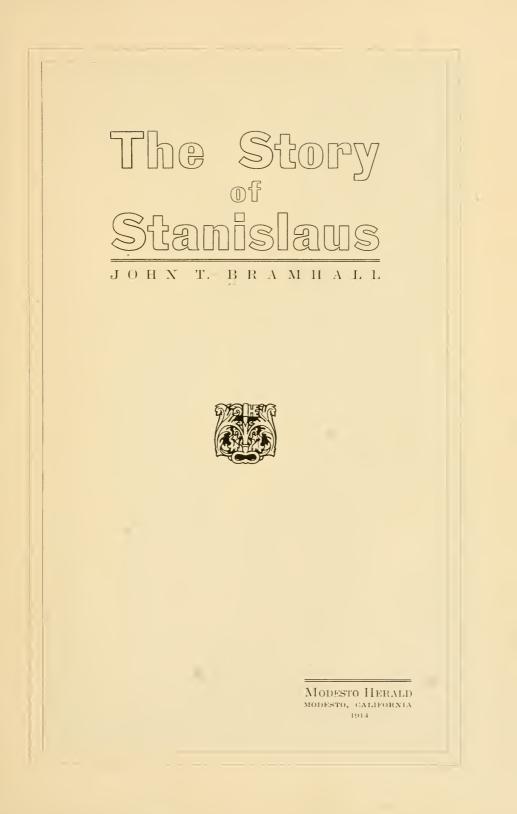


Stanislaus COUNTY, CALIFORNIA



The pioneer dam of the public irrigation districts of California, at La Grange, on the Tuolumne river, irrigating about 300,000 acres.

"Where the Land Owns the Water"





Goodwin Dam on the Stanislans river, diverting water for 150,000 acres in the Oakdale and South San Joaquin Irrigation districts.

Stanislaus County, California

HAT is this Stanislaus County, of which we are hearing so much, and yet in a vague and contradictory way?" asks the man from Missouri. That is the question which we shall try to answer in this little book, as plainly and frankly as possible, and leaving much unsaid. Stanislaus County is a fruit land;—witness her 250,000 orchard trees, (1910). It is a vine-land, as testified by her two million vines. The abundant grain crops of this present year, 1914, upwards of two million sacks, show that Stanislaus is equal to any of the counties of the Mississippi Valley as a grain country. A million tons of hay, dotting the landscape with stacks as big as Pennsylvania barns, demonstrate her capacity for hay production, and her thirty thousand or more dairy cows, mostly grades and thoroughbreds, feeding on a hundred thousand acres of alfalfa, show that Stanislaus must be a great dairy country.

A Great Dairy Country

Dairying is, probably, in a greater degree than any other branch of husbandry, the basis of agricultural prosperity, and in a wider sense, the foundation of the general welfare. Dairying improves the land, increases crops of all kinds, multiplies population of the most industrious and thrifty class, piles up bank accounts, fosters commercial business and encourages improved transportation, invites intelligent white settlement, and in every way tends to the building up and development of the community.

We will show our inquiring friends in distant states that Stanislaus County is pre-eminently a great dairy country, and while also a region of wonderfully varied and diversified agriculture, in grain, fruits and vegetables, and in live stock of all kinds, it is, above all things else, a dairy land which, with the aid of her great public irrigation systems (which make this county unique in California) her fertile soil and her great number of small farmers from the east, north and south, has attained the position of the leading dairy county on the Pacific Coast, a position which all conditions indicate will be permanent.

It Is No Dream

The reality is wonderful enough. It is no dream. "The San Joaquin Valley," says William Allen White, of Kansas, "is the most productive valley in the world." Stanislaus County has more alfalfa, more dairies, more thoroughbred stock, and makes more butter—high-grade, creamery butter—than any other county in California—almost more than any two counties, in fact. This in itself testifies to the general prosperity and productiveness of the country and its desirability for residence and business, and as Stanislaus is the acknowledged banner county in the dairy industry on the coast, it is proper to make this the leading topic of this little preachment on life as it is actually lived in California.

A Look at the Country

Let us look at the country, and consider why it is a good dairy country, and why it is a good country for live stock, fruit and other branches of agriculture as well as dairying. If I were a dairyman looking for a location somewhere between the two oceans I would look for a mild climate, good water and drainage, good markets and transportation, and a fairly productive soil. I have put soil fertility last, because the good farmer can generally make his soil to suit himself. All these conditions, plus an unusually productive soil, are to be found in Stanislaus County, California.

Location and Extent

Situated in the great San Joaquin Valley within a hundred miles of San Francisco Bay, Stanislaus County is 1,486 square miles in extent, or 236 square miles larger than the State of Rhode Island. Of its 951,000 acres the greater part is arable and about half is capable of irrigation. The valley floor, between the Sierra Nevada on the east and the Coast Range on the west, slopes gently toward the San Joaquin River, which flows northwesterly through the western side of the county. The Stanislaus River forms the northern boundary, the Tuolunne flows through the middle, and its southern watershed is that of the Merced. All these rivers rise in the snows of the high Sierras and empty into the San Joaquin. The total average run-off of the three first-named, which supply the irrigation needs of the county, is 5,540,000 acre-feet. (California Conservation Commission.)

The Soil,-None Better

"The soils as a whole are light, the largest part of the area consisting of sandy loams and sands. These have suffered from continuous cropping to grain. In portions of the area the soils are too shallow for the planting of deep-rooted crops, and in places they have been injured by alkali and the rise of ground water; but, on the other hand, a very large part of the area consists of deep, well-drained, easily cultivated soils, responsive to irrigation and cultivation, especially suited to vineyards and orchards, and under favorable conditions producing almost phenomenal yields of all crops suited to the climate.



The gardens of the Stanislans bottoms, near Oakdale, are not excelled for productiveness.

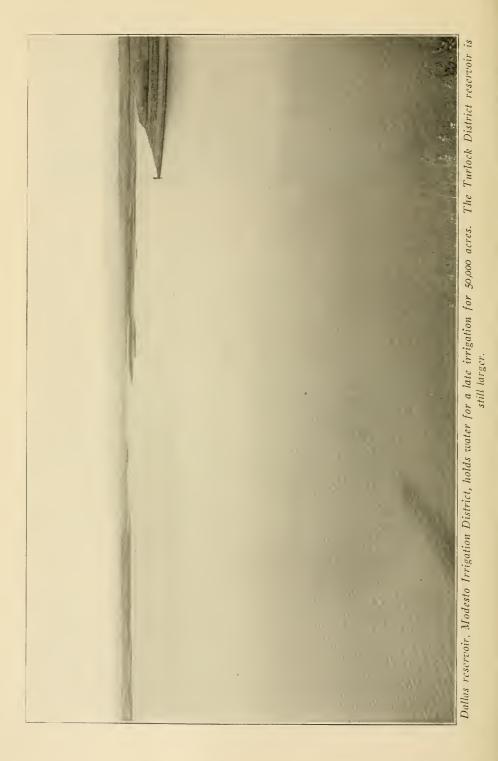
"Since the introduction of irrigation, the price of land has advanced sharply, but the best land is still obtainable at a low price, and considering the quality of soil, low cost of water, great diversity of crops, and advantages of close markets, probably *no other area* of equal size in the entire West *offers greater attractions* to the prospective settler than does this." (Department of Agriculture Soil Survey of the Modesto-Turlock Area, 1908.)

Where the Sun Makes Sugar

In Stanislaus County there is a mild, brief winter, with all the rest of the year for the crops to grow and stock to fatten and produce. The mean winter temperature at Modesto, the county seat, is 48°, and for summer, 81°. For the extremes, the mercury occasionally, but rarely, drops to 28° or rises to 110°, but for a short time only, owing to the moderating breezes from the bay, warm in winter and cool in summer. The rainfall is about 12 inches. Heavy winds or rains are rare. The last killing frost in spring may come in March, (last year there was none) and the first in autumn about the middle of November. (Department of Agriculture, Weather Bureau.) In fact, there is none too much frost to repress the abundance of insect life, while there is sufficient heat, well distributed through the long growing season, to make frequent crops of alfalfa and to mature fruit and grain with the maximum of starch and sugar.

The Farm Area, and the Farmers

In 1910 there were 649,400 acres in farms, of which 512,200 were improved. The census plays no favorites. It tells us that not only are the people of Stanislaus mostly farmers, but that they are native Americans who own the land they farm. Of the 22,522 population in 1910, 2,640 heads of families were farmers, and of these 4 784 owned the land they farmed. Of these owners, 1,544, or over 86 per cent, were native white, 652 were foreign-born white, and just four were non-white. There were 296 native white tenants. The tendency is for the tenants to become owners.



A Land of Small Farms

With the improved conditions of agriculture, farms multiplied rapidly and the 951 farms in 1900 became 2,687 farms in 1910. Of these, 439 were from 99 to 50 acres: 1,046 were from 20 to 49 acres, and 515 were under 20 acres. In the irrigated districts the average size of farms is about 25 acres.

Rapid Growth of Population

In 1900, after a period of decline, the population of the county stood at 9,550. In the next ten-year period, "after the water came," the population rose to 22,522, a greater increase than was made by any other county in the State, save Los Angeles, which has the advantage of a large commercial city and railroad center. The school census now indicates a population of 32,000.

The Schools of Stanislaus

Few states spend so much upon their schools, in ratio of population, as California, and few have better schools or more capable teachers. In 1900, Stanislaus Conuty had 1.560 pupils in the schools and but one high school. In 1913 there were 5.619 pupils in the elementary schools, with 157 teachers. The eight high schools have 38 teachers and 662 students. The total expenditures for schools were \$348,000; value of school property, \$810,000, and the tax rate for elementary schools, .27, and for high schools, average, .47. Since 1903 all one-room schools in the county have been changed to two or three-room schools, and many separate primary schools have been built. School gardens and playgrounds, with appropriate equipment, have been installed in nearly every district and have been made an important adjunct of the school courses.

Stanislaus is Prosperous

Assessed valuations are among the few figures used in connection with real estate that mean more than they look. In 1890 the total valuation of the property in Stanislaus County was, in round numbers, \$15,000,000. Then followed a drop in value, owing largely to the decline in the profits in grain farming, and the assessment dropped to \$12,000,000 in 1900. Then came the inauguration of the irrigation districts and the change from dry farming to alfalfa and fruit. Assessments have greater specific gravity than platinum, but they rose to \$24,000,000 in 1910, and to \$28,000,000 in 1913. Irrigation pays the freight. Another good index of prosperity is found in the bank deposits. In 1900 there were but two banking towns in the entire county, with four banks, and \$871,000 in deposits. The big ranchers carried a buckskin pouch of eagles, and the little ranchers carried a mortgage. In 1914 there were twenty banks in ten towns, with \$6,500,000 in deposits.

Libraries and Women's Clubs

Libraries and women's clubs are important indications of a high degree of culture. Stanislaus County, in common with the other counties of the Sau Joaquin Valley, enjoys both in a high degree. The county library system



Main Turlock canal, at the left, and Ceres lateral at the right. Alfalfa fields on both sides.

gives the most remote foothill farmer the privileges of the central library, (at Modesto, in the McHenry Library), and also of the State Library, without expense. There are nineteen branch libraries in the county. The county Federation of Women's Clubs has eight affiliated clubs, with over 400 members, having five club houses which serve as social centers for a widespread population. As an example of their activity, the Improvement Club of Modesto recently turned over to the city thirty-five acres of beautifully improved parks, retaining fifteen acres for further improvement.

Farm Products Average \$100 per Acre

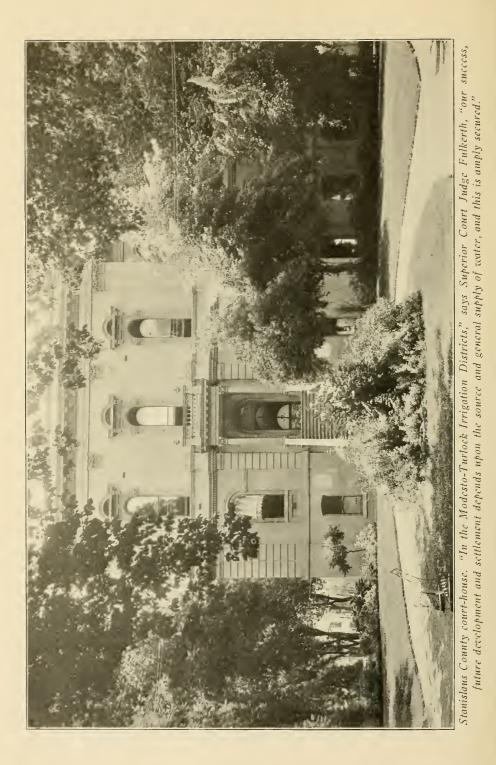
The farm products of the county, as returned by the County Statistician, in 1913, a lean year, were: Grain, mostly barley, 1,060,000 bushels; beans, 10,000 bushels; sweet potatoes, 533,500 bushels; alfalfa hay, 991,000 tons; melons, 72,000 tons; pumpkins, 25,000 tons. Total value, \$9,545,400. Orchard and vineyard products were valued at \$1,685,000. Dairy products sold amounted to \$3,012,836; poultry products, \$370,000; animals sold and slaughtered, and wool, \$1,441,000. Total value of all agricultural products, \$16,054,000. The products of the 152,000 acres of irrigated land figure out something over \$100 per acre. With something over 200,000 acres to be ultimately put under irrigation by the extensions now under way or planned for, there is every prospect that the annual revenue of the farms of Stanislaus County will reach, before many years, twice the sum now realized, or more.

The Cow Tester's Record

Space will not permit us to go into details regarding the dairy production or the many fine herds of dairy cattle in the county. We may take, however, a summary of the record of the Stanislaus County Cow Testing Association, whose secretary reports a steady improvement in the dairy herds of the county. For the sake of brevity, we will take from the report only the cows rating above 1½ pounds daily, making a composite herd of twelve cows, grades of all breeds, averaging 4.05 fat test, 1,281 pounds of milk, equivalent to 51.9 pounds of butter-fat per month. Brinka de Kol, a Holstein, milked three times daily, and testing 3.95, made 79.3 pounds in May and 75.5 pounds in June.

What Are the Irrigation Districts?

Speaking of the advantages of diversified and intensive farming, Judge L. W. Fulkerth, of the Superior Court of Stanislaus County, says: "In no part of California is this better demonstrated than in the Modesto and Turlock irrigation districts in Stanislaus County, in the central and most fertile part of the San Joaquin Valley. These districts are quasi-public corporations, with boards of directors having similar powers and performing similar duties, within certain defined limits, as boards of supervisors of counties. * * * The initial cost of the system was financed by long-term bonds voted by the people, the same as county or school bonds, and the



bonded indebtedness at present is small as compared with the selling value of the lands, being only about \$15 in the Turlock district and \$20 in the Modesto district. The running expenses and interest on bonds is provided for by levy of yearly assessments which are collected in the same manner as county taxes and payable in two semi-annual instalments, making payment comparatively easy. The bonds run twenty and forty years, and after their retirement the only expense will be for maintenance, or the extension of the works. There are no 'water rights' separate from the land, as in privately controlled systems."

The Irrigation Works

The irrigation works, consisting of diverting dams on the Tuolumne and the Stanislaus, two large reservoirs and several hundred miles of canals, considered as an undertaking not of the federal or State government but of the farmers themselves, astonish all beholders. The La Grange dam, on the Tuolumne, shown on the cover, was built in 1893 by the Modesto and Turlock Irrigation districts jointly, at a cost of \$550,000. It is 336 feet long and 127 feet high, and is one of the highest overflow dams in the world. Water is diverted for the Modesto district on the north side and for the Turlock district on the south side, the filings being 4500 second-feet for the former, and 5000 second feet for the latter.

The Goodwin dam, on the Stanislaus, was built by the Oakdale and the South-San Joaquin Irrigation districts jointly, at a cost of \$350,000, and was finished in 1912. It is a double-arch dam, the main arch being 78 feet high, with a radius of 135 feet, and is designed to carry 260 second-feet for the Oakdale district and 850 second-feet for the South-San Joaquin district. These dams may be regarded as only a beginning of a still more extensive irrigation system of the future that shall put water on every acre of irrigable land in Stanislaus county.

A Model for All the World

These irrigation districts, organized and financed by the people and for the people, and supported (in the Modesto, Oakdale and Waterford districts) by taxation on land values alone, have furnished a model for the entire country, and foreign lands also. Commissioners from distant South Africa, Australia and South America have visited and carefully examined the working of the system, carrying back the most encouraging reports of its success.

Good Roads

Good roads are a necessity to the well-being of any community, and especially to one that produces a heavy tonnage of perishable commodities. The absence of rain through the long summer ensures dry roads, generally hard and level. Through the county, from north to south, extends the great State Highway, a smooth, paved boulevard that is being constructed through the entire length of the State, connecting with a similar road leading to Portland, Oregon. The county has about sixty miles of this splendid roadway. A lateral extends eastward to the mountains, via Salida and Oakdale, and another is projected westward, making an alternative route from the county seat to San Francisco, via San Jose and Santa Cruz.

Markets and Transportation

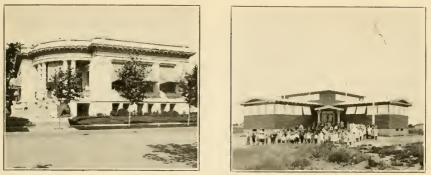
Stanislaus County has the best market in the world, San Francisco, with demands greater than the supply. San Francisco is the American supply depot for all the western hemisphere and will be the chief entry port for the Panama Caual and its exchange of traffic. For the local trade, fruit and dairy products delivered at the railroad in the evening are in the San Francisco market early the next morning. Two transcontinental railroads, with their branches, pass through the county and one of the electric traction lines exchanges traffic with a third, so that there is ample service and competition in the matter of transportation. Of great importance in this regard is the San Joaquin River, navigable for large boats from San Francisco to Stockton, and its old-time service south of Stanislaus County soon to be restored, making it a recognized factor in the adjustment of rates. Good, all-the-yearround markets, accessibility, good transportation and good roads, smooth and level, are the especial advantages of Stanislaus County. Now let us look at the country more in detail.

The Newman Country

N THE natural order of precedence, Modesto, the county seat, would be entitled to first place in the Stanislaus County book. But in this attempt to describe the county for the benefit of the home-seeker we will pay little regard to precedence. We are trying to tell the newcomer the real story of Stanislaus,—what the country is, how it came to be what it is, and what it is likely to become. The story of the growth of Stanislaus County to the position of the leading dairy county of the State begins with Newman, on the great West Side.

Steamboats Up the River

Before the railroad came to the valley the San Joaquin River was the main thoroughfare, even as far as Herndon, which would have been called Fresno Landing if the eastern style had prevailed. Stern-wheel boats went up the river from the bay to Burneyville (now Riverbank), on the Stanislaus, and up the Tuolumne to Adamsville, near the present city of Modesto. Much grain was carried on the river in those days, and also live-stock, hides, wool, humber, and supplies for the mining camps. Indeed, the river is still under federal supervision and the bridges are built with draws. The big crops of the west side of the valley in 1914 have revived steamboat traffic to the old port of Grayson, on the San Joaquin, which is but a few miles from Newman, the present west side metropolis.



Stanislaus county public libraries and schools are the latest word in architecture and sanitation.

The New Creamery System

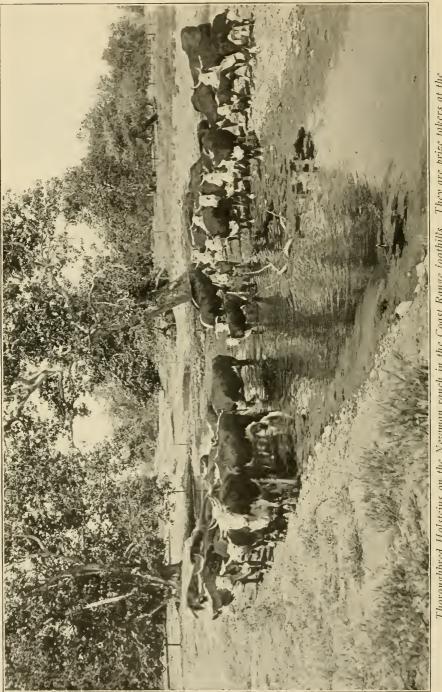
About 1890 the new creamery system, with the refrigerating process, came in, along with the cream separator, and these improvements revolutionized the dairy system and doubled the profits. To a great extent, also, the creamery revolutionized agriculture, putting into new use the ancient system of irrigation. The San Joaquin & Kings River canal (Miller & Lux) brought water; the new Chilean clover, alfalfa, proved itself to be really the "best fodder," as its name implies, and the New Era Creamery, near the present town of Newman, the first to be established in the valley, was the natural result, and a success from the start, making about 100,000 pounds the first year. The Newman country, besides being an ideal grain and cattle country, became also a rich dairy district and population rapidly increased.

The Miller & Lux Canal

Bound up in the history of the early development of the county is that of the Miller & Lux canal system, as it is called, or officially the San Joaquin and Kings River Canal Company. This is the oldest canal in the valley, dating from 1871, and is therefore the father of its irrigation. The system diverts water from the west bank of the San Joaquin River above the town of Mendota, in Fresno County, and the area tributary to it extends for seventy miles along the west bank of the river in three counties. The water company belongs to Miller & Lux, a noted firm of energetic German pioneer cattle men who control immense holdings of land on the west side of the valley. No water rights are sold; the water is measured to the users and charged for on the basis of a flow of one cubic foot per second every twenty-four hours, amounting to about \$1.75 per acre per annum.

A Great Beef Country

There is a constant and growing demand for beef of the best quality, in San Francisco and for export. Stock raising on the west side and cattle feeding also, are increasing and thousands of head of "feeders" from the



Thoroughbred Holsteins on the Newman ranch in the Coast Range foothills. They are prize takers at the California State Fair and are never housed. southwest are being fitted for market on the wild pasture of the hills and the alfalfa of the irrigated lands. But for the disorders in Mexico, ten thousand head of stock would now be grazing on the long grass in the Coast Range valleys. But there is an important movement towards providing at home the material for a better foundation for the beef cattle of this region. The Newman Herefords are a feature of every California State fair, and would win premiums if sent to the International at Chicago. The thorough bred herd now numbers about 150, headed by Young Donald and Hesiod Lad, the former being an importation from Iowa and the latter from Missouri. The four or five thousand head of beef cattle shipped from Newman every fall will soon show a strong admixture of the finer Hereford blood Many sheep, it may be added, are also fed in the mountain valleys.

Hogs are an important element in the economy of the west side rancher. Where there are many dairies, and as every dairy may be called a hog ranch, it is evident that the industry is a considerable one. The common practice is to feed skim-milk and pasture on alfalfa, finishing off at about 200 pounds, without any grain whatever. A few farmers, however, have finished with grain, and this year, with an abundance of barley, many will adopt this method of feeding.

An Electric Pumping Plant

Besides the fourteen thousand acres irrigated by the "Miller & Lux" canal there are some two thousand more, all in alfalfa, irrigated by a system of electrically operated pump wells, lying between the canal and the hills, Three wells have been driven, on two sections of the Newman ranch, about sixty feet, connected up with two powerful electric pumps and capable of delivering 7,000 gallons per minute. The power is taken from one of the electric companies whose lines traverse the valley on every side. The advantages of electric pumping are great, despite the high cost of installation. With such a plant the rancher is made independent. He has his own water, and he has it when he wants it. Moreover, it is pure for all domestic uses and is of course entirely free from the injurious weed seeds that often carry trouble for the alfalfa farmer in the ditch water. The accompanying illustration shows a part of the alfalfa field, sown last fall, in contour checks, irrigated by this plant. (See p. 24.)

The Newman country has been described as a great grain country in the past. It is so still. In this present year, 1914, one may ride in an automobile, on hard, level roads, mile after mile, and mile after mile, past solid areas of wheat or barley, principally the latter. lying against the footbills of the Coast Range, and two to three miles broad, sometimes broken by sections or double-sections of alfalfa. Upwards of 300,000 sacks of grain will go down the river from the Newman district this fall, besides many sheep, hogs and cattle. Altogether, the grain crop from this district will reach a million and a half sacks.

Newman

EWMAN is a bright, active town of about 1,500 population, with two fine banks, the biggest grain warehouse in the valley, flourishing commercial houses, schools and churches. The banks, although the first was organized as late as 1903, have about a million dollars in deposits. The schools, both the grammar and the high schools, are modern buildings and models of their kind. The Newman Creamery turns out from a ton to a ton and a half of butter daily, besides which about two hundred 10-gallon cans of cream are shipped. A drymilk plant, to use the product of a couple of thousand cows, is projected. The cheese industry is also important, and profitable. The Hubbard & Carmichael dairy, milking between 350 and 400 grade Holsteins and Durhams with a milk test averaging 3.9, is making from 750 to 875 pounds per day, selling at 2 or 3 cents over the San Francisco market, which averaged 16 cents in 1913. The main feed of the cows is cut alfalfa, supplemented by silage from four 250-ton silos.

Convenient Market.

Only 108 miles from San Francisco. with direct train service, and with river transportation also, rich soil and unequaled health conditions, and no fancy prices for land, a splendid future for Newman and the entire westside country, is promised.

While the town of Newman has been built up by and is the depot and shipping point of a great corporation ranch, it should be considered, nevertheless, as an "open port" and a town that welcomes individual industry and enterprise. The lands too, are open to all comers and the prospective settler, if he likes the country, will have no difficulty in finding a piece of land, large or small, suited to his desires.

Crow's Landing

ROW'S LANDING is eight miles north of Newman, with a deep sediment soil common to all the west side country. It has two banks, two churches, three creamery stations and a first-class school, with a school garden that would take a prize in an intercounty competition. If any one thinks that Crow's Landing is not a coming place, let him look at the school, a fine new building costing \$35,000. And, despite its name, suggestive of days that are past, Crow's Landing is a coming community. That is to say that it has every requisite for a prosperous and growing town and surrounding country-side. It has the soil, the health conditions, and the transportation facilities. Alfalfa has long been established here, some of the fields being twenty-five to thirty years old and so deeply rooted as to require no irrigation. The soil is so friable that it does not pack down and harden by pasturing, which accounts for the endurance of the fields. One of these fields last year made five cuttings of one and a half to two tons per acre. Naturally the leading agricultural industry is dairying, and the district has over 4.000 cows. Grain produces heavy crops and fruit has given good yields, though so far there are few market orchards.

Resembles Illinois

Crow's Landing does not boast a large population. There are probably less than five hundred people within a radius of a mile. But if the town does not boast of population, or showy buildings, it is not because the country is not rich in resources. It is to her credit that she has not been exploited by ambitious promoters and land prices have remained within the limits of moderate buyers. Crow's Landing, in fact, has not awakened to a realization of her own advantages. The country resembles the level prairies of southern Illinois more than any other part of California, but in productiveness is more varied and infinitely richer.

A Bottomless Soil

The soil here is of wonderful depth, practically bottomless, in fact, and this applies, to a certain degree, to all the soils of the county; but while the sandy loam is in places interrupted by a stratum of hardpan of varying hardness and thickness, here the soil is made up of an alluvial silt and the decomposed limestone and other rocks that form the Coast Range. There is no bed of clay, so familiar to the eastern farmer, and while there is a decreasing amount of humus as we go down below the surface soil, there is no lack of the finely divided mineral elements so lacking in the older soils of the East. Horace Greeley used to say that there was another farm under the old fields; here there are a hundred farms underlying the upper one, and each quite as fertile, could they be spread out to the air, as the one now producing sixty or seventy bushels of barley to the acre without a pound of fertilizer.

Irrigation by Canal or by Pumping

The terminal district of the Miller & Lux canal, a great part of the Crow's Landing district is practically old river-bottom land and is subirrigated, while the land lying closer to the railroad is irrigated from the canal. Farther west, where the land is higher, it may be easily irrigated by pump wells, as is being successfully done on the adjoining Newman lands. While the initial expense of such a plant is considerable—about \$5,000 for the well, motor and pump capable of irrigating a section (640 acres) of land—it has the advantage of being a part of the land improvement and responding to call at any time.

Wide Adaptability

Excepting citrus fruit, and such vegetables as do best on a dry, light sand, the Crow's Landing country, and all this San Joaquin River land, is



adapted to all crops of this latitude and will produce them in the greatest abundance. Alfalfa and all kinds of fodder plants; potatoes, and all manner of root crops; grain of all kinds, and every variety of pit fruit will grow rapidly and produce abundant crops in this deep, rich, moist, alluvial soil. The foothills contain valuable deposits of gypsum, building stone and various minerals.

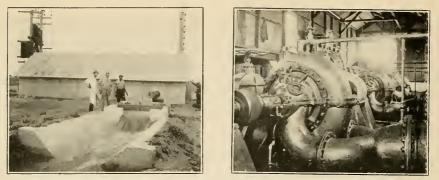
Patterson

ATTERSON is distinctly a garden town. It is a clean town, a dry town, a live town. The young city has 800 people and the colony numbers about 1,500. It has a bank,—one of the prettiest in the State,—built at a cost of \$25,000, and with over \$100,000 in deposits. There is a Chamber of Commerce and a newspaper. The Administration building and Postoffice, in a beautiful park in the center of the plaza, is a very attractive building. The great steel water tank, larger and higher than found in many larger towns, testifies to the up-to-date city water-works and ample fire-protection, and the fine new grammar school, and equally fine high school now building,—these the costliest buildings in the town,—show the care that is exercised in the matter of education. The Women's Improvement Club and a study club help to make a pleasant society.

Patterson is another name for push, or in the Spanish, pronto. There have been a good many model towns started in California, but some of them have not survived the measles. Patterson is out of short pants and is the Young America of the west side. The story is told how the elder Patterson, a New Yorker, having purchased the old Spanish grant known as the Rancho del Puerto (the name signifying a port, and testifying to the importance of the river navigation,) of some leagues of land, locked horns with the big Miller & Lux corporation, and the big irrigation canal was stopped at the rancho's southern boundary. The San Joaquin River, with its three million or more acre feet of mean annual run-off, ran past the rancho's front, the riparian rights appertaining to the grant, and it might be cheaper to pump it half a hundred feet than to bring it down a hundred miles by gravity. So a canal was built to carry the water up hill, and pumping works were installed to lift the water.

A Modern River-Pumping Irrigation Plant

In Egypt one continually hears the creak of the *sakya*, or big wooden water-wheel, by which the patient oxen raise the water of the Nile to the fields and date orchards. Sometimes the fellah women, no less patiently, carry the water on their heads. On the San Joaquin we harness the mountain streams fed by the melting snows of the Sierras, carry it on copper cables a hundred and fifty miles, and set it to work turning centrifugal pumps lifting fifty thousand gallons a minute at the first step of twenty feet.



Electric pumps lift water from deep wells and from the San Joaquin river. Power costs about one cent or less per K.W. hour.

Four miles of concrete-lined canals and two hundred miles of laterals, with relay stations for lifting the water to the higher levels, make an irrigation system that is rightly regarded by experts as being one of the most complete in California. The combined capacity of the pumping stations is 1,645 horsepower, capable of supplying three acre-feet of water yearly to the 19,000 acres in the tract. As the irrigation duty of water here is estimated at two acre-feet, it will be seen that the needs are amply provided for. The water rights go with the land, and the cost of operation, or the ratio paid by the users, has been \$1.50 per acre foot for the past three years. The water company stock will automatically pass to the owners of the land when three-fourths of the tract is sold and deeded, which will be, probably, by the summer of 1915. The Patterson farmers will then own and control the finest and most up-to-date co-operative irrigation plant in the country.

Beans Arc Profitable

Beans are found very profitable in this rich, mellow land, and are often planted to follow grain hay, or between the young orchard rows. Crane and Cairns planted forty-five acres of Lady Washingtons as an experiment and harvested twenty-five sacks to the acre,—eighty pounds to the sack. They have set out ten acres of walnuts and are growing beans between the rows. There are about 1,500 acres of beans in the Patterson country.

Varied Industries

On its west side, against the foothills, Patterson is still a live-stock and grain country; through the center it is a fruit and poultry district, and toward the river a dairy country, these industries of course lapping over and intermixing. Patterson has no creamery as yet, but ships much sweet cream, about 700 cans of sweet cream per month, and this is being rapidly increased. As there are some fourteen thousand acres of alfalfa on the Patterson farms, capable of maintaining as many dairy cows, it will be



Patterson, near the San Joaquin river, is one of the cleanest, prettiest and most up-to-date towns in the valley.

seen that there is plenty of room for the dairy farmer. Hogs and poultry are a profitable adjunct of the dairy and there seems to be no limit to the demand for these products. The Patterson Hay Producers' Association is a strong organization of farmers.

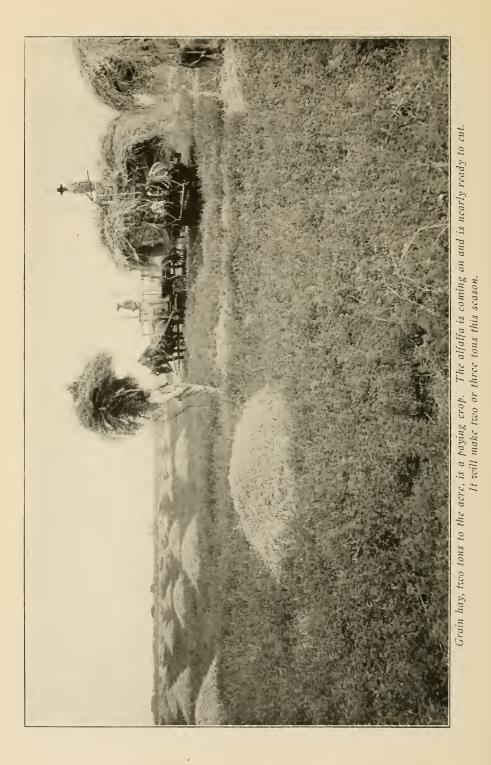
Orchards, especially of peach and apricot, are being put out in all directions, and walnuts, too, are being extensively planted, so that in a short time, almost before the people are aware of it, Patterson will take its place as a leading fruit region. Already twenty-five hundred acres on the Patterson farms have been planted to fruit and nuts. Bartlett pears are also being extensively planted, as the soil is found very suitable for this fruit and there have been detected no indications of blight.

Palm and Oleander Bordered Avenues

The avenues radiating from the central plaza are planted with palms, oleanders, eucalyptus, sycamores, magnolia, and other trees, and even now the oleanders, which grow to a height of fifteen feet or more in this climate, are showing a line of brilliant bloom ten or twelve miles long. In every direction are seen rows of pretty bungalows, usually with barn, poultry house and other accessories to the rural home. Las Palmas Avenue, a gravelled boulevard lined with fine homes, stretches out three miles to the east, to a beautiful park on the bank of the San Joaquin River.

Grayson and Westley

Grayson is the old river town on the San Joaquin, already alluded to, where steamboats take cargoes of grain and hay for the tidewater ports. It requires no prophet to foretell a future of activity and prosperity, and wellfilled warehouses and busy wharves in this and other river towns in the not distant future. Westley is west of Grayson, on the railroad, and is building up a prosperous community, mainly on a grain foundation, but soon to be supplemented by dairy and orchard.





This is one of the schools whose Spanish architecture might deceive Father Serra himself.

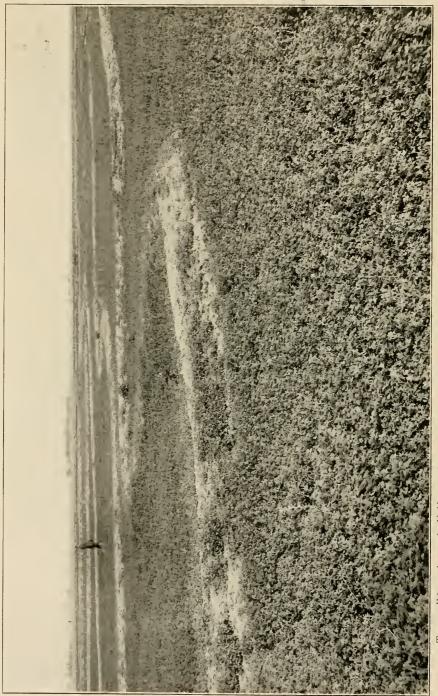
The Modesto Irrigation District

T IS unnecessary, in this brief space, to repeat the story of the enterprise of the people in forming the Modesto Irrigation district and building the system, and of the wonderful progress that has resulted. That has been covered in the first chapter. The State Bond Commission, in a recent decision on the legality of a bond issue of \$610,000 for improvements, pointed out that this was but a small portion of the indebtedness that the district could carry if necessary. The water right was assessed by the commission at \$1,225,000, and the land values, \$15,291,000.

Sixty-nine Square Miles of Emerald Green

Like a fairy tale is the story of the turning of the sandy stubble and dry pasture land of central Stanislaus County into a blooming garden. But we will give the reader the cold facts and let him supply the imagination for himself. The report of the Modesto Irrigation district for 1914 shows that of the 52,381 acres irrigated, 44,261 acres, or 84.5 per cent, are in alfalfa; sixty-nine square miles of emerald green. Some of this produces as high as ten tons to the acre, but figuring at five tons, which is a fair average of the entire acreage, we have 220,000 tons of the best hay ever fed to cows. The table of crop acreage, as compared with 1909, follows:

Crops.	1909	1914
Alfalfa	16,306	44,261
Trees	2,240	2,744
Vines	2,404.5	1,768
Corn, (milo)	561	665
Tomatoes	8.5	
Beans	107.7	264
Millet	17	
Oats	6 All grain, 2,432	
Potatoes	34.5 G	arden, 247
Total	22,136.5	52,381



Two solid sections of alfalfa on the west side, seeded last fall. Irrigated by pumps shown in first cut, page 20.

The rapid increase in acreage, 137 per cent in five years, will be noted, and the striking increase in alfalfa, and in grain (on alfalfa sod). Vegetables of all kinds have increased, while the vineyard area has diminished.

Sixteen Thousand Dairy Cows

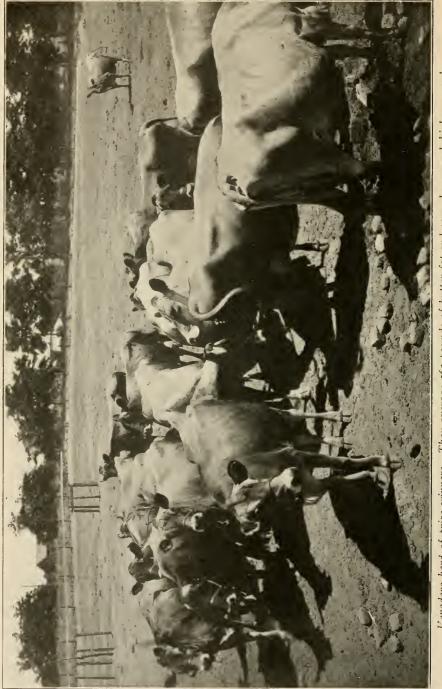
The county statistician reports 14,760 mature dairy cows for the Modesto district in 1913, and there should be nearly sixteen thousand creamproducers in the district this year, too small a number, however, for our 44,000 acres of alfalfa. Their proportion of the butter-production of the county this year, figured on a basis of nine million pounds for the county, would be 4,500,000 pounds. The figures are amazing, but it should not be forgotten that Stanislaus County made over 8,000,000 pounds of butter last year, and it wasn't a good butter year, either. Sixteen thousand cows, and close to five million pounds of butter,—and the Modesto Irrigation district hasn't got its growth yet!

Thoroughbred Dairy Stock

Stanislaus County, and the Modesto Irrigation District especially, has become noted as the home of the finest thoroughbred dairy stock on the Pacific Coast. Dairymen have become stock breeders, selecting their foundation stock from the best breeding farms in the East. A hundred and fifty stock sales have been held in this district in the past six months, the Hillier consignment sale of a hundred registered Jerseys last April being the most noticeable and giving Modesto the rank of the leading dairy cattle market west of the Mississippi Valley.

The Venadera Jerseys

Guy Miller's champion herd of Jerseys would alone give a national reputation to Stanislaus County. Every cow is in the advanced register and the head of the herd, Altema Interest, an animal of the finest breeding, has been for the past two years grand champion Jersey bull at the California State Fair. Pearl of Venadera has just finished a yearly test with a record of 9,968.8 pounds of milk, average test, 6.03; butter-fat production, 601.27 pounds, the second highest producing Jersey in California. Goldie of Venadera, 3-year-old, made 469.4 pounds; Belle of V., 461.8 pounds, and Amethyst of V. 391.3 pounds. Lorna of Venadera was awarded the silver medal of the American Jersey Cattle Club for being the second best producing cow of that breed in the United States in 1911. The herd, in 1913, at the California State Fair, butter-fat test, took first in aged cows, three-year-olds, and two-year-old heifers. On official test last year the herd of twenty cows made an average of 362 pounds of butter-fat. This was worth, at the Modesto creamery, \$2,606.40. This is the kind of blood that is building up the herds of Stanislaus County.



Venadera herd of prize winners. They average 362 pounds of butter fat and some have much higher records.

The Creamcup Holsteins

The Creancup herd of Holsteins of M. M. Holdridge stands at the top of the black-and-whites. Pontiac Burke is the head of the herd and is a sire of great promise. His grandsire is King of the Pontiacs, half-brother of Pontiac Lass, (44.18 pounds in 7 days). His sire's dam is Ruby de Kol Burke, and his aunt is Sadie de Kol Burke, the champion record cow. Novena Creancup and Modesto Cleopatra are cows with records of 60 and 70 pounds of butter-fat per month. Twenty-two cows of this herd have a weekly record in the advanced registry of 18 to 28 pounds of butter in seven days. Every cow in the milking string has an A. R. O. record.

Pigs Preserving Philippine Peace

Hogs are called mortgage-lifters in Kansas. Here they are raised for ornament, on the principle of handsome is as handsome does. The Modesto Creamery maintains a hog ranch of its own, a mile away, on the river. Buying butter-fat above the market price for butter does not leave much margin for profit. So the creamery turns its buttermilk into pork, adding crushed barley to the feed. From 200 to 300 hogs are kept, and with barley at a dollar a hundred and pork at $8\frac{1}{2}$ cents, it is pretty clear that the hogs raise the profits.

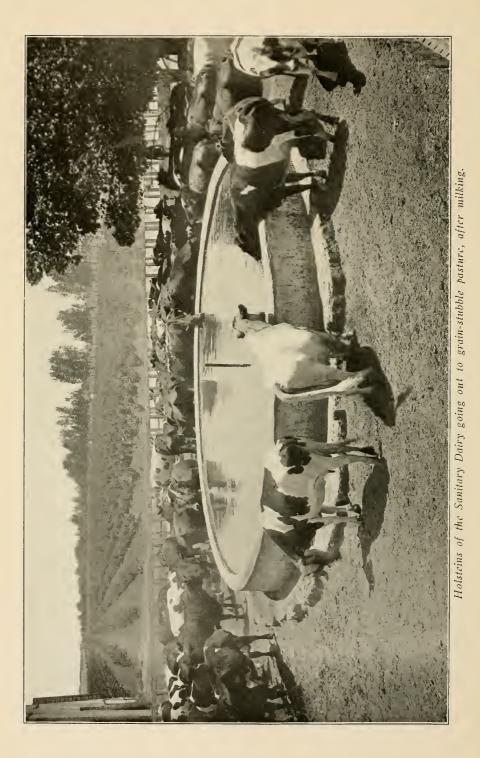
The Duroc-Jerseys of W. A. Daggs, near Modesto, have a wide reputation. In Hawaii, one of the big sugar planters has some of the stock, and in the Philippines some wealthy Moros, retired from the piracy business, are increasing their fortunes by raising red pigs of the stock of the Datto Daggs, purchased by a paternal government at Modesto, U. S. A. Modesto King, Rose May Hansel and Dolly Duroc Dahlia have enough blue ribbons captured at the fairs to make a bed-spread, if they needed one. Mr. Daggs has about 150 hogs and his sales last year were about a hundred head, big and little, at an average of \$22 each. Thirty acres of alfalfa grow the forage, and the nearby creamery supplies the buttermilk.

Peaches and Apricots

Peaches and apricots are the principal orchard fruits of the Modesto district. Here is a sample of the small, or garden orchard: J. S. Rhodes, near Modesto, has four acres of Elbertas which brought him, last year, \$1,929 gross, or \$428 per acre. The expense of irrigating, cultivation, marketing, etc., is figured at 33 per cent, leaving \$1,286, or \$321.50 per acre net. In the past three years the orchard, which was planted in 1907, netted \$2,400, or \$200 per acre, per annum. No artificial fertilizers have been used.

A Monument to Irrigation .- Figs

The McHenry Ranch, or as it is locally known, the "Bald Eagle Ranch," is an example of eastern general farming as applied to the California ranch. Robert McHenry came from New England before the era of irrigation,



bought a big grain ranch on the Stanislaus, introduced blooded stock and planted orchards and vineyards. Among other things he planted forty acres of figs. Then he championed irrigation and some of the old settlers pronounced him crazy and an apostle of destruction, but his lasting monument stands in the irrigated fields, gardens and orchards of Stanislaus County. The fig orchard, forty-two acres of White Adriatics, yields an average of five carloads of thirty tons a season, which are contracted at \$70 a ton, making a gross revenue of \$250 per acre. Practically the only expense is picking (from the ground), and hauling to Modesto and Riverbank. There are also 120 acres of vineyard and an apricot orchard.

Beans Like Good Land

Beans on alfalfa sod or following grain make a paying crop. Shoemake & Warner have 300 acres in black-eyed beans which promise twenty sacks to the acre, or 1,600 pounds. At the ruling price of 4 cents this would make \$64 per acre, and as the straw makes good hay we may credit \$5 more, making \$69 per acre. There are about 2,500 acres of black-eye and red Mexican beans in the county, with fine prospects.

Pushing the Egg Button

"I have traveled from Hudson Bay to the Gulf of Mexico and from coast to coast, and nowhere have I seen a better location for poultry where climatic conditions, soil and feed are all favorable, than here in Stanislaus county." So says John H. Myer, of the Myer Hatchery, between Modesto and Empire. He carries about a thousand White Leghorns and hatches six to eight thousand chicks in a season. Electric equipment is the important feature of the Bald Eagle Poultry Ranch of the McHenry Brothers, on their place west of Riverbank. They have about 1,500 White Leghorns in new and well arranged buildings, one of which is a concrete incubator house where the hatching is done by electricity, the heat being controlled by thermostats. The brooders are also electric heated and the laying houses are supplied with electric light during two hours of the winter mornings to give the hens so much more scratching time. Last spring 2,500 chicks were sold at \$15 per hundred. It is figured that in egg production the average hen makes very nearly \$2.00 per year.

Cost of An Electric Pumping Plant

On the banks of the Tuolumne River, some five miles west of Modesto, W. F. Duffy has installed an electric pumping plant with a 40 H. P. motor and a 12-inch centrifugal pump to lift water fifteen feet from the river and put it on a couple of hundred acres of level land. The plant cost about \$2,000, and taking current from the Sierra & S. F. Electric Power Co., which built a transmission line of six miles to reach the plant, it is figured that it will cost \$15 to irrigate the eighty acres now in alfalfa and oats, or \$.1871/2 per acre, per irrigation.

Modesto, the Irrigation Capital

ODESTO is celebrated far and wide as the Garden City of the San Joaquin Valley, the Spotless Town of Stanislaus, and the Improvement Club's Paradise. And the praise is fairly earned. Modesto is also the garden gateway of the Yosemite National

Park. In a recent article in Sunset Magazine, Alexander Powell said:

"We chose the route (to the Yosemite) through Modesto because I was curious to see the surrounding countryside, which was enjoying, so I was told, the benefits of a modern version of the Miracle of Moses, water having been produced where there was no water before by a prophet's rod in the form of an irrigating ditch. As a result of this sudden prosperity, Modesto is as up-to-date as a girl just back from Paris. Its lawns and gardens have been Peter Hendersonized until they look like the illustrations in a seedsman's catalogue; the architecture of its schools and public buildings is so faithful an adaptation of the Spanish mission style that they would deceive Father Serra himself (the old padre was, I believe, a trifle near-sighted); and its roads would do credit to the skill of J. MacAdam."

The San Joaquin Valley may well be proud of Modesto. With a population of 2,402 in 1900, showing an actual decline of fifteen per cent in the decade, Modesto had 4,034 in the city limits in 1910 and is now credited by the city directory with 8 000. Two of the finest hotels in the interior of the State, fireproof 125-room buildings costing \$150,000 each; six banks with over \$3,000,000 in deposits, nearly half of which is in savings banks; five beautiful parks; water of unusual purity; ten miles of asphaltum-paved streets, wide and arched with elms and sycamores; electric light and gas; septic sewerage system; a free market on the court-house square; a fine Public Library, the gift of the public-spirited Oramil McHenry; numerous churches, notably the First Presbyterian with its Modesto Christian Association, gymnasium, swimming pool, etc.; two daily newspapers, well-stocked commercial houses, and six garages.—and only four hours from San Francisco by express, Modesto is one of the finest and healthiest residence towns in all California.

The manufacturing industries of Modesto are not extensive and are naturally confined to preparing the raw agricultural products for consumption in the distant market. Two creameries, with a monthly output of 255,000 pounds; an alfalfa mill with a capacity of 4,000 tons in the season, and a fruit cannery, enlarged and re-equipped last year for an output of 50,000 cans daily, make a market for but a small part of the products of our farms and orchards. With these products in abundance and of the highest quality, it will be but a short time before the manufacturers of food products will take advantage of the opportunities here presented. It may be added that Modesto has the only locally-owned gas works in the valley.



Eucalyptus avenue, and a small pumping plant irrigating a farm from the Tuolumne river.

Salida

EVEN miles nearer the bay than Modesto, in the richest section of the irrigation district, Salida, with its big alfalfa mill, its grain and hay warehouses and its heavy shipments of vineyard and orchard products, is a town of great promise. On either side stretches a wide expanse of alfalfa, broken by orchards and vineyards. The produce of its dairies is taken by the creameries at Modesto, and the county town is its principal market. In time, Salida will doubtless have its own creamery, and its fruit packing house also.

A Vincyard Pioneer

Thompson Seedless is the name of a grape that is making new history for California. It is an excellent raisin grape of the Sultana class, and also a good table grape and so can be utilized for either market. It is a heavy yielder and commands a price usually considerably above the average. T. H. Kewin was the pioneer in planting this grape in this part of the valley about eight years ago and his forty acres of strong, healthy vines promise an abundant yield, which means seven or eight tons to the acre. An adjoining forty of Zinfandels looked almost as good. Almond trees border the vineyard, ten-year-old Ne Plus Ultra, and will produce at the rate of about a ton to the acre, the trees being loaded down with fruit.

The vineyard of George Covell is another of the early vineyard plantings of the county and one which ranks high in productive value. Here are 500 acres, mostly in wine grapes, that produce all the way from five to seventeen tons per acre, according to seasonal conditions, and bringing from \$12 to \$20 a ton, according to demand and quality. Present market conditions indicate a price of \$15 a ton or more. A few acres of Thompsons and Emperors give great promise. The expense of cultivation, pruning, etc., is estimated at \$10 per acre and picking and hauling to station about \$1.75 per ton. Table grapes cost about \$5.00 a ton for picking and the packing about 35 cents per crate, the crates of 28 pounds bringing 60 cents to \$1.25 f. o. b.

Dairies

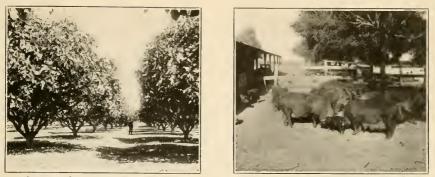
Among the dairies that of J. M. Bomberger will do for an example to demonstrate actual experience in this line. By careful selection and watching his opportunities Mr. Bomberger, who started with a small herd of grades, has got together as pretty a string of Jerseys as can be found, and at no great expense. "It costs no more to raise a full-blood calf," says Mr. Bomberger, "than a scrub, and it costs no more to feed a high-bred registered cow than it does one without a pedigree, but the thoroughbreds will pay better, in every way." Mr. Bomberger is reluctant to boast of his own cows, but he is an enthusiastic advocate of the Jerseys for butter-fat production and says that they will produce 500 pounds of butter-fat at \$8 less cost than the Holstein. As for the calf, he insists that with registered, good performing stock, there is no necessity whatever of sacrificing to the butcher. Good Jersey calves are always worth money, and the dairyman-breeder pointed to a pen full of little fellows worth, he said, from \$50 to \$100 each.

Ten Tons of Hay to the Acre

Ten tons of alfalfa to the acre is the record of A. S. Bomberger, but this is exceptional, even for this distinctive alfalfa district. The field is 48 acres, sown four years ago. The soil, a deep, rich, sandy loam, benefiting somewhat by sub-irrigation. Up to October 25th last the alfalfa was irrigated four times and was cut five times, with the total yield of 478 tons. The crop brought \$5,353.65, and deducting expenses, a net of \$4,053, or \$84.44 net per acre. No fertilizer was used other than a slight top-dressing of gypsum. About half the field was top-dressed the previous winter with stable manure, ten loads to the acre. A neighboring dairyman pointed out, however, that these returns would have been doubled if the alfalfa had been fed to cows producing a pound of butter a day, and the fertility of the land would have been increased. John Velthoen has done as well.

Alfalfa Mill

The Salida alfalfa mill, with a capacity of 5,000 tons in the season, and two smaller mills grinding about as much, make a home market for the surplus crop. There is a good market, by the way, at Panama for American alfalfa, but the home market is better. The alfalfa meal is simply ground alfalfa, without any admixture whatever, in a form concentrated, easily transported, and keeping indefinitely in a dry climate. There is no loss in the grinding, but rather a saving, as in feeding the hay there is a large amount of waste. The eastern farmer buys California alfalfa meal and by diluting with cotton-seed hulls, black-strap or corn fodder he has the best stock feed in the world. It is largely used also for hog and poultry feed, and in limited amounts for horses.



Smyrna figs pay \$150 an acre, and Duroc pigs pay even more. Both are big money makers.

Empire

MPIRE COLONY" it was a year ago, and five years ago a stubble field. A colony of the church of the Brethren, commonly known as Dunkords, from Indiana and other states of the Middle West, settled here, bringing with them the Proverbs of Solomon. They sowed their alfalfa before they built their houses and now they are cutting five or six crops a season and stacking it up at the rate of six or eight tons to the acre. There are numerous members of other religious denominations also and a general spirit of hospitality and neighborliness prevails.

Empire is on the Santa Fe, five miles east of Modesto, with which it is connected by the Modesto & Empire Traction line. In 1913 there were shipped out 314 cars of grain, hay and fruit, besides express matter, and 651 cars of freight were handled on the traction line.

The Old People's Home

The Brethren church of California planned to establish an Old People's Home. Good climate, good natural drainage, with no standing water; absence of malaria and other similar diseases; abundance of water for all purposes, pure water for domestic use, and convenience of transportation, were requisite. After a careful examination of many sites the committee decided in favor of Empire, and here the Dunkords will undoubtedly establish a record for longevity.

Alfalfa Avenue

All along the Traction line from Modesto to Empire there are fields of alfalfa, orchards, gardens and pretty bungalows, and what was a short time ago a country road is now a suburban avenue, and plans have been made to continue the road to Waterford and Hickman and ultimately to La Grange. Tree-bordered and lined with pretty homes set in emerald fields of alfalfa, among orchards of peach, almond, apricot, plum and fig, it would be hard to find a more beautiful or prosperous locality in California.

An Early Picture

The San Joaquin Valley folder of the Santa Fe, published in 1911, said, in describing Empire :

"Empire Landing, on the Tuolunne River, was known of old for its big freights of wheat and barley. Now a finer grade of goods goes by rail. Farms have grown up on the grain fields like mushrooms in the night. Empire Colony is composed almost entirely of Dunkords, and where they settle the earth gets busy. Last year in dry pasture or stunted grain; this year green with alfalfa! There are about two hundred families altogether, and it is noticeable that they build their barns first. A tent does for house, or the tank-house under the wind-mill. The following thumb-nail stories will illustrate their industry and prosperity : Rev. J. W. Deardorff came from North Dakota and was the first to settle here in the spring of 1909. He got his forty acres of prairie seeded that summer and last spring cut his first alfalfa, a ton and a half to the acre, which sold for \$6 per ton in the field. The second crop would probably make two tons to the acre and should be worth \$7 per ton. He has plenty of water and will likely make six cuttings. Silas Spyres put fifty-five acres in alfalfa last summer. He had cut his first crop and in twenty-eight days the second crop was standing three feet high and he was cutting it, making two tons to the acre. S. T. Barkley, experimenting on a patch of seven-eighths of an acre, with a dressing of gypsum, cut 6,500 pounds of alfalfa the first crop. Not one man in a thousand in this country uses any fertilizer. Alfalfa is the only crop raised here as yet, excepting the little gardens, but keep your eyes on Empire."

An Alfalfa Scrmon

If the farmer-preacher should go back east and tell of his "forty" of alfalfa and another eighty leased, from which he is now getting two tons to the acre at a cutting and is likely to make five cuttings nearly as good during the season, they would have him up before the elders. But he could show them. He quotes John 1-46: "Come and see." He is an apostle of optimism. When his people complain that hay is low, he answers: "That is right; hay should be low when it is plenty. But meat, and butter, and poultry and eggs, are not low; turn your alfalfa into butter-fat; sell cream, and hogs, and eggs, and all the time your land is getting richer and producing more alfalfa, and you will be selling more cream. Remember the parable of the talents." The Reverend Jacob is a good pastor, and a good farmer.

Two Thousand Flemish Giants

Royer & Strom's rabbitry is said to be the largest in America. They are some rabbits, sure enough. There are, or were at the last count, 2,000 of them, from new-hatched to does weighing fifteen pounds. Green alfalfa from a $3\frac{1}{2}$ -acre field with a ton and a half of grain a month is their feed. Breeding stock are sold at \$1.50 to \$15 each and San Francisco hotels and



Even if hay is low, your land is getting richer and producing more alfalfa, and dairy products are in good demand.

restaurants offer a market at 10 to 15 cents a pound, live weight. It is calculated that the cost, including labor, is close to the former figure. The Empire rabbitry ships fancy stock to all the Pacific Coast states and to New Mexico and Texas.

Fifteen Pounds of Butter per Week

The Merci Ranch, east of Empire, has been long noted for its highclass Holsteins. The herd has averaged from February last 6.7 gallons, testing from 3.5 to 4.2, which is equivalent to a little better than two pounds per day. Winnie Cornucopia has a weekly test of 668.9 pounds of milk and 23.94 pounds of butter per week, and the next best is 22.05 pounds. All the milking cows average above 15 pounds a week. The feed is all alfalfa. Norman draft horses, Poland-China hogs and poultry are other features of the Merci ranch, together with peach, pear and fig orchards. The 160 acres of alfalfa make five crops a year, averaging over a ton to the acre and sometimes a ton and a half.

Grapes and Almonds

Not far from the Merci Ranch, on the Waterford road, is the vineyard and almond orchard of J. J. McMahon, an old resident of the county. There are 190 acres in Zinfaudel and other wine grapes, and 120 acres in almonds, eight years old, with another orchard recently planted. There are 40 acres in pears that produced last year 410 tons, selling at \$40 per ton.

Poultry, and also berries of all kinds, tomatoes, garden beans and sweet corn, offer good prospects to the farmer on few acres, and many are engaging in these kinds of intensive agriculture. The market is an inviting one; conditions are good and there are no indications of a declining demand.

Claus is a brand new town between Empire and Riverbank, on the Santa Fe. It has a fine school and being in the alfalfa country it has numerous dairies. It will soon be in the class with its neighbors on either side, and meanwhile it is about as good a place for an energetic young man to settle in, with a share in directing its growing destinies, as any place on the map. [35]

Turlock Irrigation District

HE Turlock district was the pioneer in completing an irrigation system under the Wright Act, putting the water under the proprietorship of the land instead of under corporations organized for profit. By this system the irrigation water, necessary for the production of crops, is made a charge upon the land, the same as roads and bridges. The Turlock district is the largest of the Stanislaus County irrigated areas, lapping over into Merced County to the Merced River. It includes 176,210 acres, or about half the size of the average Iowa county. The area actually irrigated is about 100,000 acres and it is estimated that there is about as much land adjoining that will ultimately be taken into the district when the irrigation works are enlarged.

The bonded indebtedness for the construction of the works is but \$15.11 per acre, the lowest of any irrigation district in the West. But this does not mean a cheap district. There are 223 miles of canals, and the Davis reservoir, costing \$475,000, has a capacity of 50,000 acre-feet.

The Pioneer Era Passed

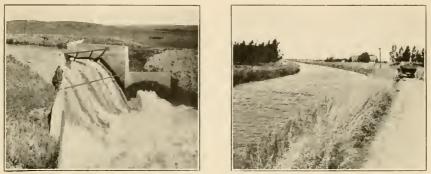
Green fields have replaced barren wastes; jack-rabbits and horned toads have given their haunts to the keeping of dairy herds and chickens. Fifteen thousand people, mostly Americans and Swedes, have come and schools and churches have sprung up in all parts of the district. In 1903, no less than 3,403 carloads of produce were sent out and the total value of the freight and express shipments was figured at \$2,480,700. The Turlock district is not for the pioneer. The period of pioneering is past. Telephones and rural mail routes run to all parts of the district. Electric power is convenient. The purest drinking water is found at fifty feet or less. It is the age of good roads and the automobile; of the small farm and intensive farming. The opportunities here have been made by water, the matchless California climate and a good soil, a sandy loam of granitic origin.

Alfalfa the Great Crop

"Everything grows in the Turlock country." Alfalfa is the great crop, and there are 67,680 acres of this "best fodder" in the district. It costs about \$25 per acre to check the land and seed alfalfa, and it lasts for seven or eight years, without re-seeding. Artificial inoculation is never necessary. As it is the custom of neighbors to exchange labor at haying the cost of harvesting is small. Many irrigate after each cutting, while others find the use of less water gives better results. Although a thousand cars of alfalfa were shipped from this district in 1913 this is a very small portion of the crop, the major portion being fed to stock.

Dairying Is Profitable

Alfalfa is the backbone of the dairy industry, for it is a rich and inexpensive food. When the Turlock farmers began dairying they were short



Irrigating canal near the foothills, and a lateral in the irrigated country.

of money, for they were paying for their farms. They picked good grade stock and the best sires. They studied breeding. And now the awards at the State Fair, the verdict of all experts who have visited this section, and the prices foreign buyers pay for dairy stock have convinced them that their herds are graded to a high degree of excellence. Horses, and hogs as well, are making a name for the breeders. The local creameries and outside buyers bid for the butter-fat and make a good market. The average price for 1912 and 1913 was 34 cents. Many dairymen have contracts to supply sweet cream and milk for the San Francisco market. The average cow returns \$10 a month, in addition to the income from poultry and hogs that consume the skim milk. A little additional Egyptian corn for the poultry and hogs, with some pumpkins, citrons or melons also for the latter, and the extra profit from the dairy is considerable. Hog and poultry diseases are rare.

Peaches

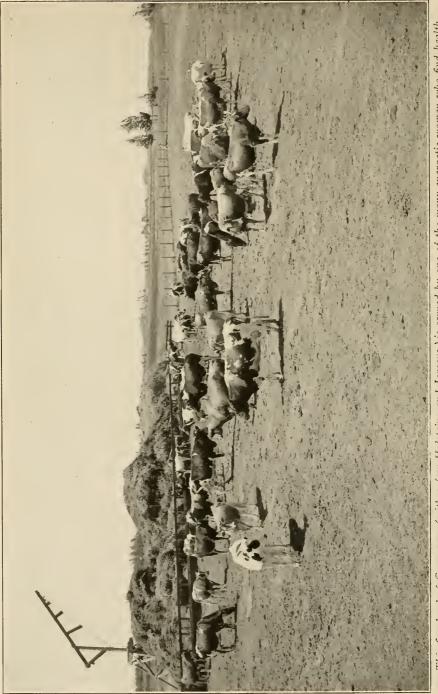
Peaches are the most valuable of the orchard crops of the district. In 1913 the value of the shipments was \$411,553, and they will be much larger this year. It costs \$25 an acre to plant peaches; they begin to bear in four years and maturing in eight years, yield seven or eight tons to the acre, worth \$20 to \$35 per ton.

Figs

The Smyrna, or "Calimyrna," Adriatic and Mission figs do well. Fig culture is so recent that the trees have not yet shown their production at maturity, but they are now yielding two tons to the acre, worth \$80 or more per ton. Olives, apricots and almonds are among the other orchard products that pay well.

The Vineyard

Grapes paid the Turlock district \$232,000 in 1913, the larger portion being in wine grapes. It costs about \$15 an acre to plant a vineyard and at maturity, or in seven years, they yield seven or eight tons to the acre. The 1913 price was \$12 to \$15 a ton. Ten-year contracts can be made at \$10 per ton, or more in the case of vineyards of established reputation. Shipping



This fine herd of Guernseys (with a few Holsteins and Jerseys,) is owned by one of the many energetic women who find health and profit in the dairy stock business.



These famous Dutch-Belted cows, like the Guernseys on the preceding page, are a woman's pets.

grapes yield 350 to 400 crates to the acre and bring 75 cents to a dollar a crate.

Sweet Potatocs and Melons

Seventy-five per cent of the California sweet potato crop is grown in the Turlock-Merced section. The shipments last year were 283 cars. The yield is from 125 to 225 crates of 100 pounds per acre and bring 80 cents to \$1.25 per crate.

Turlock is the melon center of the West. In 1913, 1,092 carloads of watermelons and cantaloupes were shipped from this district. A fair yield of watermelons is 15 to 20 tons, worth, on the average for the past three years, \$8 per ton. Large melons bring \$12 and \$14. Cantaloupes yield from 150 to 300 crates, and sometimes as high as 500 crates to the acre. They were worth, average for the season, 65 cents per crate in 1912, and 85 cents in 1913. This year's prices range a little above those of last year. The Cassaba is now raised extensively and the Persian and Turkish melons have recently been introduced and are very successful.

Intensified Farming

Turlock is the home of intensified farming, and of diversified agriculture. All crops are grown with success. Cereals; wheat, barley, rye, oats; many kinds of garden truck, including beans, cucumbers, squash, tomatoes, cabbage, cauliflower, celery, peppers, cucumbers, etc.; berries, strawberries, loganberries, blackberries; and all kinds of stock feed.

Turlock

URLOCK, a city of 3,000, is on the main line of the Southern Pacific Railroad. It is the largest city and the commercial center for the Turlock Irrigation District. Having been built recently, it reflects the latest ideas in city building, having a municipal water and sewer system, more miles of paved streets than any city of its age and size in the United States, an exceptional street lighting system, and many



The river bottoms of Stanislaus are noted for the finest almond orchards in California. The product is a ton to a ton and a half to the acre.

beautiful homes. Here is located a cannery, creamery, gas plant, two banks, two newspapers, a number of splendid churches, two grammar schools, a splendid high school, and many stores whose stocks rival those of the cities.

A Week's Shipments

Shipments from Turlock for the week ending July 25, 1914, averaged thirty-eight cars per day. The value of one day's shipments, which may be taken as an average, was as follows:

Watermelons, 18 cars at \$120\$	2,160
Cantaloupes, 17 cars at \$350	5,950
Peaches, 4 cars at \$260	1,040
Cream	1,568
Butter	459
-	
Total\$1	1,177

Ceres

ERES discloses its origin, or at least its history, in its name. It was a settlement in a rich grain farming country, and its string of big grain and hay warehouses on the Southern Pacific track are filled to the roof this harvest season of 1914. Ceres is now a great garden of peach orchards, with almond, apricot, fig, plum and other fruit, with vineyards of forty, sixty and over a hundred acres. Its orchards supply the canneries of Turlock, Modesto and others at greater distances and it will soon have one of its own, as well as a fruit packing house. These industries grow in a night in the San Joaquin Valley. Ceres has a fine grammar school and is building a new high school of the most approved architecture. The post office has lately been advanced to third class, and a lively newspaper looks after the local interests. The largest creamery in the district is turning out about a ton and a half of fancy butter daily for the Los Angeles market and distributing about \$15,000 every fortnight among the 180 or more dairymen of the district.

The Whitmore Ranch

A description of the Whitmore "ranch" will apply to the entire neighborhood, for it represents the old and the new agriculture, and the dairy industry and the fruit industry as well. Of the 1,000 acres, 270 are in alfalfa, and about 200 in grain annually. An alfalfa region is a rich grain country as well, for the plowing up and re-seeding, which is done about every six or eight years, gives heavy crops of barley and oats and silage corn. The dairy herd consists of about fifty high-grade Holsteins, headed by a couple of thoroughbred bulls,—and no others are kept now in this country.—producing a little better than eight-tenths of a pound of butter-fat daily. Some

of the cows are doing better than two pounds daily, which puts them in the 600-pound class. But they average \$8 per month, for the milking period, besides the calf, which is worth from \$8 to \$25, the full-bloods bringing the latter price. Hogs are an important adjunct of the dairy, consuming the skim-milk and pasturing on the alfalfa. The hog sales amount to about \$275 annually. The cow feed is straight alfalfa, with silage in the winter and spring. There are two silos of 175 tons capacity each, and 55 acres are in fodder corn, irrigated and cultivated, to fill the silos.

Peaches, Apricots and Grapes

The orchard of 250 acres is devoted mainly to cling peaches for canning, and these bring from \$25 to \$28 per ton at the cannery. The crop runs from five to ten tons per acre. Apricots, of which there are ten acres, bring \$30 per ton. Apricots may be figured here at seven or eight tons to the acre, with a full crop three years out of five. "Cots," and peaches also, have three markets, the cannery, the fresh-fruit market, and dried. The vineyard, of 140 acres, is divided among Malagas, Thompson Seedless, Tokays and Emperors, and an experimental planting.

Many Orchards

All around Ceres are orchards, mostly peach, and some apricot and fig, and almond as well. W. H. Harstine, who came from Kansas some years ago, has a 20-acre place, with 14 acres in peaches, six years old. The orchard began to bear at three years, producing \$500, and the next year \$800. This year the indications are for six or seven tons to the acre. They will bring from \$25 to \$30 a ton at the cannery. The orchard is irrigated twice in the season, usually, water enough being let on to flood the checks. The whole orchard can be irrigated in five or six hours, and the soil, being a deep, sandy loam, takes the water quickly.

E. G. Stone, from Rochester, N. Y., has a fine old orchard, drying peach. By good care and cultivation this orchard is made to produce seven and eight tons to the acre, and has a record of ten tons. Other orchards in the neighborhood are fully as good. These orchard men, it may be remarked, employ none but white labor as a rule, and there is no settlement of non-whites in the neighboorhood, or in fact of any non-English speaking people.

A Big Wine Vineyard

The vineyard of A. B. Shoemake, though small compared with the big thousand-acre vineyards of the wineries, is considered large in the irrigated districts of Stanislaus County. It includes 560 acres altogether, with 320 acres near Ceres. The varieties are principally Zinfandel, Feherzagoes and Thompson Seedless, the latter being available either for the fresh grape shipping, for raisins or for winc. The vineyards are five years old and the indicated yield is about seven tons to the acre, which will be increased to eight and ten tons as the vines grow older. Figs are in a class by themselves, and the Ceres district is one of the best fig regions of the State. Figs are slower in coming into bearing than most fruit, but are long lived, steady bearers, have few insect or other enemies and cost less for care and cultivation than other fruit. One of the pioneer fig raisers in the Smyrna Park section is Cyrus Case, originally from the State of Maine. There are ten acres of Smyrna, or "Calimyrna" figs, producing about a ton and a half to the acre, measured in dry figs, and increasing every year. Half the crop is sold fresh, packed in one-layer boxes (8 pounds), which bring 75 cents to a dollar in the Eastern markets, which is equivalent to 18 to 25 cents a pound for the dried fruit. The dried figs, which are picked up as they fall from the tree, are contracted for at \$100 a ton, a good price, considering the little labor in handling. The orchard is usually irrigated once and is then cultivated. The returns are about \$150 or \$160 per acre and are increasing with the growth of the trees and the improvements in marketing.

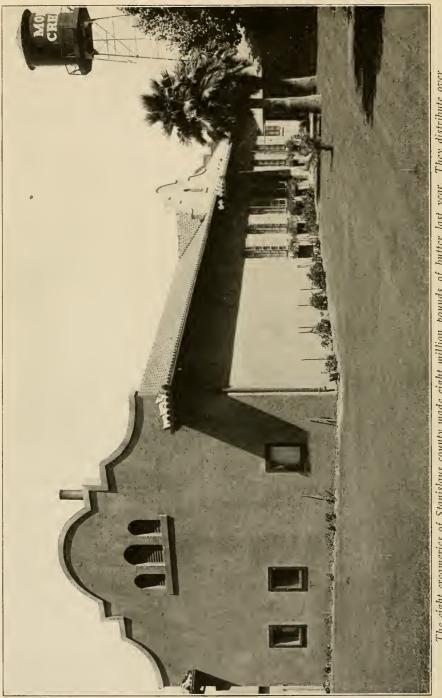
Poultry and bees are special industries of the Ceres neighborhood, three or four carloads of honey being shipped annually. H. O. Brown, of the Stanislaus Poultry Association, and W. A. Gilstrap, secretary of the county Bee Keepers' Association, can give interesting particulars.

Keyes

Keyes lies in the center of the Turlock Irrigation District, midway between Turlock and Modesto. The adjoining country is remarkably productive in beans, watermelons, cantaloupes, sweet potatoes, alfalfa, grapes and fruit, especially peaches. This season there will be between 700 and 1,000 carloads of sweets, melons and cantaloupes shipped from Keyes. The creamery, owned and operated by local people, was opened on the first of July, 1913, with an output of 450 pounds of butter, and on the same date, 1914, the output was 2,750 pounds. The butter is shipped to Los Angeles where it ranks at the top of the fancy trade.

J. A. Goodall is one of the leading Jersey breeders, coming from Illinois two years ago and starting in dairying. He has confined his herd to registered Jerseys and now has some of the finest stock on the Coast, with a number of animals from the famous Hood Farm, of Massachusetts. As an example of success in beans, S. C. Peck put in fifty acres last year, clearing \$2,000. Grown in rotation with other crops, beans represent only half the season's product.

The school shows evidence of the rapid growth of the community in the temporary or "out-door" school building put up last year adjoining the old school house, with another one building. The district now employs six teachers, where two years ago there was but one teacher with twelve pupils.



The eight creameries of Stanislans county made eight million pounds of butter last year. They distribute over \$100,000 to the farmers every two weeks.

Denair

HE traveler from the south on the Santa Fe, after passing through many tedious miles of dry grain country, spies, as the train crosses the Merced River, wide expanses of restful green. He sits up and takes notice. In the corrals he sees small herds of Jersey or Holstein cows, and he also sees orchards and vineyards, which, if in midsummer, as the writer is telling this story, are breaking down with their loads of fruit. The traveler inquires what place they are coming to. "Denair," is the reply.

A Country of Good People and Small Farms

Like its neighbor, Hughson, a few miles north, and in fact in common with all the rest of the district, Denair is a country of small farms and good homes. And like all the rest it is "dry," with an industrious, white, churchgoing community. There are three churches: Friends, Christian and Mission. For a couple of years when the town was new, the different congregations worshipped under one roof in Christian harmony, and this harmony, which exists today, indicates that it is a community of brotherly love. Denair has good schools, including a high school which is maintained in the bank building; a bank, a creamery, a newspaper and a live chamber of commerce.

Farms are small,—fifteen or twenty acres, while many of five and ten acres are making a good living for their owners. Dairying, poultry and fruit are the leading industries. Hogs as an adjunct of the dairy, are very profitable and Denair has the record of being the leading hog-shipping point of the county. There are some 75 shippers of cream and milk from Denair, shipping about 200 gallons of cream and 300 gallons of milk daily.

The Soil-Especially Adapted to Alfalfa

The soils of the Denair-Hughson-Empire country (or in other words, the strip bordering on the Santa Fe railroad, lying between the Turlock-Modesto lands along the Southern Pacific and the land at the base of the Sierra foothills) is a little heavier, or more loamy than that on the west and a little better adapted to alfalfa. And it is no less suitable for fruit and vegetables. But, as the doctors say, alfalfa is "indicated."

What Fifty Cows Can Do

An experienced dairyman says: "Fifty cows on fifty acres of alfalfa should average 270 pounds of butter-fat each in a year, making 13,500 pounds. These are no fancy figures, for individual cows might double this production. At $32\frac{1}{2}$ cents, the average price for butter-fat in San Francisco for the past five years, this would make \$4,387.50 for the herd. Deduct feed at \$45 per year per head, and two men at \$40 per month and board, \$1,560; total, \$3,810, leaves a credit of \$577, without allowing anything for the calves, hogs and poultry. With only one man, which is nearer the rule, there would be \$780 added to the credit side. There is too much variation in the receipts for calves, hogs and other by-products but these, after all, represent in the best dairies the real profits of the dairy." The hog shipments should bring in about \$1,000 a year.

Jerseys of High Degree

Here is a man from Illinois, Mr. J. N. Lester, with herds of registered Jerseys headed by such famous sires as Gertie's Son and Marquis Golden Lad—names that will be recognized by the initiated. He says: "My herd at Denair averages me better than a pound of butter-fat a day. I have had experience with dairying near Chicago, Illinois, where I operated a dairy and sold sweet cream at 36 to 54 cents for butter-fat. I had silos and fed a complete ration, but it was not as profitable as my exclusive alfalfa ration in the San Joaquin Valley. If you tell the dairymen of Indiana and Illinois the facts in regard to the results we get from an exclusive alfalfa ration in this region, they may regard it as a 'California story,' but it is all right. * * You will be doing these eastern farmers a favor if you get them out here, and I will back you up with the facts." Mr. Lester also has a dairy at Riverbank, and one in Kings County.

Seven Cows; Eight Hundred Dollars

Mr. J. Lankard, who came from Missouri by way of Los Angeles (which is the way most Missourians are shown) claims a better record, which is often done with a smaller number of cows. He has fifteen head of Jerseys, including young stock, and eight milking cows brought him \$800 last year. He has twenty acres of land and he makes it all count.

Mrs. W. M. Leland makes a specialty of Guernseys, one of the few herds of this breed in the county. They are heavier than the Jerseys, and have more the characteristics of the Holsteins, with which the herd is mixed, numbering altogether about sixty head. The cows are pastured on alfalfa, though the greater part of the 120 acres is cut for hay.

A Little Bit of Intensive Farming

N. A. Stimson hails from lowa, but his name gives him away for a New Yorker. He came here only four years ago and bought seventeen acres of grain stubble. He has ten acres of alfalfa, two acres of strawberries and an acre and a half of peach orchard, with blackberries between the rows. He raises pumpkins among the blackberries, so that there is not much land lying idle. Mrs. Stimson takes care of the poultry and is raising a couple of Jersey calves. Calculating roughly, the strawberries bring in between \$400 and \$500, the blackberries \$300, and the orchard about \$150. The poultry are good for \$100 more.

A Good Orchard Report

The Shafer orchards, near Denair, have 50 acres in peaches, 30 in apricots, 14 in plums, 6 in cherries, and 40 acres in Malaga grapes, with



The schools of Stanislaus county are not excelled anywhere. These two are at Patterson and Newman.

five acres in alfalfa and ten or twelve acres in oats and milo for the stock. This was the first year for the apricots (Tiltons), and they yielded 45 tons, at \$30 a ton. The cherries bear well and bring 7 and 8 cents a pound. The Kelsey plums are heavy and sure bearers, making eight and ten tons to the acre. The vineyard will make five tons per acre this year and the crop is already engaged at \$20 per ton. f. o. b. The vines are young and should produce eight or ten tons per acre next year. The orchards are surrounded by a border of red gum (eucalyptus), five years old and forty or fifty feet high, some of the trees being a foot in diameter. Home labor entirely is employed in the orchard and vineyard and the best of conditions prevail. A system of thorough cultivation is followed, with two irrigations per year. (See illustration of the apricot side of this orchard.)

Poultry and Gardens

There is a very well founded prejudice against associating fowls with gardens. Here, however, by the liberal use of wire netting, people manage to have beautiful and productive gardens and quiet, well-behaved fowls. P. T. Nye, who lives comfortably if not luxuriously in his tank-house, shows a pretty garden well stocked with roses and a yard of White Leghorns. His poultry account for last year showed 3,914 dozen eggs from 355 hens; sales, 3,788 dozen, \$926.60. Cost of feeding, \$1.26 per hen, profit per hen, on sales, \$1.37, or including home use, \$1.50.

Hughson

UGHSON is on the Santa Fe, seven miles north of Denair and 113 miles from San Francisco. It is the northeastern section of the Turlock Irrigation District and has a population of about 600, and every one counts. Six years from the grain stubble, Hughson has a bank, a hotel, a newspaper, a milk-condensary, four churches, grammar and high school, and a goodly number of well-stocked business houses and shops. Regarding the bank, it may be said that it was started in the new-hatched town three years ago by a couple of Kansas hustlers, and now has deposits of close to \$100,000, which is a good indication of the productiveness of the land.

A Cream Center

Hughson grew out of the subdividing of the old Hughson ranch of 2,160 acres in 1908. In a short time a hundred families, mostly from the Middle West, had occupied the country with farms averaging twenty-five acres or less. On the ten thousand acres tributary to Hughson it is estimated that there are fully 3,000 dairy cows, of which about 1,200 are supplying the milk condensary, established by local enterprise and capital, which ships both condensed milk and sweet cream to San Francisco. Much cream is also collected by the various creameries that are competing for the custom of the dairies.

A Little Dairy Record

Nine small dairies in the neighborhood, running two to twelve cows and totaling 66, show an average of \$10.64 during the milking period. These were mostly grade cows, with no extra care or feed, and costing their owners nothing but the labor of cutting half a ton of alfalfa for each cow per month, and the milking and care. Indeed, the writer was shown one dairy, not a model one by any means, which managed to get along with only land enough for a corral. The owner had got together half a dozen cows and by buying refuse hay succeeded in coaxing his cows to provide him with a living, by turning hay worth \$1.50 into butter worth \$8 or \$9. Which shows that neither broad acres nor towering silos are absolutely necessary in the dairy game.

Some Sample Dairies

Let us look at some of these dairies. Here is F. D. Keeney, for example. He keeps thirty head of stock on twenty acres. It was the 5th of May when the writer visited his place and his little patch of Peruvian alfalfa had already been cut twice, yielding a ton and a half to the cutting. He milks eight Jersey cows and they give him ten pounds of butter-fat a day.

George F. Kendall came from Washington, where he had been handling good money in a bank for several years. But it was all other people's money, and he wanted to handle some of his own. So he came here two years ago and got a little place on the oat stubble, building a barn and sowing some alfalfa. He got a small Jersey herd and is now milking twelve, including heifers and strippers, which average a little over a pound a day. He has done all his own work until this year, to the benefit of his health. He has been living, Swiss fashion (which is very much the fashion in Stanislaus), in one side of his barn, but will soon have a neat little bungalow.



Pigs in clover, with peaches on the side, is a pleasant game to play for the man who has a shop in town.

An Alfalfa Ledger Account

The local secretary presents the following ledger account of nine acres of alfalfa on the farm of L. P. Payne, in 1913:

Credit, 59 ¹ / ₂ tons of alfalfa, sold at \$9 per ton	.\$535.50
Debit, Irrigation, state and county taxes\$27.00	
Labor, cutting and stacking	
" discing and irrigating 25.00	142.00
Net receipts	\$393.50

Mr. Payne paid \$250 an acre for this land in 1912 and he is now getting a net income amounting to 8 per cent on a value of \$546 per acre, and his total taxes, please notice, amount to \$3 per acre.

A Profitable Dairy

And this: W. D. Longley has thirteen cows that have averaged 16 pounds of butter-fat per day for six months. Lowest price, 30 cents; highest. 43 cents; average, 38 cents, at the creamery. Feed, alfalfa only, not quite half a ton a month. This gives an average of \$14.03 per month per cow, and a return of \$28.06 per ton for the alfalfa, not counting labor. This would be greatly increased by crediting the pigs and poultry. Pigs are bought at eight weeks old for \$2.50 to \$3.00; fed waste alfalfa and skim milk for five weeks and sold at about 125 pounds weight at 8 cents. In other words, 8-cent pork is produced at a cost of 4 cents or less. The skim milk is also fed to growing calves and chickens.

Diversified Farming

There is so much orchard in and about Hughson that if one had not seen the dairies he would call it distinctly a fruit country. And all this country, whichever way you go, is so checkered with orchards and vineyards, with alfalfa checks and melon patches, gardens and bean fields; dairies and poultry farms, grain and pasture, that you cannot say whether it is one or the other, and the only name for it is diversified farming—and intensive agriculture. These farmers do not put all their eggs in one basket. They do not "make a killing" on one special crop one year and then go broke the next. It keeps them hopping to keep up with the procession and they have no time for trips to Europe (some of them go, though, all the same), or even to go fishing, but they have some produce to sell every week in the year.

Grain and Horses

Milton Gross came here a few years ago from Pennsylvania and bought a small place near Hughson. He set out a little vineyard and a mixed orchard. Oat hay looked like a good thing to him and he put in ten acres. He cut thirty tons and sold it at \$18 and \$18.50, making \$547.50. He followed the oats with white beans, harvesting 106 sacks of 90 pounds, which sold for \$3.90 a hundred, making \$372 more to add to the credit, and a total of \$919.50 from the ten acres. He is now getting an income from his fruit and has also put in some alfalfa, which nobody can do without.

Olives a Sure Crop

"What's the matter with olives?" asked the writer. There is nothing the matter with olives; not even scale. The experienced olive man turns up the underside of the leaves in an olive grove to look for scale, though in most cases he need not take that trouble. A glance suffices here, for the rich green, healthy foliage shows that there is no insect pest here. The olive, like the fig, is a long-lived tree, a constant bearer, and will stand a great deal of ill-treatment, which it usually gets. Like the fig it requires plenty of sun and air and is usually planted in borders. The smaller varieties are sold for oil, at about \$40 a ton, and the larger kinds go to the pickle factories at prices ranging from \$80 to near \$200 a ton, according to quality and ripeness, the demand now being for ripe olives. There is a risk, however, in holding the fruit too long, as a frost may catch the olive man if he don't watch out, and then his crop goes to the oil press.

The Hickman Country

ICKMAN lies near the south bank of the Tuolumne River, just south of Waterford, and all that has been said above of the bright prospects of the latter apply also to Hickman. But it may be said further that Hickman has advanced in the march of progress and is already tasting some of the rewards that belong to an up-todate and wide-awake community. One has but to look at the wide and brimming canal, the main artery of the Turlock Irrigation District, and the orchards and alfalfa fields which border it almost from the outlet of the reservoir down to the valley floor, and at the fine new grammar school which testifies to the high intelligence of the people, to know that Hickman is the center of a very productive agricultural district and a growing population of up-to-date people.



One of the two large grammar schools at Turlock and an almond orchard near Oakdale.

Rich Sandy Loam

Surrounding the town of Hickman are some twenty thousand acres of sandy loam. Almost a tenth part of the region is rich bottom land along the Tuolumne River. Toward the west are found some of the best sections of the Turlock district, and some four miles eastward begin the rolling hills that are producing large crops of cereals to swell the warehouses of Hickman and provide grist for the mill. In variety and quality of soil, for general agriculture, for alfalfa, for deciduous or citrus fruit, conditions in the Hickman district are not surpassed anywhere in the State. While not all the soils in this section are first class, and some soils are better for some crops than for others, it will all, when properly prepared and irrigated, produce good erops of alfalfa, grain, etc. The soils are loams of varying consistency, from the dark brown, heavy Oakdale sandy loam to the lighter Fresno sandy loam, entirely free from alkali and usually of good depth.

The Fertile River Silt

Along the bottoms of the Tuolumne are deposits of silt soil with a depth of twelve to fifteen feet to water, which are unsurpassed in any country for fertility. Crops are grown on these bottoms without irrigation. Corn (maize) grows sixteen feet high and produces fifty to seventy bushels to the acre. Kafir corn, or "Egyptian," beans, early potatoes, tomatoes and vegetables of all kinds are also very prolific. The Bartlett pear finds here a congenial home and not only produces heavily but has a color and flavor not found in the valley. Cherries, apples and plums also do well.

Roads and Transportation

The roads are hard and smooth and are maintained at a small expense. From all the east side, where the heaviest crops of grain are produced and where the orchards of the future will be located, it is an easy down-grade to the railroad. Besides the Southern Pacific, the Modesto & Empire has surveyed an extension from Empire, on the Santa Fe, eastward to Waterford, and it is planned to carry the line on to La Grange. This will not only connect Waterford and Hickman with the county seat, but will give competing service on two trunk-line railways.

The Hickman Ranch

Hickman is the home, or business district of the famous Hickman ranch of eleven thousand acres, owned and operated by the Louis M. Hickman corporation. While primarily a scientifically operated grain ranch, the lands have demonstrated that olives, figs, oranges, grapes and all kinds of fruit grown in California may be successfully produced. But, as explained by Prof. Wickson, circumstances and market demands called for other crops and they have not got around to commercial fruit growing. The ranch has raised large crops of grain and hay, and never better than the present year, and fine stock as well. The owners, however, recognize the new era of small farms and accept the change in the modern spirit. In a short time the ranch will be subdivided and offered to newcomers at prevailing rates.

Electric Power

In these days, the man who is located at a distance from a power line is as much isolated as if he were away from the railroad. The main pole line of the Yosemite Power Company, taking its power from the Tuolumne River, traverses the Hickman district, offering ample power for running machinery, pumping plants and all farm and dairy work, as well as lighting.

Artesian Wells

As though the irrigation ditch were not sufficient, they have developed several artesian wells in the Hickman neighborhood, which will have the advantage of a never-failing supply of the clearest and purest of water.

The Oakdale District

HE Oakdale district is the newest of the Stanislaus County irrigation communities, having first tasted the blessings of water in 1913. It includes 70,000 acres on the northeastern side of the county, lying under the Sierra foothills. The soils are for the most part of a heavier texture than those of the Modesto-Turlock districts. There is more clay-loam and greater areas of sedimentary or alluvial loams. Having an elevation of about 200 feet on the upper side and with bluffs fifty or sixty feet above the Stanislaus River, drainage is amply provided for. The country shows a great variety ; wide stretches of level or slightly rolling upland, and broad benches of river-bottom, especially adapted for truck gardens, corn, potatoes, cherries, almonds and deciduous fruit.

An Irrigation Partnership

The Oakdale Irrigation district was organized under the Wright-Bridgeford act, with some improvement on its predecessors. A partnership was



The apricot side of a big orchard near Denair. It is bordered with olives and Eucalyptus.

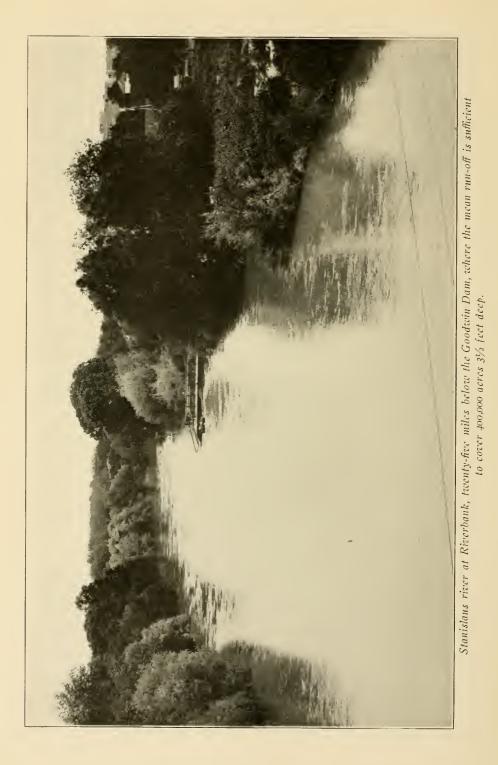
entered into with the South San Joaquin district on the north side of the river for the construction of the dam above Knight's Ferry, on the Stanislaus, and the Oakdale district built its tunnel and canals, irrigating 30,000 acres on the north side of the river and 40,000 acres on the south side. Like the Modesto district, the Oakdale taxation system relieves improvements from the burden of providing for the bonds and up-keep.

Values of land have increased greatly with the introduction of the irrigation system, and will continue to increase as settlement and improvement continues. Visitors from other parts of the State comment on the low prices of land here as compared with production and with some of the older settled regions. Scattered through the district, and particularly in the north and east, are some of the most attractive colony sites to be found in California.

In the Oakdale district are the towns of Oakdale. Riverbank, Thalheim, and Knight's Ferry, the latter at one time the county-seat. Orange Blossom and Langworth are old settlements near Oakdale. As the name signifies, the oak is distinctive of the district, and though many have been cut away, these sturdy, dark-foliaged live oaks form a most pleasing feature of the landscape, besides being of great value on the home-sites.

Cattle on a Thousand Hills

There is more than a poetic simile in the song of the shepherds of Palestine as applied to the foothills of the Sierras. Rich in natural grasses, the wild oats and the filleree; with the side valleys green long into the summer; this country maintains large herds of cattle and numerous flocks of sheep. This is a part of the old stock industry of the country that will not die out as long as the hills remain and San Francisco offers a market. The Paulsell district, adjoining, is an ideal region for the stock feeder. Steers at three years old, fed entirely on natural pasture, will average 1,200 pounds and bring the highest market price in the San Francisco market. Those who believe that there is still money in the live-stock business do not go astray in the Stanislaus County foothills.



The Oakdale country has been long known for its orchards and vineyards, and is now becoming famous for its dairies and poultry. We shall speak of the district as a whole, without attempting to segregate, any more than is necessary, the various communities and their productions.

How the Genoese Discovered America

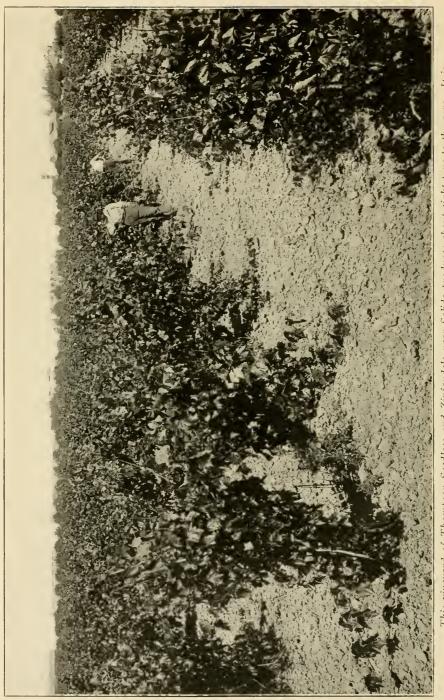
It was over fifty years ago that Paul Brichetto came from a tiny Italian valley near Genoa with a party of his countrymen who settled at Stockton. The foothill valleys of Calaveras and Tuolumne counties are sprinkled with Piedmontese names. They took naturally to Alpine farming and it is said that they made more from their gardens than the miners did from their placers. About 1880 Brichetto came to Langworth (Oakdale had not yet sprouted), and bought three hundred acres on the river bottoms. He planted cherries, olives, vines, Italian chestnuts, and many other things, and kept tight on the job. Likewise did his friend and compatriot, Casalegno. And they prospered. Brichetto now owns about two thousand acres and has built himself a Piedmontese palace in front of his old domicile. And Casalegno has taken his family to Europe and will be welcomed at the old homestead as an American prince. Moral: Great Oaks from little Oakdale grow.

A Variety Orchard

A. V. Stuart was a pioneer from Maine and planted the first almoud orchard in the Langworth district, as it was then called. His daughter, Mrs. E. V. Coleman, and her two sturdy sons conduct a fruit ranch of about 100 acres on the benches of the Stanislaus. There are 22 acres of almonds, 6 acres of olives, 8 of cots, 36 acres of peaches and two of prunes. The prunes make 8 to 10 tons to the acre, the cots 10 to 15 tons, and the peaches 10 to 16 tons to the acre. The trees are large, the soil deep and loose, and the surface well cultivated. Their estimate on almonds is an average of $1\frac{1}{4}$ tons, at 12 cents, or \$240 per ton, making \$6,500 for the orchard, with an expense of about \$500.

Olives and Nuts

Near the old Langworth school house lives C. C. Turner, who is known for his success with olives. He says: "Olives are my best paying fruit. I have two acres of three-year trees which will make a crop this fall, though the olive is said to be a slow-bearing tree. I have picked \$3.50 worth from a five-year-old tree. Olives sold last fall to the pickle factories for \$150 to \$250 per ton. I pickle my own olives and it pays better than to sell the fruit. I buy more than I raise. My cherries at eight years yielded \$20 from a single tree, and my peach orchard at three years netted me \$110 per acre, and French prunes as well or better. I have 15 acres of almonds that are producing heavily this year, for small trees. I have a few two-year walnuts, on black stock, standing twenty feet high in the alfalfa. A neighbor has some Persian walnuts that yielded \$20 per tree at eight years old, and pecans that yielded \$32 to the tree. There is a big future for walnuts and pecans



This vineyard of Thompson Seedless and Zinfandels near Salida produces about eight tons to the acre. It is bordered with almonds.

here." William McCreery has an acre of olives twenty years old. He does his own pickling and last year sold over \$500 worth of pickles and oil olives. He has an almond orchard also, which promises a heavy crop this year.

Almonds and Alfalfa

Whether Oakdale is more famous for almonds or cherries, or alfalfa or roses, it is hard to say. Anyway, they have a flourishing Almond Growers' Association with about twenty members, and Secretary Wrangham, of the California Almond Exchange, after inspecting the orchards last spring, said that he had seen no finer almond district in California. One example will suffice. Niels Lund has 100 acres in almonds, eight to ten years old. In 1910 they yielded $4\frac{1}{2}$ tons; in 1911, 10 tons; 1912, 14 tons; 1913 (the dry year). 5 tons. This year the crop will be large. Last year the price went to \$400 a ton, but the average price is nearer \$250. A fair crop for a mature orchard is three-quarters of a ton to a ton per acre. Mr. Lund also has 65 acres of alfalfa on the river bottoms and cuts 8 to 10 tons to the acre in five cuttings, besides pasturing in the winter.

Strawberries

Strawberries are the special pride of the Riverbank small ranches. They have strawberries at Christmas, New Year's, Decoration Day and Fourth of July. They show you a little place where a man came in last winter, built a little bungalow or cabin and planted a patch of strawberries. In April he was picking berries and they do not give him time to put his house to rights. Robert Frick is one of the newcomers with a strawberry-mark. From a patch 40×65 feet (or 1/16 acre) he sold \$60 worth by the middle of May and the plants were setting for a second crop.

Multum in Parto

Right in the town of Oakdale, within a ball throw, almost, of the women's club house and park, is the little ranch of Samuel Turpin, a Pennsylvania veteran. This Liliputian farm is 87/100 of an acre, including buildings. It has a berry patch from which over \$300 worth has been sold in a season, an orange grove that netted \$50 and is improving, a lemon tree that bears a thousand lemons, worth \$10, and a miscellaneous collection of deciduous fruit, apples, peaches, apricots, plums and cherries, that are credited with \$80; three fig trees, \$12; 11 olive trees (the product pickled), \$116, and two Persian walnuts, \$25: total, \$593. It should be explained that the crops were peddled in town and everything was made to count. When Mr. Turpin was in good health he kept a cow and some poultry. It is no wonder that he said the place was too big, and should be divided (like Gaul), into three parts. "It is too big for one man to look after," he said.

What Thalheim Farmers Are Doing

Farmer Deichelbohrer plowed ten acres in the spring of 1912, sowed barley, at a cost of \$3.50 per acre for plowing, harrowing and seeding, and

cut one and a half tons of grain hay per acre, worth \$18 per ton. He plowed in the fall (\$2.00 per acre), using no seed, and in 1913 cut a ton and a half of volunteer grain hay per acre. He then plowed and seeded with Egyptian corn, at a cost of \$2.50 per acre, and threshed 15 sacks of corn per acre, selling at \$2.50 per sack.

W. Aker has two acres of Phillips Cling peaches that are showing what fruit of this kind will do here. They produced last year, at four years old, four tons per acre, selling at \$25 per ton, and this year the prospects are considerably better. Strawberries between the trees yielded \$150 per acre. A row of Himalaya berries, about 20 rods long, growing along the fence, which is the general fashion here, brought \$35 for the season's crop, besides supplying the family.

Jerseys of High Degree

Daniel Wieland is the fortunate owner of Golden Marquis Girlie, a Jersey of high degree with a record of 16 pounds 10 ounces of butter-fat in seven days, and 14,000 pounds of milk testing 5.35, in 1913; equivalent to 759 pounds of butter-fat. Selling the whole milk to the creamery she brought in \$300 in a year. Mr. Wieland has been breeding Plymouth Rock fowls for twenty-five years and has won twelve silver cups. Several of his hens have a 250-egg record.

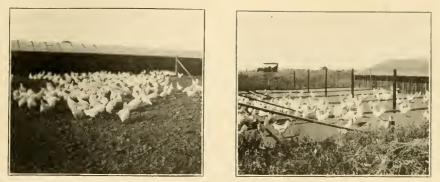
Near Riverbank is the Lester herd of registered Jerseys numbering 55 cows, producing, including heifers and strippers, 45 pounds of butter-fat per day last April, and mature cows averaging a pound and a quarter per day.

An Ideal Poultry Country

The Oakdale district, from Riverbank to Thalheim on the north and Knight's Ferry on the east, is an ideal poultry country. Levi French came from North Dakota and after looking over the State for a location he settled at Oakdale and established a poultry yard in the oak scrub. He carries about 2,500 White Leghorns, buys his grain from the farmers and feeds chopped alfalfa. His hens have laid an average of 130 for the past four years, and the gross return per hen, on the egg account alone, is figured at \$2.71, with a cost of \$1.34. Chicks bring \$10 a hundred, broilers 25 cents, and fowls from \$6 to \$7.50 per dozen. Birds for breeding make an additional item. As to cost of housing, it is estimated at 20 cents per bird here, against \$1 in the East.

Poultry Demonstration

Demonstrating in poultry is a specialty of Riverbank. One need not be surprised if they put a poultry course in the Riverbank school. At any rate, they aim to teach newcomers the art and science of profitable poultry keeping. The yards are neat, economical and practical, in the hands of a manager of experience, and the 300 laying pullets manifest their appreciation by laying 180 eggs per day. The breeds include pedigreed Buff and White Orpingtons, White Wyandottes and White Leghorus, Electric incubators



The Riverbank and Roberts' Pontry yards are good object lessons in successful chicken farming.

and brooders are used. From this nucleus many other yards are being started.

On an alfalfa ranch southwest of Riverbank, B. D. Austin is keeping Pekin ducks, Mammoth Bronze turkeys and Red Orpington fowls. There were over 300 ducks and fifty turkeys when the count was taken, and all were doing finely. As the larger part of the sales are for breeding purposes the receipts are considerably larger than in the commercial yards, but the expenses also are larger. Regarding the ducks, they raised 500, marketed 250, averaging five pounds, at 17 cents, \$212.50, at a cost of about \$100, leaving a profit of \$112.50. They also marketed last year from 2 8/10 acres, 13 tons and 1,784 pounds of peaches at \$30 a ton at the cannery, which was at the rate of \$140 per acre. This year the crop is much heavier.

Big Money from Cherries and Pears

The following data was given the writer on the ground by a practical orchard man and may be relied upon as entirely correct: Cherries; Casalegno has 86 trees about 18 years old that have produced over 12 tons, selling at from 7 to 8 cents, with the first hundred boxes or so considerably higher. At 71/2 cents the crop is worth \$150 per ton, or \$1,800 for the 86 trees. They make a crop four years out of five and have been known to yield 18 or 20 tons, and one tree a thousand pounds. The trees are large and healthy and apparently good for many years to come. Pears: There are six acres of Bartletts in the Casalegno orchard that have produced 90 tons of canning fruit at \$40 a ton. Blight is prevented by careful pruning. Peaches, in the Coleman orchard netted over \$1 a tree at three years old, producing a box to the tree. The sixteen-year-old orchard is good for 12 to 14 tons per acre. French prunes yield 12 and 14 tons to the acre and bring \$30 to \$40 a ton. Apricots yield 12 to 15 tons, or 21/2 to 3 tons dried, and the dried fruit, of good quality, is worth 9 to 10 cents, and often as high as 15 cents. Almonds will run from 1,800 to 3,500 pounds,-and some years no crop, or very little. The Stuart and Coleman orchards, 8 to 12 years, will average a ton

or more to the acre, and other orchards will do as well, or better. The above data are for mature orchards, on the best of land.

On a Six-Acre Ranch

Some men have the knack of making things grow, and grow well, on a small piece of ground, while other men have the hardest kind of a time to make a living off 640 acres. Midway between Oakdale and Riverbank, J. E. Stribling, on a little ranch of six acres, raised peaches, almonds, plums, prunes, apricots, figs, grapes and all kinds of berries (especially strawberries) and general truck. He also had a patch of alfalfa and kept a horse and cow, pigs and poultry and two hives of bees. He sold from \$1,500 to \$2,000 worth of produce a year, besides making a living for his family. He did all his own work except the berry picking, which cost about \$300 a season. The place is now in the hands of a new owner and the prospects are that he will do quite as well as his predecessor.

Peas, Tomatocs, Etc.

Peas, tomatoes, pumpkins, etc., are profitable crops in the Oakdale country. The Pacific Pea Packing plant is the largest of its kind on the Coast and a million cans or more represent this season's pack. They have over 500 acres in peas, 75 acres in tomatoes and 150 acres contracted. There are 700 acres in grain, 75 acres in milo-maize and 60 acres in black-eyed peas. A cement silo is to be built to take care of the pea hay for fattening stock. Besides the above there are 40 acres recently planted with almonds.

Citrus Fruit

Citrus culture, in the thermal belt at the base of the foothills, has been successfully demonstrated. At Knight's Ferry stands the first orange tree, so claimed, planted in the county, a Washington navel, now about fifty years old, and thrifty and vigorous. At Orange Blossom, just east of Oakdale, there are several fine groves, that of Capt. W. A. Bain in particular, of twelve acres, now sixteen years old, comparing favorably with any grove in the State. Here the crop is marketed before Christmas and has the advantage of the nearby and northern markets. Orange Blossom honey is true to its name, exceeding in delicacy the famed honey of Hymettus.

Oakdale

Oakdale, lying with her check upon the brown hills of the Sierras and her feet bathed in the cool waters of the Stanislaus, has few rivals in the California beauty contest. Her Italian gardens, white in spring with the bloom of orchards; her oak-shaded paradise of poultry; her berry patches and pea farms; her rose-bowered homes and efficient schools; make her singularly attractive among the many fine towns of the San Joaquin Valley.



The Orange Blossom Colony, at the base of the Sierra foothills, is true to its name.

The center of a seventy-thousand-acre irrigation district, Oakdale is on the east-side branch of the Southern Pacific, the Santa Fe Oakdale branch and the Sierra R. R., giving access to the mid-valley and the bay cities on the one hand and the mining and lumbering centers of Tuolumne and Calaveras counties on the other. Flour and feed mills, planing mills, gas works, three banks with deposits of three-quarters of a million, a weekly and a semiweekly newspaper, municipal water plant and municipal swimming pool, and a creamery that has increased its output in a year's time from three hundred to eight hundred pounds daily and will be turning out a thousand pounds daily before the close of the year.

Riverbank

Riverbank is on the Santa Fe, just half way between San Francisco and Fresno, on the south bank of the Stanislaus River at what was called Burnevville Ferry in the Argonaut days. It is a junction and division point, with the Santa Fe's shops and roundhouse and a big water tank that assures the best of fire protection. (The railroad's appropriations were about \$2,000,000.) Without any publicity or "uplift" work, Riverbank comes as near being a model industrial town and "garden city" as they make them. Where three years ago there was nothing but a grain field, there are now shops and stores, a pay-roll of \$25,000 a month, a fine brick bank with \$40,000 in deposits, the best water (99 44/100 pure), electric-lighted streets with wires in conduits, gas, sewers and cement sidewalks, an up-to-date "open-air" school, a board of trade and a lively newspaper. Selling contracts and public sentiment alike forbid saloons. Riverbank is not only in the center of a rich agricultural and fruit country, but is a fine illustration of the ancient phrase: rus in urbs (for which see the school teacher). The population, at latest reports, was 1.200. About the town are some of the best soils of the Oakdale district.

Thalheim has no brass band nor any booster club; it isn't in the advertising books, nor, until recently, in the railroad folders, but Thalheim is not



worrying. If the tourist or the homeseeker comes to Thalheim he will find nobody to welcome him; all hands are in the field. Nobody is at the station to see the train come in; the alfalfa must be cut, the cows milked and the stock fed. Thalheim is five miles north of Oakdale, 25 miles from Stockton, and the most northerly town in the Oakdale district. The people are mainly Germans, and their alfalfa farms, dairies and poultry yards are well kept and profitable. Recently many acres of orchards, both fruit and nuts, have been set out and will soon be in bearing. The shipments of produce from Thalheim attracted the attention of the Southern Pacific officials last year and they erected a \$12,000 station.

Knight's Ferry, the county-seat from 1865 to 1871, when it boasted some 1,500 inhabitants, has an interesting record in the early history and literature of the State. Here Bret Harte and Mark Twain listened to the stories of the Argonauts from occident to orient, and here the future hero of Appomattox courted and won the sister of the trader and Indian agent. Knight's Ferry has not so many people as in the days of the mining prosperity, but its picturesque location, its fine mill-site and its beautiful gardens testify to a bright future when Knight's Ferry shall be known as the foothill summer resort of the Stanislaus.

The Waterford District



N THE north side of the Tuolumne River, overlooking the valley towards the eastern foothills, is the old town of Waterford, where. as its name signifies, there was a ford on the route of the old-time travel to the mines and the mountain towns. The region round

about was known as a productive grain district, and when the Southern Pacific built its east-side branch from Stockton south to Oakdale, Waterford and Hickman, heavy were the freights of grain, hay and live-stock that were taken out of this region. The ranches of enterprising farmers from the Middle West, established a reputation for their live-stock and grain, and higher up in the foothills flourished the orchards and vineyards of the mountain farms. Recently an irrigation district adjoining the Oakdale, Modesto, Turlock districts was organized under the Wright-Bridgeford act, taking in about 17,000 acres lying between Waterford and La Grange.

Fruit of every kind, from the apple and plum to the fig and pomegranate, thrive in this region. Apple and pear orchards, producing good crops of the best quality, and promising young almond and walnut orchards may be found scattered about the country. Especial attention, however, is called to the advantages of this region for citrus culture, for which it is especially fitted. See Prof. Wickson in "California Fruits."

Active, energetic men, with all of life before them, do well when they go in advance of the procession. And Waterford wishes it to be understood that theirs is a town of the new era, with good schools and no saloons, and with a soil where everything will grow as soon as the water is provided.

An Invitation

Brother from the East: We have gone together through the length and breadth of this valley county; on the east side, in the fruitful foothills; on the west side, in the sea of grain, and through the green alfalfa, orchards and vineyards of the mid-valley. We have seen a productiveness and a prosperity not excelled and rarely equalled anywhere in the land. We have shown you our resources and our records, and have tried to tell a plain, unvarnished tale of our development, both agriculturally and socially. It is such a wonderful story that despite the sincerest efforts to maintain an attitude of reserve and moderation, we fear that we have indulged occasionally in a little mild jubilation, not so much in pride as in a natural spirit of thankfulness at being where we are, in a garden spot of the finest country on earth. We have shown you our pedigree-average white Americans, most of us, from "back East," either in this generation or the last, and we try to be fairly hospitable, as far as the demands of our alfalfa, our fruit and our stock will permit. We have met with some measure of success in developing a fertile land and in building up a prosperous American community. We believe that Stanislaus County is about as near Paradise as can be found on this mundane sphere—but it is no paradise for the lazy or the inefficient. You have to get your bread by the sweat of your face, same as we did. Sometimes it is hot-but it is hot, too, in the gardens of Hesperides; sometimes there is too much water, and sometimes, in some places. there is too little. We have some poor soil, even hard-pan and alkali and drifting saud, but take it as it runs, by and large; good Lord, what a land it is! Assuming that you are possessed of a fair degree of discretion and "horse sense," as well as industry and perseverance, with a reasonable amount of humility and willingness to learn, we invite you to come and dwell with us, confident that before a twelvemonth has passed you will be joining the chorus in singing the praises of California and Stanislaus County. We offer you the right hand of fellowship and will do our best to guide you. We want successful people for our neighbors, and the more the better.

