	195	236½
North Ranch	Calaveras	25	.....
North Colnmbia	Nevada	298	.....
North San Diego	San Diego	.....	.....
North San Juan	Nevada	370	228½
North Temescal	Alameda	.....	.....
Nortonville	Contra Costa	900	56
Norwalk	Los Angeles	15	483
Noyo	Mendocino	47	175
Oak Bar	Siskiyou	70	.....
Oakdale	Stanislaus	425	126
Oak Grove	San Diego	.....	.....
Oakland	Alameda	34,556	7
Oak Run	Shasta	.....	.....
Oakville	Napa	101	54
Oasis	Inyo	.....	.....
Occidental	Sonoma	105	.....
Ocean View	San Francisco	.....	.....
Olancha	Inyo	35	.....
Oleander	Fresno	.....	.....
Olema	Marin	103	39
Oleta	Amador	150	.....
Olimpo	Colusa	30	.....
Omega	Nevada	45	236
Ophir	Placer	160	173
Orange	Los Angeles	121	503
Oregon House	Yuba	130	215
Orland	Colusa	100	.....
Orleans	Humboldt	38	.....
Oro Fino	Siskiyou	106	.....
Oroville	Butte	1,963	220
Osgood	San Diego	.....	.....
Pacheco	Contra Costa	.....	41
Pacific	El Dorado	.....	.....
Paicines	San Benito	30	.....
Pala	San Diego	.....	.....
Panoche	Fresno	400	.....

POSTOFFICES.	COUNTIES.	POPULATION	DIST. FROM S. F.
Paper Mill	Marin	.....	.....
Paradise	Butte	201	.....
Paraiso Springs	Monterey	150	.....
Pasadena	Los Angeles	500	.....
Paskenta	Tehama	200	.....
Paso Robles	San Luis Obispo	150	227
Patchen	Santa Clara	75	63½
Patterson	Nevada	105	138
Peach Tree	Monterey	.....	.....
Pennington	Sutter	.....	.....
Penryn	Placer	420	168
Pentz	Butte	45	232
Pescadero	San Mateo	535	53
Petaluma	Sonoma	4,800	42
Peters	San Joaquin	.....	107
Petrolia	Humboldt	200	.....
Pike's City	Sierra	.....	242
Pilot Hill	El Dorado	85	183
Pinacarte	San Diego	.....	.....
Pinckney	Shasta	.....	.....
Pine Grove	Amador	55	.....
Pino	Placer	194	.....
Pinole	Contra Costa	500	.....
Pioneer	Santa Clara	.....	.....
Pittville	Shasta	.....	.....
Placerville	Eldorado	1,952	199½
Plainfield	Yolo	121	.....
Plainsberg	Merced	123	150
Plano	Tulare	198	.....
Pleasant Grove	Sutter	75	.....
Pleasanton	Alameda	600	42
Pleasant Valley	El Dorado	257	210
Plymouth	Amador	315	158
Point of Timber	Contra Costa	105	.....
Pomona	Los Angeles	250	503
Pope Valley	Napa	50	.....
Poplar	Tulare	.....	.....
Porterville	Tulare	151	.....
Port Wine	Sierra	100	.....
Potrero	San Diego	.....	.....
Potter Valley	Mendocino	500	.....
Porvay	San Diego	140	502
Powellton	Butte	61	.....
Pozo	San Luis Obispo	300	.....
Prattville	Plumas	50	276
Princeton	Colusa	142	146
Pulvadero	Fresno	.....	.....
Punta Arenas	Mendocino	300	140
Purissima	San Mateo	45	38
Quincy	Plumas	555	285
Railroad Flat	Calaveras	300	258
Rallsville	Fresno	.....	.....
Ranchito	Los Angeles	.....	.....
Ravenna	Los Angeles	82	419
Red Bluff	Tehama	2,100	275
Redding	Shasta	605	309
Red Clover	Plumas	.....	.....
Redwood City	San Mateo	1,360	29
Rieff	Lake	.....	.....
Requa	Del Norte	.....	.....
Riceville	Tehama	.....	.....
Richland	Sacramento	45	.....
Rio Dell	Humboldt	.....	.....
Rio Seco	Butte	.....	.....
Rio Vista	Solano	349	89
Ripon	San Joaquin	151	93
Riverdale	Fresno	100	.....
Riverside	San Bernardino	1,366	536
Robinson's Ferry	Calaveras	90	.....
Rock	Yolo	.....	.....
Rockhouse	San Diego	.....	.....
Rocklin	Placer	496	162
Rocky Point	Sierra	.....	.....
Rohnerville	Humboldt	503	243
Rose's Station	Kern	6	.....
Roseville	Placer	307	158
Rough and Ready	Nevada	.....	216
Round Mountain	Shasta	175	.....
Round Valley	Inyo	30	.....
Routier's Station	Sacramento	.....	151
Rowland	El Dorado	200	.....
Rutherford	Napa	45	55½
Sacramento	Sacramento	21,420	86½
St. Helena	Napa	1,300	60
St. John	Colusa	205	171
St. Lawrence	El Dorado	.....	.....
St. Louis	Sierra	103	271
Salida	Stanislaus	.....	96
Salinas	Monterey	2,600	113
Salmon Falls	El Dorado	60	271½
San Andreas	Calaveras	800	144
San Antonio	Monterey	480	182
San Benito	San Benito	65	95
San Bernardino	San Bernardino	1,800	531
San Bruno	San Mateo	30	14
San Buenaventura	Ventura	2,010	433
Sanders	Fresno	199	.....
San Diego	San Diego	2,450	480
San Diegnito	San Diego	302	503½
San Emigdio	Kern	.....	.....
San Felipe	Santa Clara	.....	90
San Fernando	Los Angeles	203	450
San Francisco	San Francisco	233,958	.....
San Gabriel	Los Angeles	237	480
San Gregorio	San Mateo	60	47
San Jacinto	San Diego	55	.....
San Joaquin	San Joaquin	30	.....
San Jose	Santa Clara	12,567	47
San Juan	San Benito	500	92½
San Leandro	Alameda	1,800	40
San Lorenzo	Alameda	550	.....
San Luis Obispo	San Luis Obispo	2,243	157
San Luis Rey	San Diego	298	525
San Mateo	San Mateo	415	21
San Miguel	San Luis Obispo	.....	225
San Pablo	Contra Costa	251	15
San Quentin	Marin	298	12
San Rafael	Marin	2,294	15
San Ramoon	Contra Costa	.....	21
San Simeon	San Luis Obispo	31	160
Santa Ana	Los Angeles	1,651	505
Santa Barbara	Santa Barbara	3,469	288
Santa Clara	Santa Clara	2,416	44
Santa Cruz	Santa Cruz	5,000	80
Santa Maria	Santa Barbara	110	518
Santa Monica	Los Angeles	400	486
Santa Paula	Ventura	503	.....
Santa Rita	Monterey	125	121
Santa Rosa	Sonoma	3,472	57
Saratoga	Santa Clara	301	57
Sargent	Santa Clara	90	86½
Saticoy	Ventura	105	.....
Saucelito	Marin	700	6
Savannah	Los Angeles	50	482
Sawyer's Bar	Siskiyou	179	419
Scales	Sierra	.....	.....
Scenega	Ventura	25	.....
Schoolhouse Stn	San Mateo	75	.....
Scott River	Siskiyou	.....	.....
Searsville	San Mateo	45	36
Sebastopol	Sonoma	305	63
Seiad Valley	Siskiyou	152	.....
Selma	Fresno	.....	.....
Sentinel	Fresno	.....	.....
Shasta	Shasta	900	316
Sheep Ranch	Calaveras	.....	.....
Sheridan	Placer	101	175
Sherman	Santa Clara	.....	.....
Shingle Springs	El Dorado	180	135
Shingletown	Shasta	30	.....
Short	Tulare	.....	.....
Sierra City	Sierra	500	271
Sierra Valley	Sierra	303	.....
Silverado	Los Angeles	100	.....
Silver Lake	Amador	.....	.....
Silv Mountain	Alpine	100	379

POSTOFFICES.	COUNTIES.	POPULATION.	DIST. FROM S. F.	POSTOFFICES.	COUNTIES.	POPULATION.	DIST. FROM S. F.
Simmons	Tehama	.....	.....	Ukiah	Mendocino	951	121
Sis Quve	Santa Barbara	.....	.....	Uncle Sam	Lake	156	114
Skaggs' Springs	Sonoma	.....	.....	Undine	San Joaquin	.....	.....
Slack Canyon	Monterey	.....	.....	Union	Merced	75	.....
Slate Creek	Shasta	.....	.....	Union House	Sacramento	.....	.....
Slide	Humboldt	.....	.....	Upper Lake	Lake	200	123
Slippery Ford	El Dorado	102	.....	Upper Mattole	Humboldt	36	.....
Smartsville	Yuba	265	210	Vacaville	Solano	504	61
Smith River	Del Norte	280	289	Vallecito	Calaveras	.....	151
Smith's Flat	El Dorado	45	.....	Vallejo	Solano	6,000	27
Smith's Ranch	Sonoma	30	65	Valley Center	San Diego	130	.....
Snelling	Merced	334	156	Valley Ford	Sonoma	110	62
Soledad	Monterey	105	143	Venado	Colusa	.....	.....
Somersville	Contra Costa	501	56	Viejas	San Diego	25	.....
Somes' Bar	Siskiyou	8	.....	Vina	Tehama	93	.....
Sonoma	Sonoma	610	56	Visalia	Tulare	1,412	237
Sonora	Tuolumne	1,492	157	Volcano	Amador	1,000	165
Soquel	Santa Cruz	302	116	Walnut Creek	Contra Costa	311	25
Suscol	Napa	.....	.....	Walnut Grove	Sacramento	60	.....
Soulsbyville	Tuolumne	125	.....	Walsh Station	Sacramento	35	.....
South Butte	Sutter	.....	.....	Warner	San Diego	.....	545
South Fork	Modoc	.....	.....	Wartham	Fresno	.....	.....
Spadra	Los Angeles	255	500	Wash	Plumas	.....	.....
Spanish Ranch	Plumas	25	277	Washington	Nevada	203	237½
Spencerville	Nevada	350	.....	Washington Cors.	Alameda	252	34
Springville	Ventura	.....	.....	Waterford	Stanislaus	110	.....
Squaw Valley	Fresno	75	.....	Waterman	San Bernardino	.....	.....
Stillwater	Shasta	.....	.....	Watsonville	Santa Cruz	2,010	101
Stockton	San Joaquin	10,287	92	Weaverville	Trinity	863	355½
Stony Point	Sonoma	45	.....	Weed	San Diego	.....	.....
Strawberry Valley	Yuba	60	.....	Weldon	Kern	75	.....
Sugar Pine	Tuolumne	149	171	West Berkeley	Alameda	570	.....
Suisun City	Solano	550	46	West Branch	Butte	.....	.....
Sulphur Creek	Colusa	60	161	West Butte	Sutter	14	.....
Summit	Plumas	100	245	West End	Alameda	.....	.....
Sumner	Kern	135	302	Westminster	Los Angeles	147	502
Sunolglen	Alameda	135	37	West Point	Calaveras	120	178
Susanville	Lassen	650	321	Westport	Mendocino	60	.....
Sutter Creek	Amador	705	162	Wheatland	Yuba	505	179
Sweetland	Nevada	200	229	White River	Tulare	100	.....
Sycamore	Colusa	202	.....	Whitesborough	Mendocino	.....	.....
Table Bluff	Humboldt	75	237	White's Ridge	Fresno	.....	.....
Table Rock	Sierra	501	.....	Wild Flower	Fresno	.....	.....
Tahoe	Placer	45	273	Williams	Colusa	495	.....
Tallac	El Dorado	.....	.....	Willits	Mendocino	225	.....
Taylorville	Plumas	171	320	Willow	Colusa	760	.....
Tehama	Tehama	525	263	Willow Creek	Siskiyou	.....	.....
Tehichipa	Kern	275	350	Willow Ranch	Modoc	45	.....
Telegraph City	Calaveras	.....	127	Wilmington	Los Angeles	910	392
Temecula	San Diego	.....	440	Windsor	Sonoma	155	66
Temescal	San Bernardino	122	.....	Winters	Yolo	403	74
Temperance	Fresno	.....	.....	Woodbridge	San Joaquin	300	107
Tennants	Santa Clara	.....	.....	Woodford's	Alpine	30	355
Three Rivers	Tulare	200	.....	Woodland	Yolo	2,500	82
Tia Juana	San Diego	30	.....	Woodside	San Mateo	251	44
Timber Cove	Sonoma	90	100	Woodville	Tulare	.....	258
Timbuctoo	Yuba	30	210	Wright's	Santa Clara	45	.....
Tipton	Tulare	15	.....	Wyandotte	Butte	.....	226
Todd's Valley	Placer	105	196	Yager	Humboldt	.....	.....
Toll-House	Fresno	100	327	Yankee Hill	Butte	75	238
Tomales	Marin	251	56	Yankee Jim's	Placer	41	194
Townsend	Tulare	.....	.....	Yocumville	Siskiyou	75	.....
Tracy	San Joaquin	75	72	Yokohl	Tulare	.....	.....
Tres Pinos	San Benito	150	100	Yolo	Yolo	250	.....
Trinidad	Humboldt	185	242	Yorkville	Mendocino	75	.....
Trinity Center	Trinity	51	360	Yosemite	Mariposa	150	228
Truckee	Nevada	1,503	259	You Bet	Nevada	120	213
Tulare	Tulare	456	240	Yountville	Napa	350	50
Turlock	Stanislaus	140	116	Yreka	Siskiyou	1,500	424
Tustin City	Los Angeles	45	504	Yuba City	Sutter	600	.....
Twenty-six Mile H.	Stanislaus	45	.....	Zem Zem	Lake	102	.....

PRESS NOTICES.

[Chico Evening Record.]

"CALIFORNIA AS IT IS."—The above is the title of a handsome book, containing 175 pages, published by the San Francisco CALL. It contains a wealth of information regarding the resources and statistics of the State, and is written by seventy of the leading editors and authors of the coast. It is another splendid illustration of THE CALL'S enterprise.

[Sacramento Leader.]

We are in receipt of a copy of a neat work, published by the San Francisco CALL Company, entitled "California as It Is," written by seventy of the leading editors and authors of the Golden State. The book contains one hundred and seventy-five pages, and intended for distribution among the subscribers to THE WEEKLY CALL. From a glance at its contents we are disposed to believe it a work of some merit. As a book of reference it is valuable, containing much statistical matter.

[Shasta Courier.]

"California as It Is," written by seventy leading authors of the Golden State, is the book that is now slung at us by an enterprising firm at the metropolis. J. E. Isaacs is one of the "seventy," and his description of Shasta County compares favorably with the description of other counties. We observe that in his statistics he puts the valuation of the Court House and County Hospital at something like the right figure, $22,000, which is the valuation placed upon it in 1880. M. F. Eldridge will furnish the book on application.

[Alta California.]

The series of articles on the different counties, which have been appearing for some time in THE WEEKLY CALL, have been issued in book form under the title of "California as It Is." Each county of the State is represented, and all sections have been treated impartially, the desire having been to give full, true and correct information in regard to each and every portion of the State, to those who may be seeking new homes or investments. The statements given are over the signatures of their authors, who are persons of position, ability and experience. Solid facts and actual results have been preferred to eloquent language or beautiful embellishment. "California as It Is" is certainly a valuable publication, and forms a book of one hundred and seventy-five closely printed pages, selling for fifty cents a copy.

[San Jose Mercury.]

"CALIFORNIA AS IT IS."—The proprietors of the San Francisco CALL have done an enterprising and commendable thing in issuing a volume of 175 pages, bearing the above title, which gives a sketch of the present condition and resources of every county in the State, written mostly by resident editors or literary persons competent to furnish the requisite information. These articles originally appeared in THE WEEKLY CALL, but are now put in convenient form for general circulation, being a practical way of conveying information to present residents of the State or to those desiring to become so.

[San Francisco Abend Post.]

"California as It Is" is the title of a handsome book laid before the public by the San Francisco CALL Company, in which the reader will find a series of interesting popular articles upon our State, its counties, agricultural resources, etc. Not less than seventy articles, prepared by persons who are competent judges, the majority of whom belong to the journalistic class, have in this interesting work given their views and ideas in relation to California.

"California as It Is" cannot be too highly recommended to immigrants, because it shows them as before remarked, in an intelligent manner, the lights and shadows of our State, and shows them at a glance all the advantages and disadvantages to settlers in our State. For the moderate sum of fifty cents, this handsome book, which surely will be of great assistance to those who desire to emigrate to the "far west" is to be had of the "San Francisco CALL Company," No. 525 Montgomery street, and we specially recommend it to our many readers on the other side of the mountains.

[Sacramento Bee.]

THE CALL, of San Francisco, has issued a work, entitled "California as It Is," written by seventy of the leading editors and writers of the Golden State. It is replete with most valuable information, and reflects credit alike upon the taste and enterprise of the publishers.

[Marysville Appeal.]

THE CALL has issued a valuable publication under the title of "California as It Is," containing 200 pages. The book contains a history of the State by counties, which has been carefully prepared by seventy local editors and writers. It is a valuable book, and sold at 50 cents a copy.

[Marin County Journal.]

"California as It Is," is the title of a pamphlet of 175 pages, published by the San Francisco CALL Company. It contains an article, historic and descriptive, of each county of the State, generally written by editors, and a chapter on climate, fruits, cereals, small farming, lands, etc. The book appears to us to be one of great value, and as good a publication to send abroad as has ever been written about this State. Price, 50 cents.

[Alameda Encinal.]

The San Francisco CALL Company has published a neat volume entitled "California as It Is," being a compilation of sketches of almost every county in the State, written mainly by editors of papers in the various localities. It is a good book to send abroad, as the information it contains may be fully relied upon.

[Stockton Daily Herald.]

"California as It Is" is a volume containing descriptions of the soil, climate, productive industries and resources of each county in the State. These articles were written by the editors of newspapers published in the counties described, and they set forth in favorable lights the advantages possessed by those counties for the emigrant, the miner, the lumberman or the stock-raiser. The articles are not unduly rose-colored. They seem to be fair and candid statements of fact. The book is published by THE CALL, and is sold for fifty cents. It contains a great deal of information for the money.

PRESS NOTICES.

[Vanity Fair, San Francisco.]

We have received a copy of "California As It Is," published by the San Francisco CALL Company. The book is a marvel in its way. From the 175 pages can be obtained valuable information from every county in the State. It bears upon its face the evidence of careful work and thorough research. The work is worth thousands of dollars to the future progress of the State, and it should receive a wide circulation.

[Colusa Sun.]

The publishers of the San Francisco CALL kindly sent us a copy of their publication. "California As It Is," a book of 175 pages, giving a correct history of each county in the State, written by parties familiar with the several localities. It is neatly printed, and is of great value to such as wish a condensed history of the counties of the State, and their resources generally.

[Berkeley Advocate.]

"California As It Is" is the title of a neatly-printed pamphlet issued by THE CALL Publishing Company, in which are given descriptive letters of the resources of the various counties of the State, originally printed in THE CALL sometime since. The facts and data given are mainly reliable, and are valuable for statistical reference. To intending settlers it will prove a great aid. A handsome map of California and Nevada is included in the book.

[Calaveras Chronicle.]

"CALIFORNIA AS IT IS."—This is the title of a publication issued by the San Francisco CALL Publishing Company. It is composed of articles originally written for the WEEKLY CALL, and intended to give reliable information regarding the different sections of this State to those who may be seeking new homes here or investments. The authors, whose articles compose this little volume, are parties of ability and experience, and the information given therein is full and impartial. The pamphlet is gotten up in a neat and very attractive form, and, for the purpose it is designed, is an excellent publication. Price, fifty cents a copy.

[Placer Argus.]

The San Francisco CALL Company have issued an attractive pamphlet, containing 175 pages of closely-printed matter, and a map of California, showing the character and resources of the entire State, by counties. The articles were originally written by some of the most capable and reliable men in the various counties, at the solicitation of the CALL proprietors, for publication in the WEEKLY CALL, and so great was the demand for them for circulation in the East, that it was deemed advisable to group the matter in pamphlet form, which has been done, forming one of the grandest sources of reliable information in relation to California, in a plain, unvarnished manner, ever presented to the public. The pamphlet is sold at 50 cents per copy.

[San Joaquin Valley Argus.]

"CALIFORNIA AS IT IS."—We are in receipt of a well-printed pamphlet of 175 pages with the above title, published by THE CALL Company, San Francisco, containing well-written descriptions of each of the several counties of the State, giving more reliable and minute descriptions of California than any other work yet published; each writer seemingly endeavoring to state simple facts relating to climate, soil, productions, mineral resources, public and private improvements, including railroads, irrigating canals and ditches, navigable streams, prices of land and such other information as the inquiring mind would seek to know, making it one of the best guides to immigrants into our State ever placed before the public. The price of the book is fifty cents, and every Californian should invest a dollar or two in sending copies to friends in the East or the "old country."

[Anaheim Gazette.]

"California as It Is" is the title of a book issued by the San Francisco CALL Company. It contains descriptions of every county in the State, besides a number of special articles relating to the principal industries of California. Seventy writers aided in the compilation of the book, and it is therefore the most exhaustive work of the kind which has ever been issued. A large and handsome map of the State accompanies the book. The southern part of Los Angeles County is written up by Richard Melrose, and the northern part by Captain George C. Knox.

[San Diego News.]

"CALIFORNIA AS IT IS."—We are indebted to THE CALL for a copy of the work on California bearing the above title, and find it not only readable, but interesting. Each county has a showing, mostly written by editors of newspapers, or those as well informed. San Diego County gets an article of a little over two pages, but the author's name don't appear with it. The writer deals first with the topography of the county quite fairly, irrigation, principal resources, farm products, National Rancho, olives, bees, San Diego, Banner, Julian, Fort Yuma and other towns. Of the statistics, the work says. [Liberal quotations follow.]

[Santa Barbara Press.]

"CALIFORNIA AS IT IS."—Under this title the San Francisco CALL publishes a volume of 175 pages, with a map of California and Nevada attached. The book is mainly composed of a series of articles descriptive of the separate counties of California, and written, according to the title page, by "seventy leading editors and authors of the Golden State." There are also articles on the orange, the olive, the vine, fruit raising, small farming, quartz mining, dairying, and similar subjects of interest to the State. The whole book bristles with facts. The space devoted to Santa Barbara is filled by an able article originally written for the CALL by Mrs. M. C. F. Wood. It was republished in the *Press* after its first appearance.

[Inyo Independent.]

The San Francisco CALL favors us with a copy of their holiday work, "California as It Is." It is a handsome, 175-page book, with a beautifully-illuminated cover. It contains exhaustive articles descriptive of every county in the State—the one concerning Inyo being from the pen of the Hon. S. P. Moffatt, which was reprinted in this paper some two years ago. The CALL map of the State is attached—alone worth double the 50 cents asked for the book. So far as this section of the country is shown, it is the nearest correct of any map published.

[Bridgeport Chronicle-Union.]

"CALIFORNIA AS IT IS."—A book of 175 pages, written by seventy leading editors and authors. The contents comprise a history of the State and counties, and map of the State. It is well gotten up, and is a good work to send East. It can be had for fifty cents. Published by the San Francisco CALL Company.

[Mountain Echo.]

"California as It Is," is a book recently published by the proprietors of THE CALL at San Francisco. It is written by seventy of the leading authors and editors of California. The book is well written, and is of unusual interest to every citizen of the State, and, for that matter, every person in the United States who is interested in the history of California—its mineral, agricultural and other resources.

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