1901 THE FIRST 1931

THIRTY YEARS

BEING

AN ACCOUNT OF THE PRINCIPAL EVENTS IN THE

HISTORY OF IMPERIAL VALLEY

SOUTHERN CALIFORNIA, U. S. A.

COMPLETE IN ONE VOLUME

By OTIS B. TOUT

Newspaper Editor and Publisher—Author of the Novel "Silt"

With

CHAPTERS DESCRIBING IMPERIAL VALLEY AS IT IS TODAY

ILLUSTRATED

WITH MAPS, PORTRAITS, SCENES, CARTOONS AND SKETCHES

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breakfast rolls, dumb-bells and the like. Many are formed exactly like the bulbous portions of kelp. These are due to chemical action of solutions by which particles of clay are drawn together and cemented in a systematic fashion around some central object or core. Some of these geometrically shaped stones are laid in such regular fashion as to lead one to think they are foundations of ancient houses.

Age after age the prevailing winds from the west picked up the lighter sands from the plains, whirled them eastward and built the range of sand dunes along the eastern rim of the Valley. These dunes are still moving slowly eastward.

THE FIRST WHITE VISITORS

Even as late as 1721 maps drawn by Spaniards show that they believed that Lower California was an island and that the gulf joined the waters of the sea somewhere to the north. Little was known of the delta of the Colorado until about one hundred years ago. Occasional visits by boat from larger vessels were made by the early Spaniards, who made excursions up the Gulf from Acapulco.

Facts concerning the earliest navigators who came to the head of the Gulf of California are not very numerous. Writers seem to agree* that Francisco de Ulloa sailed from Acapulco July 8, 1539, with a fleet of three vessels, and after many difficulties reached shallow water at the head of the Cortez Sea now known as the Gulf of California. Ulloa did not see the river but surmised that one might be there. He sketched a map which indicated its supposed position.

DISCOVERY OF THE COLORADO

In May, 1540, the actual discovery of the Colorado River took place when three explorers, one by sea and two by land, reached the region. Hernando de Alarcon, the first to arrive, entered the Colorado River and ascended it in small boats for fifteen days. He reached a point about one hundred miles above the mouth of the Gila River. The land expeditions under command of Francisco Vasques de Coronado separated near the present site of Ures, Mexico. One portion of the expedition under Melchior Diaz journeyed to the mouth of the Colorado and proceeded by land up the river to a point several leagues above the Gila where he crossed the Colorado River and explored some of the country to the west. Diaz was the first white man to set foot on the soil of the region now known as Imperial Valley. Coronado proceeded by a route farther north to search for the legendary "Seven Cities of Cibola."

In 1542 Don Lopez de Cardenas, another lieutenant of Coronado, made a trip across what is now northern Arizona and discovered the Grand Canyon of the Colorado. This magnificent chasm however did not seem to impress the Spaniards very much for it remained unexplored for the next 327 years—until 1869.

The next written record was set down in 1604 by Don Juan de Ornate, Spanish Governor of New Mexico, who traveled from the Rio Grande to the Williams River and followed the course of that river through to the main stream. He went on to the Gulf, coming upon the Little Colorado, which he named the Colorado. As far as any record goes this is the first time the name was used. On his way to the Gulf he came upon the Gila River of which he made note. He returned the same way.

Another century and sixty-four years more went by before the Mission Padres in Old Mexico appeared in the Colorado region. In 1768 Padre Francisco Garces, a Franciscan friar, started a series of five trips on the third of which in 1771 he came down the Gila to the Colorado. On his fourth trip in 1774 he was in the expedition with Captain de Anza. This expedition also followed the course of the Gila to its junction with the Colorado which was forded. It crossed the Colorado desert by way of New River on the way to the missions of San Gabriel. When de Anza's band set foot on the west bank of the river and followed the water holes to the south and west towards the mountains, which he crossed, it was the first party of any size to actually cross the section now known as Imperial Valley.

In the following two years—1775 and 1776—Garces made his fifth and most important exploration. He accompanied Captain de Anza as far as Yuma, went down to the mouth of the Colorado and then back up the river to Mojave. He struck eastward from Mojave, passing close to the rim of the Grand Canyon, returning to his mission at Xavier del Bac near the present site of Tucson, September 17, 1776. We say this trip was important because it was then that Garces and de Anza laid plans to establish two missions on the west banks of the Colorado near where Yuma now stands.

THE TWO VALLEY MISSIONS

This history is indebted to Miss Estella Falla, who is a student of early Mission lore, for an account of these two missions which few people realize once existed within the confines of what is now Imperial County.

MISSIONS PURISIMA CONCEPCION AND SAN PEDRO Y SAN PABLO

By ESTELLA FALLA

There was always more or less strife between the missionary forces and the military forces which Spain compelled to travel together. Captain Don Gaspar de Portola was named First Commander of all California forces, as well as Governor of California; Captain Don Fernando Rivera y Moncada was named second in command, but the active military command was placed in his hands. It was Rivera's duty to clear the way for the Governor; to recruit the necessary soldiers; to see that no mission was started without its presidio manned by eight leatherjackets to protect it.

Father Junipero Serra's work prospered. It was easy to find donors in Spain to give bells and furniture and vessels for new missions, but not so easy

* First Reclamation Service Report 1903, "The Colorado River." L. R. Freeman, 1923. "Heroes of California," George Wharton James.

to find men ready to enlist for military service thousands of miles from home, in a wild and unknown land of savages. As a consequence, Serra felt the restraint and sought means to break the military bond which hampered him. For years, since the beginning of his work in California in 1769, Serra had all the equipment ready for new missions, but no soldiers were available.

Smarting under this delay, Serra made the journey to the City of Mexico, traveling from San Diego to San Blas in Old California (Lower California) a-foot, then by boat to the mainland of Mexico, then a-foot again to the City of Mexico. He so won the Vice-roy, that Lt. Col. Don Juan Bautista de Anza was sent in 1774 to find an overland route for colonists and supplies, to assure the safe arrival of supplies which were then so frequently lost when shipped by leaking frigates. De Anza succeeded, mapping a route from Tubac, Sonora, to a fording place near the present site of Yuma on the Colorado River, then following the water holes to the south, and then over the mountains to San Gabriel.

Serra further won the Vice-roy to the point where the establishment of missions was left to his own discretion; and so it was that two missions were set up on the California side of the Colorado River near the present site of Yuma and eight miles down the river. They were the Missions Purisima Concepcion and San Pedro y San Pablo. These missions were without presidios. They were manned by eight colonists and their families, by two priests, and a sergeant in one case, and by eight colonists and their families, two priests and an ensign in the other. The missions were to serve as way stations for all overland travel. This overland route, over what is now the Imperial Valley, was dubbed by the leatherjackets EL CAMINO DEL DIABLO (the highway of the Devil) in contradistinction to the coast route, EL CAMINO REAL (the highway of the King).

In 1776, de Anza brought the expedition which was to found the city of San Francisco. The Yuma Indians seemed so peaceful, that Serra was encouraged to carry out his dream of three missions on the Santa Barbara Channel on the same plan as used in the Colorado River Missions. He was delayed by an uprising at the Mission of San Diego, and Rivera would not consent to the rebuilding of the San Diego mission until he had captured the ringleaders and had released the soldiers for presidio duty. This quarrel continued for some time, until finally Serra succeeded in having Rivera demoted to the outpost at Loreto, in Lower California. A new military commander was put in charge of the Northern district.

Following the advice of this new commander, Serra strengthened his line of missions from San Diego to San Francisco before undertaking the new work. In 1781 he again prepared to carry out his plan of building the three missions on the Santa Barbara Channel on the quick plan of those located on the Colorado River.

On March 27, 1781, Serra was on his way to the Santa Barbara Channel to fulfill his dream of many years, when a courier caught up with him with the news that the Colorado River Missions had been destroyed and all of the inhabitants killed. Father Garces was also killed.

This massacre is of particular interest this year (1931) because of the 150th anniversary of the founding of the city of Los Angeles soon to be celebrated. It was this expedition, bringing the colonists for the new city of Los Angeles, which excited the Yumas to action. It was one of the most difficult groups brought into California, because of the large herds of stock and because the colonists were of a mixed class. Rivera had been put in charge of the train and he had brought them safely to the Colorado. He sent the colonists ahead with a Lt. Commander, while Rivera, with 1000 head of stock, the colonists unable to travel further, and six soldiers, camped on the site of Fort Yuma until he could safely take this part of his expedition across the desert. The Yumas, believing that their grass lands were to be taken by Rivera, attacked Rivera who had little chance against the hundreds of Yumas fighting against him. In this massacre, the River missions were destroyed. It was Rivera's fate that he, who had constantly fought against the establishment of the missions without presidios, should be the one called upon to give up his life to prove the wisdom of his contention.

The missions on the Santa Barbara Channel were established, but, the presidios were first built. And, as a consequence of what had taken place on the Colorado, there was no further talk of dispensing with the soldiers. Imperial County has not been numbered among the counties famous for their missions, but it was by the sacrifice made within its present boundaries that the colonization and the civilization of California were preserved.

FIRST TO SAN DIEGO

In 1782 Don Pedro Foges made the trip from the Colorado River to San Diego. This was the first recorded journey from the desert across the mountains to San Diego, the forerunner of—how many should we say?

VISITS BY TRAPPERS

James O. Pattie, a trapper from St. Louis, is given the credit by some writers for being the first white man to visit Black Canyon, which is the site of the Boulder (Hoover) Dam. He did this in 1825, going down the Gila and up the Colorado with a party.

After 1825 there are records of several visits being made to the Colorado's lower basin and the Salton Sink by trappers from the middle west. Among these were Kit Carson, Jedediah Smith, Wm. Wolfskill, Capt. Bonneville and Thos. Farnham. Smith is credited with being the first white man to make the trip over the overland route later followed by the Santa Fe railroad.

In 1826 Lieut. R. W. H. Hardy, of the British navy, explored the lower delta region in the interest of British pearl and coral fisheries. He sailed in a small schooner, the Bruja, anchoring at Baja and making minor excursions upstream. He charted the delta and his maps show one of the smaller streams

that flowed from the marsh lands as the Colorado. This has been known as Hardy's Colorado since. The following year he made a trip down the Gila and up the Colorado.

The first flood waters making their way to Salton Sea were noted in 1828. They were again mentioned by Wozencraft in 1849, by others in 1852, 1859, 1862, 1867, 1892, 1899, and, within our own history in 1905, 1906 and 1907 when the last big flood was stopped by the Southern Pacific.

COL. KEARNEY'S EXPEDITION

Complaints from Americans in California in 1846 that they were suffering from insults and threats from the "Californians" brought an order from the War Department to Colonel Phillip Kearney, stationed at Ft. Leavenworth, Kansas, to take a troop of cavalry and proceed to San Diego. Supplemental orders followed attaching Lieut. W. H. Emory and two companions to accompany the expedition as officers of the line but with engineering and observation duties added. Lieut. Emory's reports were written wherever a stop was made long enough for him to set down the story.

The column reached the Colorado River below the mouth of the Gila, November 25, 1846, after four months' hard going which left the troops and horses in poor shape. They forded the stream where it was 1500 feet wide and four feet deep. Taking a northwesterly direction they came upon the sand hills which they skirted. At dawn the next day every man tied a bunch of grass to his saddle and the venturesome cavalrymen, with captured Spaniards as guides, headed for the Alamo which they found dry. A pit fifteen feet deep yielded a scant supply of water. The men drank first and then the horses. The next day they headed straight into the desert and by the middle of the afternoon many of the horses and mules were completely exhausted. The guides told of a stagnant lake but said its waters were unfit to use because of dead animals and birds that lay strewn around the edges. The lake (probably one of the depressions like Cameron Lake) was reached at 8 p. m. The water was utterly unfit for man or beast although several of the troopers could not be kept from drinking. The brackish waters only increased their thirst. After a short rest the column moved forward on a forced night march.

At dawn the men were all favoring their tired mounts by walking at their sides. The detachment dragged along toward the mountains which had been in plain view for four days and at noon found water in Carriso Creek. The desert trip of ninety miles from water to water was extremely wearing on the men and when they reached the western side of the mountains they suffered from extreme cold and were drenched by rainstorms. They were in extremely poor condition to meet the expert horsemen of the Spaniards and Mexicans in the Valley of the San Pasqual where heavy losses were sustained in California's only real battle.

Lieut. Emory described the terrain of the desert accurately and made observations of a geological nature that are surprising taking into consideration the hardships under which they were made. He saw that the basin had once been an inland lake. He did not discover, however, that the plain was below sea level.

THE DESERT TEEMS

In 1849, the year gold was discovered in California, travel across the desert started in earnest. Some authorities assert that more than 70,000 people found their way to California by way of the desert and across the mountains via Carriso Creek and Warners' Hot Springs. Many wagon trains came up from Sonora in Old Mexico, forded the Colorado and followed the water holes and lakes toward Signal Mountain. Cave Coutts, a lieutenant in the army, saw the business possibilities of a ferry at the mouth of the Gila and established one in 1849 in time to reap much profit from the gold seekers.

This was the year that Dr. Oliver M. Wozencraft discovered that water could be brought to the floor of the Valley by gravity. His efforts are discussed in a subsequent article.

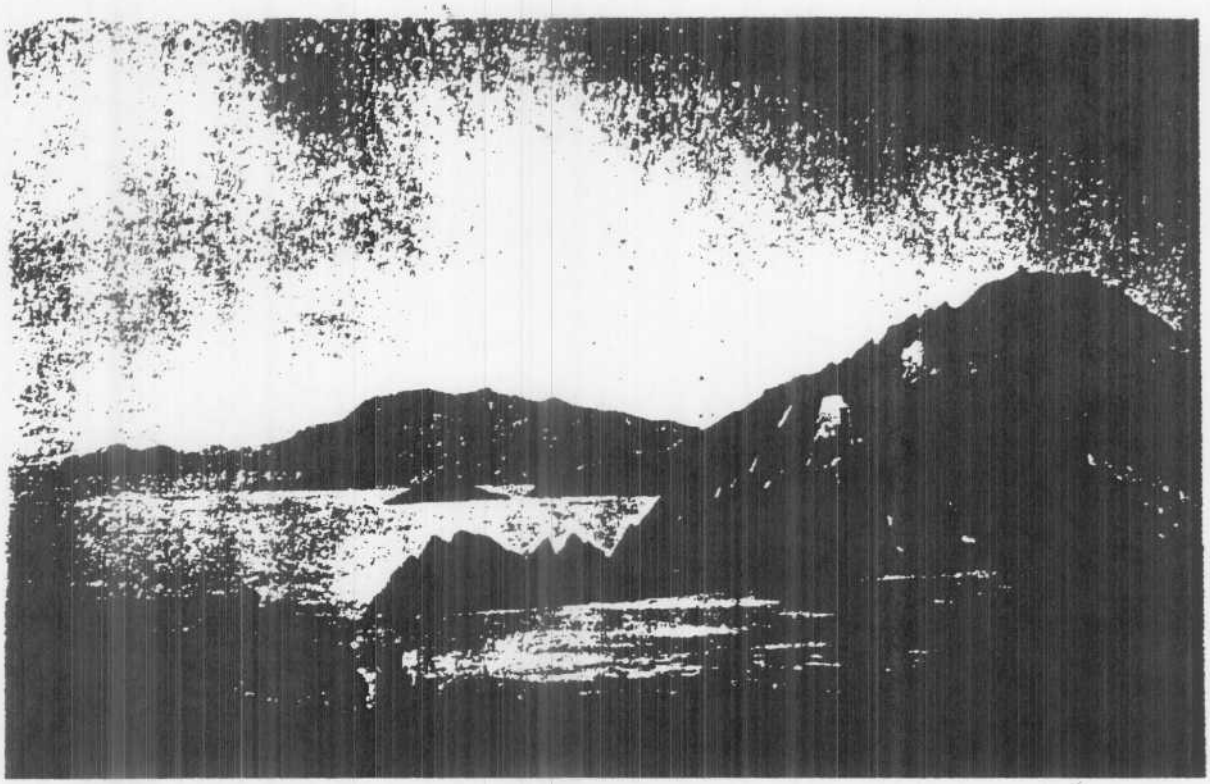
In 1850 General Anderson also built a ferry boat which was operated by Indians for many years.

Fort Yuma was established in 1851. The War Department sought an easier way to send supplies to the fort and detailed Lieut. George H. Derby, in 1851, to survey the river below Yuma to see if steamboats could operate from the Gulf. The first steamer on the river was in 1851, the "Uncle Sam." As a result of Derby's surveys the Government built an iron steamboat fifty feet long and shipped it in sections to San Francisco and thence to the mouth of the Colorado, where it was assembled in 1857. This boat chugged up and down the stream reaching as far north as Las Vegas, Wash. An iron boat was found in the mud some twenty miles below Andrade by a party of which J. E. Peck was a member in 1930.

In 1850 the Government ordered the boundary surveyed and for three years survey parties worked under the direction of J. R. Bartlett. These surveys included facilities of irrigation in the territory. New boundary line surveys were made in 1854-55 by Major Emory and Lieut. Mickler. Judging from the jog in the boundary line, the surveyors carried the line to the mouth of the Colorado on the east bank and when they crossed at Yuma and resumed on the west bank they went as far south as they could, took a look at the vast expanse of flooded delta country and decided that Uncle Sam did not have any use for such a district anyway, so struck west for Signal Mountain and let it go at that. They should have, at least, included enough land for an All-American canal below the sand hills.

THE WILLIAMSON EXPEDITION

When the conquest of the west was under way, the Government at Washington was besieged with all sorts of requests for help to put over different schemes. The steam railroad, a comparatively new invention, was an attractive thing to promote. In response to demands for co-operation, the Congress agreed to pay the bill for surveys of possible rail-



Shore and Water line of Lake Cahuilla of Ancient Times. Dr. Wm. P. Blake, Geologist with the Williamson Expedition in 1853, published this picture in his report to the Government. The scene is at the eastern portal of the San Gorgonio Pass.

road routes to the Pacific coast. The order was signed by Jefferson Davis, then Secretary of War. A party of Topographical Army Engineers was organized under the direction of Lieut. R. S. Williamson, in 1853, and was sent west to find the most feasible routes for possible railroads. This party was well equipped. Williamson had as an assistant Lieutenant J. G. Parke. The party was composed of: "One minerologist and geologist; one physician and naturalist; two civil engineers; one draughtsman . . . accompanied by a mounted escort of three non-commissioned officers and twenty-five privates." Four six-mule teams, wagons, etc., were furnished by the Quartermaster's Department. Five teamsters and eight helpers, cooks, etc., were added.

The expedition was assembled at Benecia, in Central California, and worked southward, dividing at San Bernardino. The San Gorgonio Pass was explored. This report of 1853 was the first record written about this unusual Pass, the only one of its kind on the entire Pacific slope. The party made its way along the western side of the Valley to the south, encountering famishing experiences because of delays to build roads and the lack of water. The two divisions met at Warner's Springs, rested a while and then divided again, one party crossing the desert to the mouth of the Gila. Shortly before the arrival of the party at Ft. Yuma a severe earthquake, or a series of them, was felt. A portion of Chimney Peak, a rocky height, was shaken off. Violent action in the mud volcano section to the south was seen.

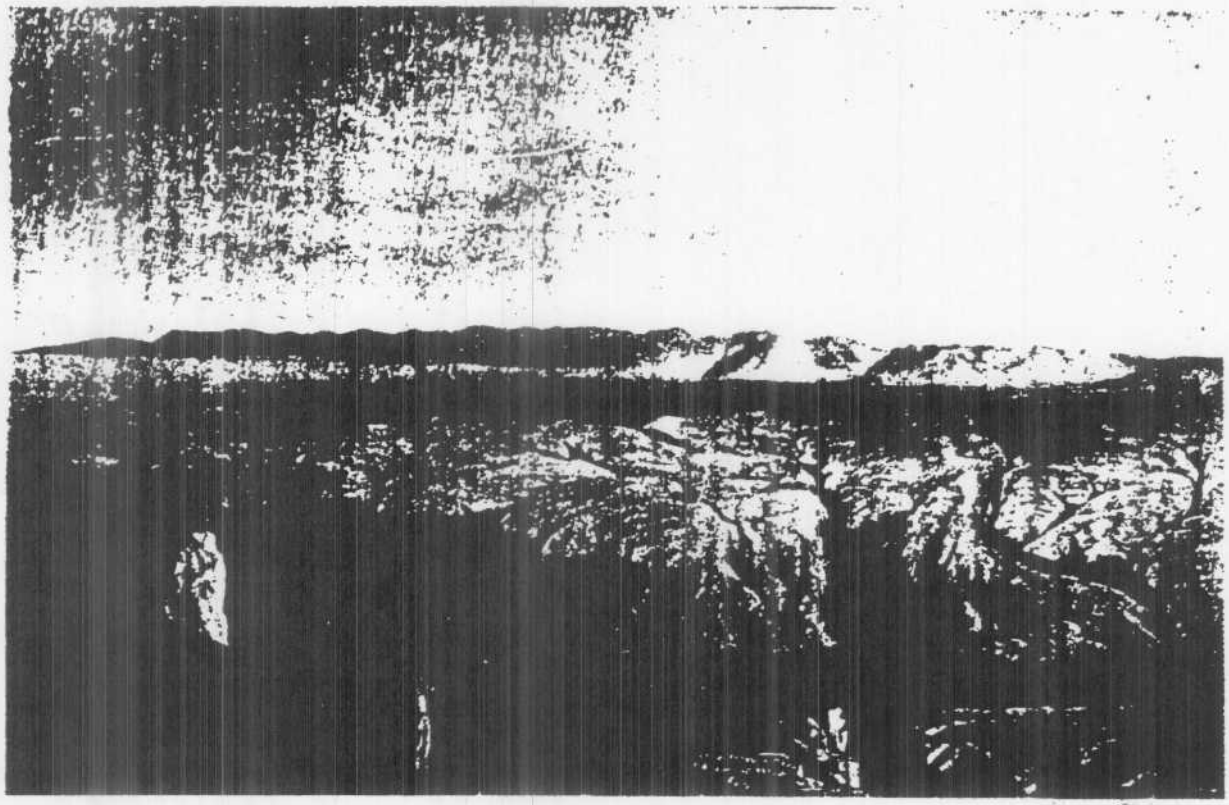
Dr. Wm. P. Blake was Geologist with this party. His reports are models of their sort. Dr. Blake later became Professor of Geology at the University of Arizona and made a close study of the Colorado region for more than fifty years.

LAKE CAHUILLA—SALTON SEA

When the head of the gulf was finally cut off the water to the north became an inland lake of salt water. Evaporating and refilling, the water became fresh. It is a surprise to many people today to find the waters of Salton Sea drinkable, although brackish.

Such conditions continued for centuries. Prof. Blake named this body of water Lake Cahuilla. He used the Indian word "Ka-Wee-Yah" spelling it phonetically in Spanish Cahuilla, the name of an Indian tribe which inhabited the fringes of the desert from time immemorial.

Evaporation of the water revealed vast deposits of salt in a great white field at the bottom of the former lake. This salt was mined in commercial quantities and the railroad station nearest the salt deposits in later years was named Salton. When the lake was filled again it then became known as Salton Sea. During the floods of 1905 and 1906 this sea attained a length of 45 miles, a breadth of 17 miles and an area of 410 square miles with a maximum depth of 83 feet. It submerged the railway trackage for many miles, and completely covered the New Liverpool Salt Company's works. H. T. Cory estimates that if the inflow of the Colorado and waste



Ravines cut in Colorado Desert by River Overflow. This picture was published in Dr. Blake's report to the Government in 1853. The cuts are identical with those made in the New and Alamo River beds in 1906

water of the irrigation system were entirely stopped the sea would practically dry up by evaporation in eighteen years.

At the beginning of irrigation in Imperial Valley in 1901 the bed of Salton Sea was dry, the salt company was harvesting vast quantities of salt and the seven lakes in the low depressions on the plains were beginning to dry up.

THE COLORADO DESERT

Prof. Blake gave the name "Colorado Desert" to this depressed area below sea level in 1853. This was before the State of Colorado received its name. It was a desert, owed its origin to the river and it was deemed most appropriate to call the region the Colorado Desert. The area of this desert is approximately 2100 square miles. It ranges from 135 feet above sea level at Yuma, to minus 287 feet at the bottom of Salton Sea.

FERTILITY

Since 1849 the fertility of most of this alluvial plain has been recognized. Dr. Wozencraft then noted it. In an official report to the War Department in 1855 attention was called to the fact that the Cahuilla Indians were raising abundant crops of corn, barley and vegetables in the northwestern part of the desert. The soil appeared to be rich for wherever water touched it, vegetation was abundant. The Indians had their houses in the thickly growing mesquite trees. The following remarkable prophetic suggestion was made by Prof. Blake in this official report, made in writing to the government in 1855:

> "If a supply of water could be obtained for irrigation it is probable that the greater part of the desert could be made to yield crops of almost any kind . . . by deepening the channel of New River or cutting a canal so low that the water of the Colorado would enter at all seasons of the year a constant supply could be furnished to the interior portion of the desert."

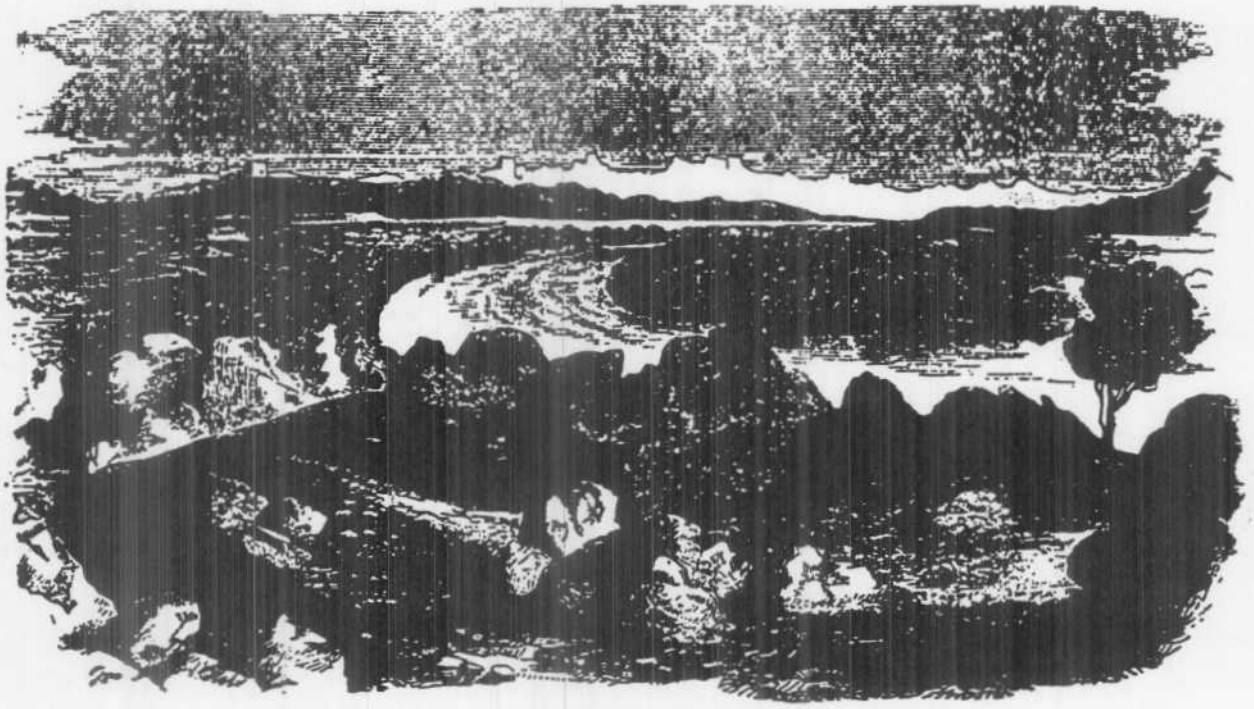
There we have the first official suggestion that the desert could be watered by gravity flow from the Colorado river.

No doubt it was this report that caused Dr. O. M. Wozencraft to continue his efforts, started in 1849, to interest capital and the government in the reclamation of the desert. Reference to Dr. Wozencraft's lifelong, futile efforts will be found farther along in this history.

NATURAL VEGETATION

The principal plants of the desert found near water or in the beds of arroyos and on overflowed lands were the mesquite, the screw bean, the palo verde, the creosote bush, the California palm, and the salt weeds. After rainfall at certain seasons of the year, beautiful flowers spring up and where the ground is frequently overflowed, pigweed, arrowweed, willows and cottonwood abound.

The remarkable palms found in the Borego Valley and in Palm Canyon are evidently the remains of a



The Colorado from Pilot Knob. From Blake's Report, 1853

vast growth of these stately trees that fringed the shores of the ancient lake.

MUD VOLCANOES

In the neighborhood of Cerro Prieto (Black Butte) there is a considerable acreage of boiling water and mud with jets of steam issuing from miniature volcanoes. Similar mud volcanoes are to be found on the east shore of Salton Sea, known at present as Capt. Davis' resort. These volcanoes are doubtless due to the infiltration of water down to the heated beds of rock not far beneath. Converted into steam these waters burst violently upward through the mud and around their orifices throw up encircling walls of mud. Volcano Lake gets its name from these volcanoes.

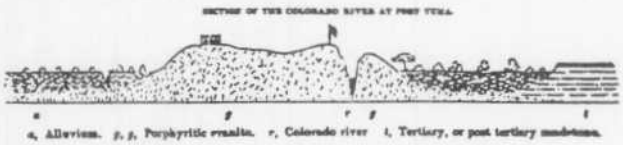
Almost the only legend ever wormed from the silent Cocopah Indian is built around these volcanoes. They punished their sorcerers and other serious criminals by the simple process of dropping them into a pool of boiling mud.

ARTESIAN WELLS

On the eastern and northern edges of Imperial Valley wells from 300 to 1000 feet deep produce quite a good quality of water at an average temperature of 100 degrees. The first well sunk at Holtville furnishes fine clear water which is used in a plunge for bathing. Many ranches on the east side are provided with a good domestic water supply by artesian wells. Attempts to reach artesian water west of the Alamo river have thus far failed.

OIL

Many attempts have been made in the desert region to find oil, none of which were successful. In 1907 great excitement was caused by the report that one of these wells was a producer. Within a few weeks more than 450,000 acres of land were filed on as oil claims in the Recorder's office at San Diego. This same thing has happened on a lesser scale several times since then. There is a new well going down this year in the Borego Valley district.



a, Alluvium. p, p, Porphyritic granite. r, Colorado river t, Tertiary, or post tertiary sandstone.

OVERLAND STAGE ROUTE

In 1858 David Butterfield secured a contract with the Government to carry the United States mail over a route between St. Louis and San Francisco twice a month. The distance was divided into "horse runs." One of the adobe buildings erected at Indian Wells near the present site of Seeley was standing until 1906 when it was washed away during the flood. The route crossed the Valley by way of Indian and Coyote Wells going northward through Carriso Canyon, Warner's Spring and Los Angeles to San Francisco. Passenger fare was $100 and the trip consumed from twenty-two to twenty-five days. This stage route was maintained until March, 1861, when the Government discontinued its subsidy on account of the Civil war.

ADMIRAL DEWEY A VISITOR

From 1873 to 1875 Commander George Dewey (later Admiral) surveyed the Gulf of California in the U. S. S. Narragansett and visited the mouth of the Colorado River several times. His work, however, did not extend beyond deep water navigation.

FIRST "ALL-AMERICAN" CANAL SURVEY

In 1876 Lieutenant Eric Bergland was detailed to investigate flood conditions on the lower Colorado and to determine the feasibility of diverting the Colorado River for irrigation purposes in the vicinity of Needles. He also sought a route for a canal from the river to the Colorado desert on American soil. This is perhaps the first official mention made anywhere of an "All-American" canal. In 1879 following the completion of the Southern Pacific Railroad the Government ceased all attempts to further navigation on the river.

THE SOUTHERN PACIFIC BUILDS

In 1877 the Southern Pacific completed its line as far as Yuma and two years later the desert was crossed connecting the east and west by a Southern route. The completion of the railroad meant the cessation of all stage and team travel across the desert. The country was abandoned except for the cattlemen who watched for overflow periods when grass enough would grow to warrant driving their herds here to graze.

The railroad company established stations along the way and built cement cisterns which were filled with water hauled from the Coachella Valley so that section crews could exist. These stations were: Knob, Ogilby, Cactus, Drylin, Ruthven, Glamis, Mesquite, Acolita, Mammoth, Tortuga, Iris, Flowing Well, Old Beach, Lano, Frink, Pope, Bertram and Salton. Flowing Well, which was a misnomer, was the station used by first visitors. Geo. McCaulley, a liveryman of Yuma, put up a shack there in 1900 and started the stage line that served until the railroad branch was completed to Imperial in 1903. The railroad company, however, made the junction point at Old Beach, a few miles west of Flowing Well. The name was changed to Imperial Junction and then to Niland.

FLOURISHING MINES

Prospectors in the early days found gold in the waste mountains in the eastern end of what is now Imperial County and with the completion of the railroad several good mines were opened and worked. At one time there were some 3000 men working in these mines. When the county was formed in 1907 there were some fifty votes in the mining district. The most noted mines were the Walters Gold Mine, the Little Mary, the Black Butte, the American Girl, the Senator and the Picacho. The last two were nearer the river. Most of the remainder were grouped in the Tumco section which was reached by team from Ogilby and Cactus.

Preparations are being made to reopen some of these mines which, with modern machinery, will produce gold in paying quantities from low grade ores that exist in abundance.

The average Imperial resident will be surprised to know that Tumco peak has an elevation of 2225 feet and Picacho peak is 1945 feet high.

EARLY LAKES AND CATTLE GRAZING

In the eighties and nineties Imperial Valley was used by cattlemen as a grazing ground. They would drive herds in from San Diego County and some would swim them across the Colorado from Arizona. The overflow from the Colorado was regular enough to keep the low spots filled with water and around the shores of these "lakes" would grow pepper and other grasses that made good feed.

Cocopah Indian Children—True Natives of the Desert

These lakes were seven in number. Pelican Lake, so called because of the thousands of pelicans that nested there, was directly west of where Imperial is now. Mesquite Lake, named from the dense growth of mesquite trees around it, was northeast of Imperial. Blue Lake, named from the clear water it held, was west of where Seeley is now. Cameron and Diamond lakes were south of Blue Lake, towards the border. Cameron Lake was named after Geo. Cameron, cattle man, and Diamond Lake was so called after George Diamond, more often called "Diamond George," another cattle man. Laguna Lake, near where Calexico is now, is Spanish for lake itself. These lakes were all cut out by the 1906 floods excepting Mesquite Lake which was drained to make more farming land.

The Alamo was called Carter River for some time, after Joseph Carter, step-son of Hall Hanlon, and was so called several years after the Valley was irri-

gated. The ancient name was resumed about 1904.

Near Sharps Heading was Buzzard's Roost before the canals were built. Thousands of buzzards perched on the mesquites there between their excursions over the desert area.

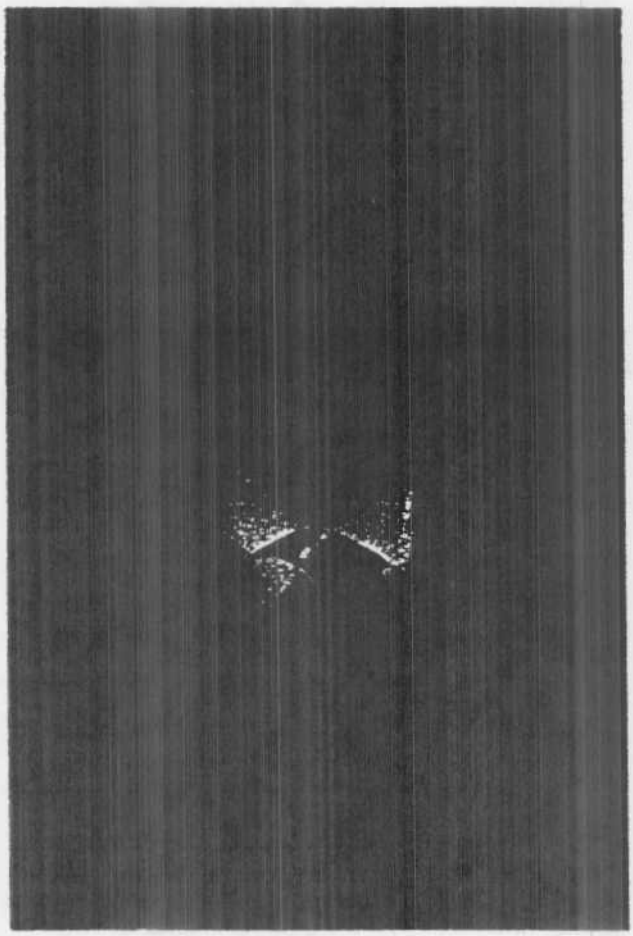
Indian Wells was a stage station where clear water could always be had. It was located near Blue Lake and was washed away, together with the historic adobe buildings, in 1906.

THESE WERE THE BEGINNINGS

It will be seen from these records that the region under discussion while feared by everyone who had to come in contact with it as a dreary somewhat desolate and dangerous waste it was not at all unknown many years before water reached its soil in 1901. Literally thousands of people crossed in wagon trains, by stage, on horse and foot during the half century previous to irrigation.

CHAPTER II

DR. OLIVER M. WOZENCRAFT



Dr. Oliver M. Wozencraft

WHO was the real "father" of Imperial Valley, the first man to actually plan the reclamation of the desert sink for agricultural purposes by bringing the waters of the Colorado to the arid area to the west?

The answer to that question must be Dr. Oliver Meredith Wozencraft.

This cultured man conceived the idea in 1849 and spent every hour possible for thirty-eight years seeking co-operation, governmental or private, to bring about the realization of the very plans that C. R. Rockwood sought to develop during his eight years of search for capital between 1892 and 1900.

Dr. Wozencraft came out to California in the gold rush year of 1849 at the age of thirty-five years. He was a graduate in medicine and located in San Francisco, taking a position as Indian Agent for the Government. His evident interest in the mysterious and strange was shown when he immediately set out to visit the then almost unknown Colorado desert.

In May, 1849, he set out with several men, mules and a pack train, and planned a careful investigation. From his personal diary we read this: "We at last reached this, the most formidable of all deserts on this continent. We found its basin filled with turbid water; crossing in an improvised boat made of ox hide, we encountered the desert. We started in the evening, taking a trail that soon led us into sand drifts and as their walls are nearly perpendicular and as unsubstantial as a sand bank, we were compelled to halt. I set about prospecting to find a way out; there was a sand hill not far off; I climbed to the top and found that the sand drifts could be avoided by going to the bottom land near the river. On my return to the men, they having fallen asleep, I found that the drifting sand had almost covered them up. We were some three days or more properly speaking, nights, crossing the desert. The extreme heat in the daytime compelled us to seek shelter under our blankets. The heat was so intense that on the third day two of my men failed. It occurred to me, as there was nothing I could do there, to mount my patient and gentle mule and at a distance of some eight miles I reached the border of the desert and water with which I filled a bag and brought it back to them. It was then and there that I first conceived the idea of the reclamation of the desert."

Ten years later, in 1859, Dr. Wozencraft secured from the State Legislature of California all the state rights to the 1600 square miles of the Salton Sink. The Legislature passed this bill April 15, 1859. The original pen and ink draft of this bill is in the archives of the Imperial County Pioneer Ass'n. The next thing to be done was to gain the consent of the Federal Government. He lost no time but saw to it that a bill was presented in Congress in the fall of

the same year. The bill was referred to the proper committee and the records of this committee contain the following description of the Wozencraft project:

> "This bill proposes, in consideration of the introduction of a wholesome supply of fresh water into the Colorado desert tract as prescribed in the bill. This tract embraces (according to Lieutenant Bridgland) about 1600 square miles in the basin of what now is and must remain, until an energetic and extensive system of reclamation is inaugurated and brought to successful completion, a valueless and horrible desert. The labor of reclamation must be commenced within two years and be completed within ten years. As fast as water shall be introduced, upon a report to that effect being made by a duly appointed commission, patents shall issue for the parts reclaimed and when all the conditions are fulfilled then and not until then shall the title rest in said grantee."

Portending the experience of Rockwood some thirty-nine years later, when the Spanish-American War stopped his progress, the rumble of the great Civil War caused the Wozencraft project to be sidetracked by Congress, even after it had been favorably reported by the committee. Like Rockwood of later years, Dr. Wozencraft never lost hope. After the war he went back to Congress after Congress only to find it impossible to make an impression on the men so busily occupied with reconstruction problems. The hopeful doctor went to Washington the last time in 1887 and there secured the promise of a friendly Representative to bring the matter up for another hearing. He was suddenly stricken ill and died before relatives could reach him from San Bernardino, California. He had spent his entire personal fortune; he had paid the expenses of many trips of capitalists, lawmakers and others to the desert. His last sacrifice was the beautiful family home in San Francisco. Even when he died at the advanced age of 73, he was in the harness working as hard as he knew how to bring about the watering of the wastes.

Just how much inspiration C. R. Rockwood gained from the efforts of Dr. Wozencraft is mere conjecture. At least he was cognizant of these plans for he mentions them in his story, "Born of the Desert," published in 1909, and found reproduced in later pages of this history.

George Chaffey was a personal acquaintance of Dr. Wozencraft and was importuned by him in the early eighties to take up the work. Chaffey refused on account of his belief that no white settlers could be induced to colonize the land. This belief was dissipated when he went to Australia and saw hundreds of white men settle and live for years in a climate as hot as that of this desert. Upon his return from Australia he did take hold of the Imperial Valley project and did what Dr. Wozencraft begged him to do years before.

An interesting scrap book, filled with clippings concerning the doctor's life, his articles on the desert, poems and orations delivered on various occasions, was rescued from the attic of his daughter's home in San Bernardino after her death and was presented to Hugh Osborne, of El Centro. These clippings reflect the varied activities of Dr. Wozencraft's life and form documentary evidence of his life-long effort toward the reclamation of the desert. His plans were often thwarted by suspicions on the part of many that he was after a gigantic graft for personal gain as he sought the grant of all the Colorado desert lands from the government. The fact that this was necessary before he could interest capital was not appreciated.

In drawing his plans and maps he enlisted the aid of County Surveyor Hadley, of San Diego county, whose knowledge of the desert was a big help to Wozencraft.

The scrap book, which was evidently kept by Dr. Wozencraft himself, is a prized relic of real historical value.

So, while we are carving the names of the real pioneers on the monument of memory, let us place at the top of the list the name of the kindly cultured physician, Dr. Oliver M. Wozencraft, whose only mistake seems to have been that he was half a century ahead of the times.

CHAPTER III

ROCKWOOD'S REDISCOVERY

Charles Robinson Rockwood

THE early history of the Imperial Valley is interwoven with that of Charles Robinson Rockwood in a fashion that gives his name pre-eminence amongst those who had the idea of uniting the waters of the Colorado River and the fertile desert soil of Salton Sink. While the lifetime work and endeavors of Dr. Oliver M. Wozencraft and the eight years of toil, struggle and disappointment that Rockwood experienced from 1892 until 1900 were strangely similar, Rockwood finally found the man, George Chaffey, who was able to take hold of the project when it was practically defunct and bring the water to the desert.

The story "Born of the Desert" was written in 1909, by Mr. Rockwood, for publication in the annual magazine edition of the Calexico Chronicle, at the request of the publisher of this history, then proprietor of the Chronicle.*

When Rockwood rediscovered Imperial Valley in 1892, the idea of its reclamation became an obsession with him. Realizing his own lack of experience in financing and promoting he associated himself with first one and then another, always seeking money with which to bring into realization his plans for reclamation. He followed every clue that looked like it led to money; he crossed the continent time and again, visited Europe, saw the bag of gold at the foot of the rainbow several times only to have it dissipated into the mists by the breaking out of a war, the death of a principal or the underhanded perfidy of a friend. He was deserted by friends and backers, laughed at as the father of a chimera by unyielding bankers east and west. In spite of all he hung on with a tenacious hope.

In 1899 Rockwood had seemingly reached the end of his rope; he was broke; his corporation was practically defunct; its charter was about to be canceled; the options on lands necessary for the heading and canals had expired; the whole matter was in the slough of despond.

With matters in this state is it any wonder, when George Chaffey indicated interest, that Rockwood, Heber and the other officers of the troubled California Development Company, should gloss over this serious condition and hold the magnifying glass on the more favorable aspects before the eyes of the possible backer? They were within reach of realization. They felt that Chaffey would be amply repaid should he go into it. Why inform him of ALL the facts and spoil it all? They simply could not do it. They evidently comforted their consciences with the knowledge that George Chaffey took five months to look into the details and did not deem it necessary to employ an attorney. He even decided once to turn it down and then slipped away into the desert for three weeks alone. He came out with the decision to go ahead.

Under these circumstances the criticism that has been leveled at Rockwood and Heber because of their failure in frankness is somewhat dulled although it is a just criticism. How is one to weigh such guilt? If the white lie is at any time permissible in the education of a child how much of a white lie is permissible to create a hundred million dollar region for sixty thousand humans?

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* Securing the story, by the way, was no small task. The services of a stenographer, Mrs. Leta Bryan, were placed at his disposal and for more than two weeks he dictated a voluminous mass of matter. This was edited and finally put in shape for publication. The passing of twenty-two years and the increasing interest on the part of the public in Mr. Rockwood's revealing narrative caused its reproduction in 1930 by Randall Henderson, present publisher of the Calexico Chronicle, in a beautiful brochure. This also includes interesting reminiscences by Dr. W. T. Heffernan.

When the deal was made with George Chaffey it was made on Chaffey's terms. Chaffey was to have the power of sole dictator over the affairs of the California Development Company for a period of five years. Rockwood, Heber and the others stepped down and out. They were apparently sacrificing but really possessed nothing tangible to sacrifice. Chaffey stepped into a situation which had a par value less than zero and built it, in twenty-two months, into a concern with more than two millions in assets. For that alone George Chaffey deserves more credit than Rockwood willingly gives in the narrative that follows.

Perhaps it was more than should be expected of mere human beings to stand on the sidelines and watch the creation of this wealth without a desire to have a hand in the work. Then, too, it was natural that George Chaffey should find his fine Scotch nature violently resentful when he discovered that he had to hustle money to buy Hall Hanlon's lands, to pay the corporation fees past due in New Jersey, to gouge a new option from the unwilling Don Guillermo Andrade who owned the right of way for the main canal in Mexico and to redeem $350,000 land scrip at face value. The situation created strained relations between the two groups. It could do nothing else. Chaffey went ahead, disdainful of Rockwood. The latter saw his empire slipping into the hands of the man who was making it. Five years was a long time to endure this situation. Again the ever present fact that human nature is the overpowering factor in the struggles between men was demonstrated. Rockwood hired attorneys to find flaws in the Chaffey contract. He was abetted by the belief on the part of some people that the Chaffeys were intent on milking the cow and drinking the milk themselves. But there seemed to be no loophole for action.

However, George Chaffey's own oversight when acting as his own attorney, compelled him to relinquish the management of the project. His contract called for the proxies of a majority of the stock outstanding, in order for him to maintain control of voting power at the annual meetings. He failed to have the stock certificates put in escrow when the proxies were handed over to him; then when the influx of people and the boom of success turned this once worthless stock into valuable paper there was nothing to prevent the sale of the certificates by the owners. When such a sale was made the proxy was cancelled. When Chaffey foresaw that he would lose control of the board of directors by this process he impetuously decided to get out as quickly as possible and on the best terms possible. The Rockwood contingent agreed to buy him out on his own terms and the Chaffey control ended in April, 1902.

These matters are to be found in more detail in subsequent chapters. They are referred to here in order to give the reader a clear perspective of the situation.

ROCKWOOD'S BACKGROUND

Charles Robinson Rockwood was born in Michigan, in 1860. He made up his mind early in youth to be on his own resources when he reached the age of twenty-one. He attended the University of Michigan but had to quit school on account of trouble with his eyes, intending to return. He went to Colorado and spent three years in practical survey work with engineering crews. He became too engrossed with this fascinating occupation to return to school. At the age of twenty he entered the engineering department of the Denver & Rio Grande Railway Company and remained in that position two years. He then came to California, entering the engineering service of the Southern Pacific, where he remained until 1889. For a year or so after that he was with the Geological Survey of the United States government. In 1890 Mr. Rockwood accepted a position as Chief Engineer of the Northern Pacific, Yakima & Kittitas Irrigation Company, organized by the Northern Pacific for the purpose of irrigating lands in the Yakima valley in the state of Washington.

Here it seems that the spectre of financial trouble began to hover over the career of the engineer. The money panic at that time caused the railroad to withdraw its support from the Yakima project. It was then that Rockwood made contact with John C. Beatty, in Denver, and accepted the commission to investigate and report the feasibility of irrigating the delta lands below Yuma. He then rediscovered Imperial Valley and his story picks up the thread of his experiences after 1892.

After the floods of 1905-1906-1907 had wrecked the California Development Company, Rockwood lost everything except 160 acres of land in the Valley where his efforts had helped in the reclamation of more than 600,000 acres.

After the people, through the Imperial Irrigation District, purchased the remnants of the controlling corporation, the Board of Directors of the District, in 1915, made him Chief Engineer and for two years he enjoyed the doubtful pleasure of following the maps and data, many of which he had created years before. In 1918 he returned to his home in Los Angeles and resumed the practice of his engineering profession. March 3, 1922 he died at his home in Los Angeles at the age of 62.

No monument that might be erected to the memory of the men who made Imperial Valley would be complete without the name Charles Robinson Rockwood.

His own story "Born of the Desert" is presented with a few deletions of matter that are covered in other portions of the history.

It is a story of dogged determination that succeeded—but in the success there was a swirling tide that engulfed the chief actors of the drama and others carried on the action.

CHRONOLOGICAL DATA

Let us follow here in chronological order the highlights of the twenty years that have elapsed under the new order of things.

1911

Receiver Holabird and his chief engineer, J. C. Allison, were in agreeable conference with the board.

The District was embarrassed because there were no funds.

A close study of all other Districts was ordered.

1912

A bill validating formation of District was passed by the legislature.

Attorney A. Haines was employed at $150 per month.

Receiver Holabird warned of a possible water shortage.

The Assessor was "docked" $15 for "time taken out for work not connected with his office."

Directors of mutual water companies were invited to conference.

The attorney said it was legal to issue warrants.

The First National Bank, of Los Angeles, agreed to cash District warrants.

Applications for the job of engineer were received from J. C. Allison, C. K. Clarke, C. J. Park and H. T. Cory. No appointment was made then.

Engineer Allison warned against the menace of the river, which stood against the levees.

The first mention of the All-American Canal was March 23, 1912, in a discussion of ways and means to get away from the Mexican Receiver. The secretary was instructed to write C. R. Rockwood and ask if he had any data regarding the All-American Canal route on hand. He answered that he did not have such data.

Secretary Melton was made business manager and was sent on a trip to Washington to further the interests of the District.

Each of the five directors advanced $150 cash to provide funds for current expenses.

The District placed a watchman on the Volcano Lake levee.

Assessor Barker's first rolls were accepted.

An assessment rate of .007 on the one dollar was adopted in August.

On October 8, 1912, the Southern Pacific proposed to settle its own claims for $2,567,000, the District to settle with its other creditors. The Board declined to consider this.

Secretary Melton in a long communication urged immediate action by dealing direct with each of the creditors. The Board decided to get a combined offer from the creditors.

The All-American Canal continued to be discussed at every meeting.

On December 10, 1912, R. D. McPherrin appeared before the Board and urged support of the Newlands bill, backed by the Arizona and California River Regulation Commission. The bill contemplated a series of storage basins on the upper stream. The Board voted to put the proposition on the ballot at the February election.

1913

The election call was issued for February 5.

A. A. Anderson was employed as engineer.

The Board asked President Sproule of the S. P. for a conference.

In the February election, 1399 votes were cast. C. W. Brockman was elected in Kloke's place, and Allison Peck was elected to H. L. Peck's place on the Board.

President Hamilton made a horseback trip over the All-American Canal route.

Attorney Haines suggested condemnation proceedings to bring the railroad down to reasonable terms.

The new Board organized March 11, with W. O. Hamilton president.

The attendance by numerous citizens at Board meetings indicated an initial impatience with the Board's inability to get along faster with the acquisition of the water system.

The first appearance of Mark Rose was as a visitor at the March 11 meeting. He favored condemnation proceedings and urged the Board to call public mass meeting every ninety days so that the people could keep in touch with them.

Attorney R. D. McPherrin was added to the legal staff.

Several prominent engineers were invited to act on a board to decide the feasibility of an All-American Canal.

The office of Business Manager was discontinued. Mr. Melton quit with a fiery denunciation of Attorney Haines, calling him a "vacillating advisor."

The Board ordered its attorneys to start condemnation proceedings against the C. D. Company at once.

Headquarters of the District were moved to the Masonic Temple in El Centro in April.

Assessor Barker was also named Secretary.

Note was taken of the fact in May that President Sproule of the S. P. Company had not answered the Board's request for conference.

Haines wired from Los Angeles asking if $2,750,000 was too much to pay for the Southern Pacific's claims. The Board parried the question.

In August a resolution directed the attorneys to take up with the Reclamation Service the matter of diversion from Laguna Dam.

The tax rate was set at .002, which would raise $28,000.

A conference with Receiver Andrade of Mexico was sought. Because of disputes between the two Receivers, much necessary work below the line was held up.

A few citizens filed a protest against the 1913 assessment. The protests were overruled.

Engineer Anderson was instructed to put a surveying crew on the All-American line immediately.

November 21, Epes Randolph and Eugene Ives made the District a written proposition to the effect that the S. P.

would accept the amount of all advances made plus interest for its claim and accept in part payment lands in Mexico valued at $750,000. A conference was set for November 29.

C. M. Berry was appointed Secretary December 9.

Director Allison Peck, of Imperial, resigned. Judge Haines and R. D. McPherrin both resigned as Attorneys.

M. W. Conkling was appointed the District's Attorney.

(These changes evidently came as a result of former Secretary Melton's strong public criticism of the slow progress being made by the head of the legal staff.)

Attorney Conkling was strong for immediate condemnation and started legal steps to that end without delay. Within a few days President Sproule wired an offer to sell for $2,000,000. The District wired that it would give $1,750,000. Sproule accepted the offer.

1914

Final figures showing a total of claims and judgments that would have to be settled in order to clear the title to the C. D. property on both sides of the line ran up to $3,000,000. In order to rehabilitate the run down system in Mexico another half million was necessary so preparations were made for a bond issue of $3,500,000. The law required a petition of land owners and voters before the Board could call a bond election. A citizens' committee set out to secure the necessary signatures.

J. Arthur McBride, of Imperial, was appointed Director by the Board of Supervisors.

Stating that it would interfere with the ultimate uniform expansion of the District the Board denied the request of potential entrymen on the East Side mesa who asked that the District request the Government to restore the mesa lands to entry.

Attorneys Conkling and Swing were delegated to attend the convention of Arid Western States in Denver. They impressed the convention with Imperial Valley's importance.

Alarming reports that the river was cutting at the levees caused the Board to borrow $10,000 on the endorsement of a large group of citizens and contribute it to the fund used to stop the gap.

State Engineer McClure gave his approval to the proposed bond issue.

At the insistent request of Mark Rose the Board decided to request Secretary Lane to restore the Eastside mesa lands to entry. Ferguson made the motion and Brockman seconded it.

The Board borrowed $5000 from Los Angeles banks to pay salaries.

In August, after a public meeting, Attorney Conkling was sent to Washington to endeavor to secure Government control of the Colorado River for the protection of the Valley from overflow through Mexico. At this meeting, W. A. Edgar, V. R. Sterling and M. W. Conkling were appointed a committee to conduct a campaign urging all civic bodies in Arizona and California to write and wire Congress to support this program.

A. A. Anderson resigned as engineer August 4.

On a valuation of $27,251,087 a tax rate of .002 was adopted to raise $46,326.84 for the coming year.

On October 6 petitions signed by 3827 citizens were received by the Board asking the District to call the $3,500,000 bond election. The election was called for October 29.

A necessary constitutional amendment permitting the District to own property in Mexico was placed on the November ballot at the state election. A resolution denouncing the Los Angeles Times for its bitter opposition to this amendment was spread upon the minutes.

The bond election carried 3278 to 330.

President Hamilton, Attorney Conkling and W. F. Holt were authorized to visit President Sproule and outline a contract that would bind the bargain for the sale and purchase of the distributing system.

W. O. Hamilton, Conkling and Leroy Holt went to Washington to confer with Secretary Lane.

On December 8, 1914, a wave of general satisfaction swept over the Valley when the announcement was made that C. R. Rockwood had been employed as General Manager and Chief Engineer. Mr. Rockwood assumed his duties December 18.

1915

The February election returned Director W. O. Hamilton without opposition, Director J. Arthur McBride, with some opposition, and replaced Director Earl Pound, who was not a candidate, with J. D. Bennett. R. H. Maddux was elected treasurer and Clark Booher assessor.

The Board spent several sessions examining the long typewritten contract submitted by the railroad's attorneys to control the escrow operations of the $3,000,000 agreement between the district and the Southern Pacific.

The District's financial credit was rapidly improving. Eight Los Angeles banks advanced $200,000 for the purpose of enabling the District to do very necessary work on the protective system along the river in Mexico, accepting the District's notes endorsed by citizens.

Director Hamilton was again made president.

The U. S. Government promised $100,000 if the District would raise a like amount for protective work. A party of congressmen, including Congressman Kettner, was shown about the Valley and the levee system. The newspaper men of the Valley were taken on a trip over the levee work.

Mark Rose was asked to have his proposal regarding Eastside mesa lands reduced to writing.

Attorney Conkling's salary was raised to $400 per month.

Engineer Rockwood made weekly reports regarding riverfront operation.

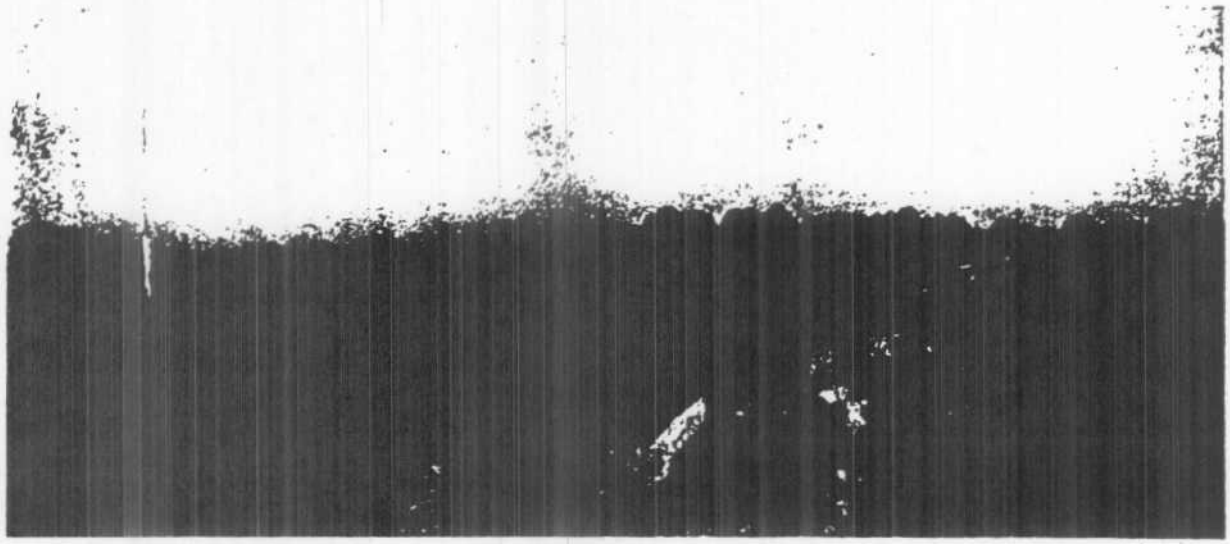
The Laguna Water Company presented a resolution asking co-operation of the District and seeking water for the mesa.

The Board voted to allow private parties to construct a canal parallel with the Volcano Lake levee, the District to stand the cost in water deliveries. Engineer Rockwood asserted that such a canal would bring in silt needed to raise the levee. Directors McBride and Ferguson voted against the proposal believing it was a move to use District money for the benefit of American owners of Mexican land.

Director McBride moved to declare the office of Engineer vacant, but got no second.

The delay in closing with the Southern Pacific brought much criticism.

The Bankers' Association passed a critical resolution and the District Board invited them to name a committee to negotiate with creditor litigants in order to hurry things along.



The District Maintains Thirty-one Miles of Rock Faced Levees in Mexico

The Board took a stand against the new heading in Mexico and in favor of more protective works.

The three and a half million dollars' worth of bonds were all signed and taken to Los Angeles for safekeeping.

No serious trouble came with summer floods in 1915.

All employees were allowed two weeks' vacation with full pay.

Attorney J. M. Eshleman was employed as Assistant Counsel.

Attorney M. W. Conkling offered his resignation as Chief Counsel. The Board refused to accept it.

Director McBride again failed to have Engineer Rockwood discharged.

The Board was divided on nearly all questions of policy 3 to 2. Brockman, Bennett and Hamilton against McBride and Ferguson.

A new communication submitted by Mark Rose regarding the Eastside mesa lands was ordered tabled.

The entire bond issue was ordered advertised for sale October 12.

The new assessment rate was .007 to raise $153,000.

At the request of the Board, Attorney Conkling withdrew his resignation.

Those dissatisfied with the policy of the Board majority filed recall petitions against Directors Hamilton and Brockman. The secretary declared the signatures insufficient and new petitions were made ready.

October 12 the Southern Pacific submitted a bid for $2,152,500 worth of bonds at par.

A petition filed by Mark Rose and thirty other owners of mesa lands asked the district to include their lands within its boundaries. After a hearing the lands were ordered admitted.

New recall petitions against Directors Hamilton and Brockman were found sufficient. The election was called for December 7. The election failed by a vote of 611 to 306 and the policies of the members attacked were considered approved by the people.

All hands were called to San Francisco for a conference with the Southern Pacific and other creditors. The lawyers had found a conflict with court orders in the existing contract between the railroad and the District, and a new contract had to be drawn and signed.

Director Brockman introduced a resolution to request Congress to allow the District to include 200,000 acres of withdrawn mesa land within its boundaries.

1916

The Board agreed to sell all main canals north of the boundary line to the mutual water companies.

The Southern Pacific purchased the property of the C. D. Company at Receiver's sale February 8. This made it necessary to cancel the contract just entered into and the third contract was drawn and signed by the S. P. and the District.

Because of a temporary water shortage, water was prorated on the basis of outstanding water stock.

The Southern Pacific offered February 10 to buy all the District's bonds up to $3,000,000. The bonds were ordered sold. This was really the beginning of actual ownership of the distributing system, although the Receivership continued for some time.

The entire Valley was saddened by the death of Attorney J. M. Eshleman.

On account of an error in numbering the bonds, the entire issue had to be reprinted at a cost of $4000.

The remaining $500,000 worth of bonds were advertised for sale.

Mark Rose submitted a new communication asking the District Board a list of twenty questions. It was ordered filed.

Engineer Rockwood was authorized to make extensive preparations to fight the 1916 summer floods. Equipment was leased from the Southern Pacific and $75,000 was borrowed from Valley banks.

F. H. McIver was named Assistant Secretary.

A bid of .88¾ was received from H. W. McDonald for the half million dollars' worth of bonds advertised. After considerable hesitation the offer was accepted.

RESIGNATIONS DEMANDED

The Board ordered the building of a canal from Volcano Lake to the Wisteria at a cost of $120,000. This order precipitated a new avalanche of criticism that fell on the shoulders of Engineer Rockwood and Directors Brockman and Hamilton. The matter came to a climax August 8 when the mutual water companies joined with the Bankers' Association in demanding the resignation of the entire Board with the suggestion that their places be filled by three men to be named by the mutuals and two to be named by the bankers. The board answered that the demand was "fomented by the Imperial-Laguna Water Company crowd who hoped to ride into power on the crest of discontent caused by the existing water shortage." The matter was left at boiling point for two months.

After much delay the consent of the War Department was secured for the weir across the river necessary at each annual low water period. A bond of $25,000 was exacted by the War Department and a bond of $100,000 was required by the Yuma Water Users.

The office of Secretary was declared vacant. John Graham was appointed to succeed C. M. Berry.

The Board called on the Los Angeles Clearing House Association to name two engineers who had never been associated with the Reclamation Service to act with Rockwood to form an engineering board. C. E. Grunsky and Geo. C. Anderson were employed at a salary of $300 a month each plus $50 a day when in the field.

A new recall petition was filed against Director Hamilton.

The office of Secretary was again declared vacant. F. H. McIver was appointed to succeed John Graham September 26.

The new tax rate was set at .0175 to raise $390,000.

Attorney Conkling resigned September 29.

A recall petition against Director McBride was filed October 3.

ENTIRE BOARD RESIGNS

On October 5 the entire Board, with a desire to bring about harmony if it could be done, resigned in a body. The Board of Supervisors immediately appointed Leroy Holt, R. D. McPherrin, J. S. Nickerson, C. D. Manning and J. M. Edmunds to take their places. The new Board named Leroy Holt president.

Phil D. Swing was named Chief Counsel. C. E. Paris was named Business Manager. The Board of Engineers was directed to outline an extensive program of protective improvement.

On motion of Director McPherrin the Board requested the Department of the Interior and the University of California to make a co-operative investigation to determine upon what terms and conditions the Federal Government might become interested in the irrigation and protection of Imperial Valley.

In November, representatives of the Laguna Water Company requested the new Board to take an interest in their plans for the improvement of the Eastside mesa. The matter was referred to the legal department and Board of Engineers.

Business Manager Paris proceeded to sell all useless property and materials, install business-like methods and demand efficiency from all employees.

J. E. Peck was employed to study the silt problem.

The big improvement program suggested by the engineers compelled the Board to borrow $200,000.

POLICY STATED

A request of Imperial Laguna Water Company for a canal right of way through Hanlon ranch was filed. The new Board's attitude toward the Eastside project was at last outlined in a resolution which declared that they were in favor of the earliest possible development of the mesa and were friendly and willing to co-operate within the limitation that would insure the priority of water rights to the existing developed lands and that they were against added burdens or liabilities for the existing irrigation system.

Chief Engineer Rockwood was relieved of his duties December 31. Engineer C. K. Clarke was employed to take his place.

1917

The program outlined by the Board of Engineers required that plans be laid for a bond issue of $2,500,000. The Board secured the co-operation of all mutual water companies, the Board of Supervisors, numerous civic bodies, the Bankers' Association, etc., to carry on a campaign favoring the bonds.

The February election resulted in the re-election of all members of the Board. John Loofbourow was elected assessor and R. H. Maddux treasurer. Leroy Holt was again named president.

The district went on record in favor of paying the S. P. claims for closing the river which were again before Congress.

In April petitions for the first bond election signed by F. B. Fuller and 4640 others, which constituted a majority of title holders, was filed and the election was called for May 26. The results of the election were 2372 to 181 in favor of the $2,500,000 bond issue. The sale of the bonds was set for August 28.

Directors Holt and McPherrin were sent to Washington to confer with Secretary Lane about the opening of the mesa lands for entry.

This was the war period and the Board contributed $50 to the Red Cross.

C. E. Paris, Business Manager, resigned his office.

The Yuma Water Users Association demanded $25,000 in cash instead of the usual bond to guarantee against loss from the District weir.

The estate of John M. Eshleman filed a demand for $20,000 for legal services. After conferring with the old board the District Directors allowed $5000.

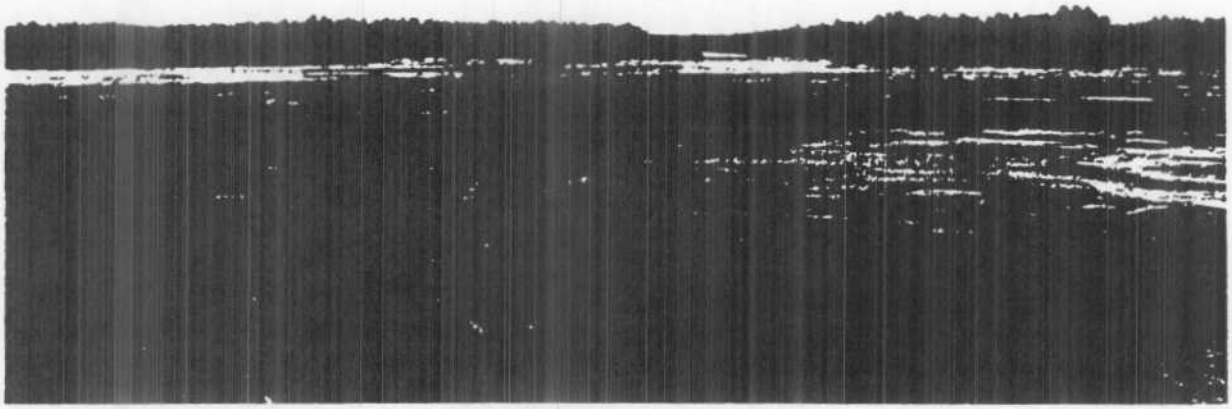
The Board filed exemption claims for all employees drafted for war service.

The offer the Pacific Mutual Life Insurance Company for $1,600,000 of the District's bonds at 83 cents on the dollar was accepted.

Chief Engineer, C. K. Clarke, was also made General Manager.

The 1917 assessment rate was .0175 to raise $378,835.

The County Council of Defense was given $500 for the purpose of recruiting labor to take the place of men gone to training camp.



The Force of the Colorado is Majestic. This Levee Breach in 1926 was serious. The Secondary Levee held the Flood out of the Valley.

A proposition to pump water from the river at low stage period was carefully studied.

HISTORIC MOTION

In November the Secretary of the Interior was requested to make an immediate survey to determine the cost and feasibility of connecting Imperial Valley with Laguna Dam by the construction of the All-American Canal. Director Nickerson made the motion and Director McPherrin seconded it.

Engineer George Anderson resigned.

The Board ordered all levees in the lower river raised.

The Blankinhorn-Hunter Company bid 83 cents on the dollar for $1,500,000 of the District's bonds. The 17 per cent discount represented a loss of $253,000. The offer was accepted.

1918

FIRST ACTION

A communication from Secretary Lane accepted the District's proposition for a survey of an All-American Canal route, the district to pay $30,000 and the government $15,000. Director McPherrin moved to accept the Secretary's offer by wire, and the Board sent Attorney Swing, Engineer Grunsky and Director Holt to Washington to work out the details of the contract. A mass meeting was held in El Centro and the people indicated support for the proposition.

The prospective connection with Laguna Dam caused a conference to be called in Yuma where the leaders of the two communities adopted "a Declaration of Fundamental Principles," which was in substance an agreement to deal with each other openly, frankly and in a friendly manner. The preliminary contract with the Government was signed February 5, 1918. During the period of consideration another mass meeting was held. The District wired its delegation in Washington that the power feature should be reserved to the District, and if the Government wished to reserve it credit should be given to the District for all revenues. The final contract as submitted by Secretary Lane was not satisfactory to the District, which insisted that the proposal to join Laguna Dam and the proposal to build an All-American Canal be written into the contract as a unit and submitted to a vote of the people. Another mass meeting was held May 22 and another committee consisting of Leroy Holt, Phil D. Swing and T. P. Banta was appointed to go to Washington and work out the changes. On June 4 a new contract was ready and was forwarded to Secretary Lane for his consideration. One of the features of the contract was the Government's flat charge of $1,600,000 for the privilege of connecting with Laguna Dam. This was to be paid over a period of twenty years. Since the contract was signed, the Imperial Irrigation District has paid to the Government a total of $709,000 under this agreement.

Under the terms of this contract the Government reserved the control of the power and the District agreed to pay quarterly in advance its share of the cost of maintenance and operation as determined by the Government. The contract was put before the people January 21, 1919, and was approved by a vote of 2535 to 922.

In September the assessment rate adopted was .0325 to raise $709,000. $300,000 of which was interest.

A committee of water company officials, consisting of W. J. Best, W. P. Mansfield, R. A. Walker, W. A. Edgar and Duncan McKenzie, urged the Directors to raise the water rate from 50 to 75 cents an acre foot. The district gave notice that the change would become effective February 1, 1919, but when the time came it was postponed indefinitely.

Attorney Swing resigned in order to enter training camp. J. Stewart Ross was appointed temporary Counsel.

Water company officials demanded that the District ask the Mexican interests to help pay for the protective work. They also urged the district to outline a two-year program for the lower river and called for a new bond issue.

Chief Engineer Clarke was relieved of his duties December 31. C. N. Perry was named Chief Engineer and General Manager.

1919

AN IMPORTANT RESOLUTION

Reference has already been made to the results of the election on the Laguna Dam connection, which was approved by a big majority. On the same ballot under a resolution offered by Director McPherrin and seconded by Director Nickerson, the following proposition was placed before the people: "Do you favor instructing the Board of Directors to request the Secretary of the Interior and Congress to include the Imperial Valley, both improved and unimproved lands, in a unified Colorado River project in which appropriate federal legislation shall provide (*a*) for storage of waters on the upper Colorado

river for the irrigation of arid lands and the development of power (*b*) for connection with Laguna Dam under such conditions as shall be approved by the Secretary of the Interior and (*c*) adequate provision for the permanent and sufficient control of the flood menace on the lower river?"

This resolution was approved by a vote of 2355 to 495. While this was not exactly the first mention made of the proposal to treat this project as a unit, including storage, it was the first expression of the people on the subject and Directors McPherrin and Nickerson must go down in history as the authors of the resolution which outlined almost exactly the program which has been carried forward for the last twelve years.

The election in February of 1919 presented a unique problem. It will be remembered that the entire board resigned in 1916 and a new board was appointed; then the entire new board was re-elected in 1917. The new board failed to draw lots for the long and short terms and when 1919 rolled around the question of who was to go out of office had to be decided. Attorney Swing, just back from officers' training camp, decided that elections must be held in the Brawley and El Centro districts only. Leroy Holt declined to run and J. Stanley Brown was elected to his place. J. S. Nickerson was re-elected. John S. Loofbourow was elected Assessor and Collector, and R. H. Maddux was returned to the office of Treasurer.

Communications from Water Company No. 7 and the Holtville Commercial club requested that Mark Rose be put on the committee to work in Washington for legislation necessary to the start of actual work on the All-American Canal project.

FIRST CO-OPERATION

The following important resolution was offered by Director Manning and adopted March 11, 1919:

"*Whereas*, Representatives of the Westside Irrigation Company, the Coachella Valley Water district, Imperial Laguna Water Company, The All-American Canal Association of Los Angeles and other owners of arid lands in Imperial and Riverside counties have this day appeared before this Board and have declared their desire to co-operate in all proper ways in an immediate effort to carry into effect the terms and conditions of the District's contract for the construction of an All-American Canal to the end that such a canal when constructed shall be of capacity sufficient to supply the needs of such arid lands in Imperial and Riverside counties not now included within the boundaries of the Imperial Irrigation District. Now, therefore, be it

"*Resolved*, That this Board express its approval of the proffered assistance and invite all accredited representatives of the above mentioned associations and other owners of such arid lands to co-operate with the officers and Directors of the Imperial Irrigation District in making such representation to Secretary Lane, the Director of the United States Reclamation Service, and the Congress as may be required to secure the departmental and congressional action to finance and construct such canal and storage works as may be required for the irrigation of the whole of such arid lands."

Attorney Swing was sent to Washington in May in order to secure the approval and support of the District's program by department heads before the next session of congress. In wording the letter of instructions to Swing the original proponents of the All-American Canal idea seemed fearful that the injection of the storage proposal might nullify or make more difficult Government aid in the construction of the All-American Canal. Directors Brown and Manning voted against the letter of instruction that included a paragraph about storage but the letter was sent ahead by the votes of Directors McPherrin, Nickerson and Edmunds.

Mark Rose was added to the District's lobby committee. He was already in Washington and his credentials were sent by wire.

The report of the All-American Canal engineering board that the project would cost not less than $30,000,000 was somewhat of a bombshell.

The enormous amount of protective work on the lower river having consumed the money raised by the $2,500,000 bond issue, another bond election for the same amount was called for September 15, 1919. The bonds carried 845 to 388. They were sold to a syndicate at slightly better than 91 cents on the dollar. This was an improvement over the 83 cents received for the first issue but it meant a loss of $230,000 to the people.

The Imperial Valley delegation in Washington conferred with Representative William Kettner and together they outlined the Kettner Bill, H. R. 6044, the first bill introduced in Congress looking toward the Valley's protection and expansion.

A BIG SACRIFICE

Another bombshell was fired. This time appropriately enough by the cohorts of young soldiers just returned from France. That vigorous young organization, the American Legion, suggested that it would be a mighty fine thing to give ex-service men the prior right to file on the new lands that would be watered by the proposed All-American Canal. The initial suggestion was made through the Imperial County Farm Bureau to the directors of the Irrigation District. The "bombshell," if such it was, was fired in the air and came down in the ranks of the Imperial Laguna Water Company's stockholders. This little band, under the leadership of Mark Rose, had fought and struggled from the beginning for the All-American Canal which was to water the high lands on which they claimed by reason of investment and effort the first right to file. They saw, however, the popularity that would be thrown behind the Kettner bill if it contained a provision to favor the soldiers and sailors and rather than endanger the bill by opposing this feature they asked only to be allowed prior rights to file on 20,000 acres, leaving some 245,000 acres for the soldiers and sailors. Even this small request was denied them. They did not sulk in their tents, however, when the battle went against them. Believing that the great project just being launched called for the effacement of personal ambitions for the good of the Valley as a whole they threw their support behind the proposed legislation and have ever since been staunch leaders in the fight.

In September, Attorney Swing resigned as counsel for the District to become Superior Court Judge for Imperial County.

With the approach of the opening of Congress the district appointed Director Nickerson, Director McPherrin, O. N. Shaw, Walter Kibbey and A. M. Nelson to lobby for the new Kettner bill. The committee was specifically instructed to support the bill only in case it included a storage plan "to insure an adequate supply of water for all lands outside the present boundaries of the Imperial Irrigation District."

1920

THE KINKAID BILL

The second Kettner bill provided that the Government take hold of the Valley's project but when the Arid Lands Committee took up the bill, Congressman Kinkaid, Chairman of the Committee, declared that it was necessary that the Government should know first whether or not there was a site for a dam, how much it would cost and other details. He introduced a bill known as the Kinkaid bill that authorized the Government to make surveys, borings and otherwise investigate the upper reaches of the stream. The cost was to be borne by the lands to be benefited. The introduction of this bill nullified for the time any efforts in behalf of the Kettner bill and the District's lobbyists in Washington were recalled.

Rock Trains are Loaded and Held Ready for Emergencies at Hanlon Heading.

A Colorado River Conservation Conference was called to meet March 17 in Los Angeles. Director McPherrin was delegated to attend. The whole Board decided to attend a session of the League of the Southwest.

Director Manning, of Holtville, resigned May 1 and a few weeks later Mark Rose was appointed to the place by the Board of Supervisors.

The salary of the Chief Engineer was raised to $750 per month.

Chief Engineer and General Manager C. N. Perry resigned May 1. S. T. Tyler was appointed acting General Manager.

April 27, Mutual Water Companies suggested that the river be put back in the old channel and a reservoir made of Volcano Lake. The proposition was rejected on the ground that it was inconsistent with the Lane contract.

The District made its first payment of $32,000 on the Laguna Dam contract.

The Assessor was ordered to raise valuations 100 per cent.

All bids on the $500,000 worth of bonds were rejected and a new sale date set. The Valley banks and the Southern Trust and Commerce Bank of San Diego offered $450,000 for the half million dollar issue. This was 90 cents on the dollar.

One of Mark Rose's first motions as a Director was to allow ten per cent discount on water bills for seepage and evaporation.

The dredge, El Centro, was reported sunk in the main canal.

In order to finance the investigations and surveys under the provisions of the Kinkaid bill, A. P. Davis, Director of the U. S. Reclamation Service, called a conference of all parties interested. The District had five delegates, the American Legion five, Coachella Valley three and the State of California, Yuma, Westside Water Company, Palo Verde, Los Angeles, San Diego and the League of the Southwest one each. The District Board voted $40,000, Coachella $5,000 and the U. S. Government put in $20,000 to provide an expense fund for the surveys.

The Valley's Washington committee members were allowed $10 per day for their services. Attorney Phil Swing was allowed $2500 and Mark Rose $1000; other members of the committee were Mike Leibert, W. H. Brooks, O. N. Shaw and R. D. McPherrin.

In 1920 the Collector's books showed that $38,973 too much had been raised to pay the interest on the bonds. The money was put in the general fund. This practice has been repeated annually.

The salaries of the Assessor and the Treasurer were increased to $250.

F. N. Cronholm, Superintendent of the River Division, was advanced to Chief Engineer and General Manager. He said that more than a million dollars was required for necessary protective work.

J. S. Loofbourow resigned as Assessor-Collector. The Board praised him for his faithful and efficient services. C. W. Barry was appointed to the position.

The remaining $500,000 of the 1919 bond issue was ordered sold but when the time came to open bids there were no bids. The sale was re-advertised and the Southern Trust and Commerce Bank took the issue at 85 cents on the dollar.

Walter Kibbey was employed to protect and advance the interests of the District in Washington.

On November 23, Director Davis of the Reclamation Service reported that borings, surveys, examinations and studies of the Colorado were going on. He enunciated the principles under which the project was being advanced. He said that irrigation had the first interest and power was secondary. The distribution of power must be first for irrigation, second for municipalities, third for other organizations and fourth for private consumption. The cost was to be borne proportionately. The District sent $30,000 more to the expense fund.

The supplemental contract with the Secretary of the Interior to comply with the provisions of the Kinkaid bill was secured.

The District adopted a plan of allowing one and a half days' vacation credit for each month of employment.

1921

POWER COMPANIES INTERESTED

The power companies became interested in the power possibilities of the proposed improvement on the river and made application to the Federal Power Commission for the right to develop $2,500,000 horsepower at Marble Canyon. The application was strongly opposed by the District.

A Senate bill permitting Yuma to sell waste water for use in Mexico was opposed by the District.

The February election returned Directors Brockman, McPherrin and Rose to the Board of Directors. Director Nickerson was made President.

The river bed was reported four feet higher than in 1918 and there was grave danger that the levees would be breached.

Assemblyman W. F. Beal introduced a bill to limit the voting power at bond elections to property owners. Director McPherrin moved that the proposition be opposed and that the District also oppose "all other irrigation bills introduced by Assemblyman Beal."

Engineer Grunsky was relieved as Consulting Engineer in April.

The Chief Engineer asked for $60,000 to put rock on the face of the Ockerson levee. Director Rose opposed this because he believed it was meant for the protection of Mexican lands and not the District.

Director Brockman introduced a resolution to the effect that during the summer months excess water be run through the canals for the purpose of sluicing, thereby reducing dredging costs. The plan was adopted.

Resolutions were passed asking that Director Davis, of the Reclamation Service, be retained in the employ of the Government.

A recall petition against Director Brown was filed with the Board. Mr. Brown resigned as Director from the El Centro division. The Board entered a resolution of regret and commendation for the faithful and efficient services rendered during his terms of office.

Roy E. Breedlove was appointed by the Board of Supervisors to fill the vacancy. Breedlove was seated, Director Rose protesting because of the existence of a recall petition against the former director.

Director McPherrin was appointed special representative of the District in Washington to look after the Valley's interests under the Kinkaid bill.

The recall petition against Director Brown was declared insufficient and new papers were filed. These were declared sufficient but the Board refused to call an election on the ground that the petition was filed after a vacancy existed.

The matter of drainage to protect lands adjacent to canals from seepage was becoming an important issue. G. W. Murphy, Drainage Engineer, was employed to report.

September 20 a joint meeting was held with representatives of the County Farm Bureau, Tax Payers' Association, Water Improvement Association, Bankers' Association, Associated Chambers of Commerce, American Legion, Coachella Water District and Palo Verde Mutual Water Company, to take up matters affected by the Kinkaid Bill. It was decided to ask Director A. P. Davis to call a conference in Denver. President Nickerson was delegated to attend. He reported that the Government wanted more money to go ahead with river surveys. The District appropriated $30,000 more for the expense fund, making a total of $100,000 for this purpose.

The entire Board attended a conference called in Washington by Secretary A. B. Fall. T. J. Worthington, for the American Legion, was added to the delegation.

The Washington conference resulted in the knowledge that $150,000 more was needed to finish river investigations and this sum was raised by various municipalities and interests involved so that the work could go ahead. The District's last $30,000 contribution was counted on this new demand.

A proposal from the Colorado River Land Company in Mexico to co-operate with the District in the levee protection work was welcomed.

SEVEN STATES AROUSED

The magnitude of the Colorado River Project continued to grow. The work contemplated by the Government under the Kinkaid Bill aroused the leaders in the entire seven states affected with the result that Representative Mondell introduced a bill providing for the appointment of a Colorado River Commission to inquire into and recommend action along lines that would protect the interests of each state represented. Wyoming, Colorado, Utah, Arizona, Nevada, New Mexico and California were to be represented.

Phil D. Swing, now Congressman from the Eleventh California District, wired the facts to the District in November, 1921.

Chief Engineer and General Manager F. N. Cronholm resigned his position and Ray S. Carberry was appointed to the place.

1922

The new year started off with a conference between the District and representatives of the Mutual Water Companies looking toward the purchase by the District of all the Mutuals.

The State of California having appointed a Water Consulting Board to make a general survey of the state's water resources, the District accepted the invitation of Otis B. Tout, member of the State Board, to lay before it the problems confronting the Valley. Directors McPherrin and Nickerson were appointed to attend the meeting of the State Board for this purpose.

CONSOLIDATION

The matter of purchase by the District of all properties of the Mutual Water Companies came to a head in January when a contract was made with Water Company No. 6 to this end. The price agreed was $10 an acre for each water stocked acre of land, plus appraised value of equipment, the District to issue bonds to raise money to make the purchase. Water Company No. 12 was the next to sign a contract. Other Mutual Water Companies, after careful consultation and study, agreed to the proposal and signed contracts.

Chief Engineer Carberry submitted a report showing that the sum of $7,500,000 would be necessary to buy out the Mutuals. The Board started bond proceedings March 28 by adopting a resolution offered by Director Brockman.

The long awaited report by A. P. Davis, of the Reclamation Service, on the works necessary to build a high dam at Black or Boulder Canyon and construct an All-American Canal was at last signed by Secretary Fall and was submitted to Congress February 8, 1922. The District thereupon appointed President Nickerson to go to Washington and asked the Farm Bureau and American Legion to appoint men to assist Nickerson. The sum of $500 was appropriated to pay the expenses of the Legion delegates and a like sum for the Farm Bureau delegates. The sum of $1000 was advanced President Nickerson. The work the delegation had to do was to outline and support legislative bills designed to carry out the recommendations made in the Davis report covering the Boulder Dam and All-American Canal project.

Low Water Follows every Flood Season. The White in the Picture is Dry Ground. In 1924 the Valley Used every Drop of River Flow for Two Months. Hoover Dam will Remedy This.

A petition signed by 1108 property owners asking that the District call a bond election for $7,500,000 to take over the mutual companies was filed with the Board April 27, 1922. The election was called for June 1. The bonds were favored by a vote of 2118 to 425. These bonds were to start maturity in 1935 and bear interest at the rate of 6%.

HOUSE BILL No. 11449

Representative Phil D. Swing introduced House Bill No. 11449 in the lower house of Congress, April 25, 1922, authorizing the Department of the Interior to order construction of the Boulder Canyon Dam. This bill became known as the Swing Bill and a similar measure, introduced in the Senate by Senator Hiram Johnson, caused the two measures to be combined and they became known as the Swing-Johnson Bill. This bill was the result of numerous conferences between all interests concerned. The Imperial Irrigation District made plans to support the measure through the hearings before the Arid Lands Committee. One of the educational means employed was a moving picture showing the Valley, the protective works, plans, maps, etc., together with scenes at Boulder Dam site and along the Colorado. Strong delegations were to be sent to Washington. Newspaper articles began to appear all over the country. Interest in the proposed damming of the Colorado was nation-wide.

President Nickerson being absent in Washington, Director McPherrin was made president of the Board in order that the new bonds might be properly signed.

BONDS BRING .94

The First Securities Company of Los Angeles and the Anglo-London-Paris Company of San Francisco offered .94 on the $1.00 for $1,000,000 of the fourth bond issue and asked an option on $4,500,000 more at the same price. This was the highest price secured by the District for bonds up to this date. The offer was accepted. The companies took additional bonds at .94½. The District issued notice to all Mutual companies that payment of cash for their properties would begin November 1, provided deeds were prepared.

CHANGE FOR MADDUX

R. H. Maddux resigned as Treasurer of the District in order to enter the District's service under General Manager Ray Carberry. F. H. McIver was appointed Treasurer and continued as Secretary.

Landowners in the No. 3 district petitioned to have their lands excluded from the Irrigation District but when a vote of stockholders was taken the sentiment was against exclusion and the matter was dropped.

Upon recommendation of the Chief Engineer the District purchased two blocks of ground in the city of Imperial on which buildings and shops were to be constructed to house the headquarters operating force and mechanical departments.

RIVER COMMISSION AT WORK

Throughout the fall of 1922 the Colorado River Commission, appointed under provisions of the Mondell Bill, worked toward the point where an agreement could be signed by each state as to the allocation of water and power from the Boulder Dam. The first "compact" was ready in December and was ratified by resolution by the District Board.

The Board also went on record officially endorsing the new "Johnson-Swing" Bill, which was now H. R. No. 2903. President Nickerson was sent to Washington again to work for the success of the bill. Mark Rose and Attorney J. S. Ross were added to the delegation.

1923

The Board asked the Secretary of the Interior to relieve the District of the requirements of the Lane contract which compel an annual payment for connection with the Laguna Dam. The request was denied.

In January it became apparent that no action would be taken by Congress on the Swing-Johnson Bill during that session. The delegation in Washington asked permission to invite the Appropriations and Arid Lands Committees to visit the Valley and the Boulder Dam site at the expense of the District.

DISTRICT TAKES OVER MUTUALS

The final report of J. E. Peck and C. N. Perry, the Board of Appraisers for the properties of the Mutual companies, was filed. The amount was $169,000 over and above the maximum of $4,725,000 set, so the Mutuals deducted 3½% and absorbed the loss. The entire irrigation system was then in the hands of the Imperial Irrigation District.

The February election resulted in the retirement of Roy E. Breedlove and the election of Ira Aten in the Second Division and the election of Earl C. Pound as Director from the Fourth Division. Mr. Nickerson was not a candidate for re-election. C. W. Barry was returned Assessor-Collector and F. H. McIver was re-elected Treasurer. Director Ira Aten was named President of the Board.

The office of Chief Counsel was declared vacant in April and Attorney Chas. L. Childers was appointed to the place. A resolution of commendation for the faithful service of J. Stewart Ross was spread upon the minutes. He was Chief Counsel four years.

The District opposed the passage of any bills by the state legislature affecting irrigation districts without first securing the approval of the State Irrigation District Association. A bill providing for the election of directors at large was successfully opposed.

The District embarked upon a comprehensive drainage program following the report of Engineer Murphy and met some difficulty in securing rights of way through private lands.

A further purchase of the fourth issue of District Bonds was made by the First Securities Company at .97½, the highest price yet received for any District bond issue.

The District joined the Boulder Dam Association.

The District Board, evidently accustomed to paying for everything and for all entertainment of visiting delegations, etc., was so surprised when Geo. Hickcox, war veteran, refused to accept pay for a load of watermelons used in the entertainment of Secretary of War Weeks and his party, that a resolution of thanks was spread upon the minutes June 19.

The San Diego Chamber of Commerce went on record favoring early passage of the Swing-Johnson Bill.

F. W. Greer was employed to carry on the publicity campaign for the furtherance of the Boulder Dam All-American Canal project at a salary of $300 per month.

The District decided to carry its own fire insurance and carry a fund into which was paid premiums as if carried in private companies.

The Inter-Post Council, American Legion, conducted a campaign throughout the state enlisting support of all Legion posts for the Boulder Dam legislation pending before Congress. The committee, consisting of John M. Kepley, Harry L. Foster, C. G. Mousseau, J. Ansell and Elmer Heald, was thanked by resolution.

This year the War Department failed to act, from May until August 30, on the District's application for a permit to build the light weir across the river at the heading. The delay caused much apprehension.

Director McPherrin, on account of the demands of private business, placed his resignation with the Board. It was accepted a month later, October 12, 1923.

The item of interest on bonds this year amounted to $812,500. Since taking over the Mutual companies, operative costs were just over a million. The two items made the tax rate $5.00 on the $100 valuation.

The United Spanish War Veterans in national encampment endorsed the Swing-Johnson Bill at the request of J. M. Grafton, Commander of Imperial Valley Camp No. 62, for which the District thanked Mr. Grafton.

Mack Trentham was appointed by the Board of Supervisors to fill the vacancy caused by the resignation of Director McPherrin.

In November, 1923, the budget for the following year as prepared by Chief Engineer Carberry was not accepted or approved by the Board. After five distinct attempts on motion of Director Brockman, seconded by Director Rose, the 1924 budget was approved November 30.

The admission of several new tracts of land into the boundaries of the District caused a realignment of the boundaries of the five divisions.

Director Mark Rose was directed to proceed to Washington to protect the interests of the District on the Colorado River situation and work for the new Swing-Johnson Bill.

Director Brockman offered a resolution allowing the claim of Mark Rose for $1260 for four months' work in Washington in 1919. The resolution failed to pass as Directors Aten, Trentham and Rose did not vote on the motion. The resolution was presented again and the claim was allowed.

F. W. Greer was directed to proceed to Washington and work for the Swing-Johnson Bill under the direction of Mark Rose, at a salary of $700 a month, plus railroad and Pullman transportation for himself and Mrs. Greer. The next day Greer appeared before the Board and tendered his verbal resignation as Publicity Agent, to take effect at once.

Rev. George A. Hartman was employed as a delegate of the District to work in Washington for the Swing-Johnson Bill. S. O. Buck was added to the delegation.

The record for the year just closed shows that because of the absorption of the Mutual Water Companies a vast amount of detail was added to the labors of the Board. All complaints for all sorts of reasons such as water deliveries, flooded crops, etc., formerly handled by the Mutuals, came before the Board. Every minute activity where there was a dispute was passed up to the Board. Even the quarrels of neighbors came up and in one case at least the Board recommended that its policy was "hands off."

1924

The Board asked the Secretary of the Interior to postpone demand for payment of the fifth installment on the Laguna Dam contract.

Assessor C. W. Barry declared that the method of assessment heretofore used making a blanket valuation of $100 an acre for cultivated or crop producing land and scaling downward the valuation on lands less productive was not according to the law and asked the Board to authorize him to make a real assessment and give actual valuation to all the lands within the boundaries of the District. The request was denied by the Board, Director Pound favoring the new method.

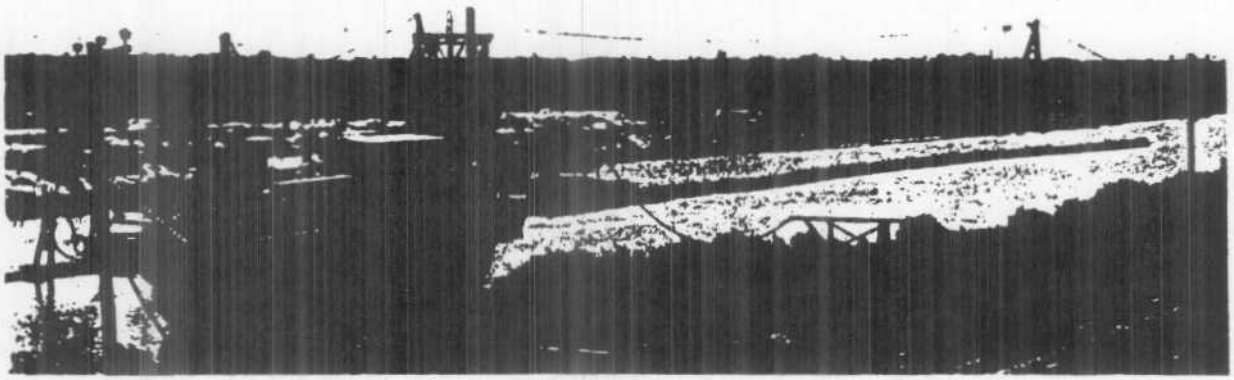
In March, the Board sent a telegram to President Calvin Coolidge urging him to instruct Secretary Fall to report upon the physical features of the Swing-Johnson Bill. Delegates Hartman and Buck were requested to return from Washington. Elmer Heald was added to the Washington delegation.

Earl C. Pound was named President of the Board.

Strong opposition to the Boulder Dam project became apparent when three Cabinet members in Washington issued a report recommending the building of a low dam, ignored the installation of power generating works and otherwise was in opposition to the Swing-Johnson Bill. This report was evidently designed to keep the generation and sale of power in the hands of private corporations. It called forth a 1000-word telegram to Addison T. Smith, Chairman of the House Committee on Irrigation and Reclamation, strenuously protesting against the report.

A vote of thanks was extended the Christian Science Monitor for excellent publicity supporting the Boulder Dam project.

The Board declined to accept an offer made by Leroy Holt for the purchase of $50,000 of a fourth bond issue at 95 cents.



Two of these Electrically Operated Suction Dredges take Silt from the Main Canal and force it across a narrow Strip of Land into the River.

The J. R. Mason Company offered .97½ for $50,000 worth of bonds. The offer was accepted. The sale of these bonds was for the purpose of continuing and completing the drainage system.

On motion of Director Brockman, Director Rose was again authorized to go to Washington to work in the interest of the Swing-Johnson Bill. Director Rose selected Elmer Heald and F. W. Greer to go to Washington with him.

DIVERSIFIED DEMANDS

Illustrating the diversified demands made on the District note is made of the communication from the Chief of the Land Classification branch, U. S. Geological Survey, under date of June 5. He asked that the District provide board and lodging for an airplane crew taking pictures for the Government near Salton Sea. Of course the District agreed but was not called upon to comply.

F. W. Greer was employed to carry on an educational campaign for the Boulder Dam–All-American project, at a salary of $100 per month.

In 1924 the Southern Pacific Railway Company and the Title Insurance & Trust Company brought suit against the Irrigation District attacking the validity of the 1924 assessment. In August they withdrew the action.

In order to meet the demands of the public for detailed information about the Boulder Dam–All-American Canal project the Board requested Attorney C. L. Childers to write a history of the legislation and a description of the project for publication. The history compiled was complete and has been the foundation for nearly all accurate statements written about the project since that date.

BONDS REACH PAR

In October, 1924, the First Securities Company of Los Angeles, the Anglo-London-Paris Company of San Francisco and Rutter & Company of New York, made an offer for $500,000 of the Fourth bond issue at par and the offer was accepted. This was the first time since the first issue that District bonds were sold at par.

AMENDMENTS URGED

There developed in the Valley, in the minds of a considerable number of people, the belief that the All-American Canal might be an unbearable burden to the already cultivated lands. While all were anxious that the Colorado River be dammed in order to control the flood flow of stream they were willing to allow the development of the Eastside Mesa section and other high lands to wait until they could bear their own financial burden. This belief resulted in the formation of the Colorado River Control Club.

A committee from this club, consisting of Messrs. R. D. McPherrin, W. S. Fawcett, C. E. Paris, O. G. Horne, T. J. Worthington and A. Dolson appeared before the Board of Directors of the District October 24 and requested that the District recommend amendments to the Swing-Johnson Bill that would relieve the Government from making any commitment on the All-American Canal feature until the Valley was assured of an adequate supply of stored water and that the Government should forbid the Secretary of the Interior to accept any guarantee of repayment for the construction of the canal except upon a bond issue based upon a petition signed by fifty per cent of the property owners.

The District Board issued a statement to the people combatting the principles of the Control Club.

REDIVISION OF DISTRICTS

The growth of population and assessed valuation in the north end of the Valley caused the communities of Calipatria and Niland, supported by Westmorland and Brawley, to seek a realignment of the District's five divisions. District No. 4 at this time had a population in excess of any two districts and an assessed valuation that amounted to 44 per cent of the total.

The District Board, heeding the demands made through the Chambers of Commerce, ordered No. 4 divided, giving the Calipatria-Niland section a division. The remaining four divisions were realigned, giving the Calexico, Imperial, Brawley and Holtville sections equitable representation.

In the reorganization program the offices of the Chief Engineer and headquarters of the construction and operative departments were ordered removed to Imperial from Calexico. This was accomplished as soon as new buildings and shops were built.

BEFORE CONGRESS AGAIN

In December the Swing-Johnson Bill was again before Congressional committees where hearings were continued. Mark Rose was again authorized to go to Washington and the District provided means for delegates from the Farm Bureau and the American Legion to help.

Proponents of the legislation organized the American Conservation Club for the purpose of assisting with the passage of the Swing-Johnson Bill by Congress.

1925

INDICTED

In 1925 the difference of opinion on the All-American Canal proposition caused those opposing to attack the officers

and directors. The County Grand Jury returned indictments against the entire Board alleging misappropriation of funds. The indictments were dismissed and the same Grand Jury indicted them again. Led by Mark Rose, the friends of the Board got busy and saw to it that Judge M. W. Conkling and District Attorney Utley were defeated at the polls. The next Grand Jury then quashed the indictments.

The suggestion that a treaty arrangement with Mexico regarding the rights to water from the Colorado might be necessary brought out a strong protest from the District Board. Emphatic wires to Senators Johnson and Shortridge that such a procedure would be damaging and result in costly delay, were sent.

The Board went on record as favoring no change in the nine o'clock closing time at the international border.

The suggestion that the Congressional Committee on Arid Lands visit the Valley and personally inspect the region affected by the Swing-Johnson Boulder Dam Bill was greeted with enthusiasm by the District.

The February election resulted in the return of Mark Rose from the Holtville division; the return of C. W. Brockman from the Calexico division and the election of W. O. Blair from the Calipatria division.

BONDS REACH 101

The First Securities Company, the Anglo-London-Paris Company and Rutter & Company offered 101 for the last $450,000 of the District's fourth bond issue and the offer was accepted. This is the first time District bonds were sold above par.

Arizona's opposition to the work contemplated under the Swing-Johnson Bill was a hindrance that troubled the proponents of the project. The preliminary agreement, called the "compact," required the signature of all seven of the states affected. Arizona refused to sign. The advocates of the bill therefore agreed that when six out of the seven states had signed, the compact would become effective. The Irrigation District thereupon sent a resolution to the California legislature requesting action along this line.

A united attack on gophers and muskrats was ordered by the District in conjunction with the county.

Director Pound was re-elected President of the Board.

REORGANIZATION

In September the Board announced a reorganization of all departments to curtail expenses. This included the removal of shops and offices from Calexico to Imperial; the elimination of the Brawley and Calexico East divisions; removal of the Chief Engineer, Consulting Engineer, two Irrigation Engineers and Construction Foreman; installation of a General Superintendent, and a Purchasing Agent; the reduction of material stocks. The changes effected made an estimated saving of more than $100,000 annually.

Wm. Brandenburg brought suit in the Superior Court to restrain the District from removing the offices from Calexico. He alleged that the move was to punish Director C. W. Brockman by the majority members of the Board for political reasons. Judge Jamison, of Modoc County, heard the case and ruled against Brandenburg. He took occasion to say that there was no evidence to show that the changes were made for any other than economical reasons.

W. O. Blair, new member of the Board of Directors, undertook the reduction of operating expenses in the mechanical department. Mr. Blair secured the services of A. L. Graves, a practical mechanic, who surveyed every dredger, excavator, ditcher and other pieces of machinery owned by the District. He remodeled the machines and made changes until the District is now able to handle excavation work for 2½ cents a yard where the average was formerly around 9 cents. He perfected the machines used in the drainage system along these same lines.

The Board protested the removal of the El Centro land office to Los Angeles.

C. M. Berry was employed as Purchasing Agent.

The District agreed to the proposal of coastal cities to form a Metropolitan Water District for the purpose of securing domestic water from the Colorado River after the construction of the Boulder Dam.

It was evident that California, Nevada and Arizona were most interested of all the states in the allocation of water in the lower river basin, so a "Tri-State Conference" was called to see if an agreement could be reached. Assemblyman A. C. Finney of Imperial County; Assemblyman Murray of Riverside County; and State Senators Ralph Swing and L. L. Dennett were endorsed for appointment to represent California in the proposed conference.

Suit was filed by Roy E. Breedlove, former director, against the District, alleging illegal use of money in support of legislation. The District lost, its Directors were indicted but the decision was reversed on appeal and the indictments quashed.

In June the District issued an order that all employees make themselves acquainted with the details of the proposed Boulder Dam and All-American Canal proposition in order to be able to accurately answer questions put to them by anyone.

Engineer D. W. Murphy, in charge of drainage work for the District, was relieved of his duties because of the completion of the work. He was thanked for his good work.

The office of Chief Engineer was abolished July 31 and Engineer Carberry dismissed with a resolution thanking him for faithful and efficient service.

To take the place of the office of Chief Engineer and General Manager the office of General Superintendent was created. This office had charge of all water operations, all operations in Mexico and the United States, all maintenance work, drainage operations, all Superintendents of all divisions and the Engineering Department.

M. J. Dowd, who had been General Water Master, was promoted to the office of General Superintendent with a salary of $500 monthly.

LOCAL POWER POSSIBILITIES

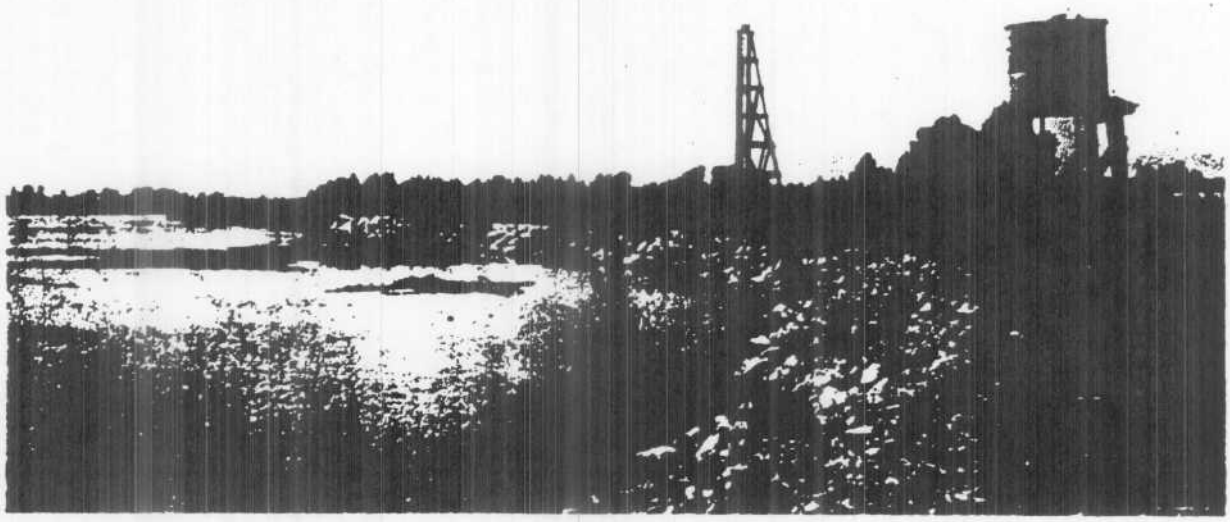
The District in September, 1925, ordered the secretary to communicate with R. W. Shoemaker, Electrical Engineer, and request a conference on the power possibilities of the District. Mr. Shoemaker was employed to make the survey.

The District filed a protest against the application of James Girand before the Federal Power Commission for power rights on the Upper Colorado.

Attorney A. C. Finney was employed as Assistant to General Counsel C. L. Childers.

Hearings before the Senate Committee in Washington on the Swing-Johnson Bill began December 8. The District sent Attorney Childers, Directors Pound and Rose and F. W. Greer to represent the Valley.

In an action in the superior court brought by D. R. Crawford at the suggestion of the District to settle a mooted question, the District was enjoined against the expenditure of District funds for the purposes of advocating or opposing legislation at Washington. The services of B. F. Fly and F. W. Greer were thereupon dispensed with. This decision was later reversed by the Supreme Court.



Pescadero Dam. The Colorado in 1919 flowed to the right. But a new Channel was cut, and the old channel Dammed.

1926

In February, Dr. Hubert Work, Secretary of the Interior, reported favorably on the Swing-Johnson Bill with the exception that he suggested a modification that made the construction of an All-American Canal an alternative improvement dependent upon the failure to secure a favorable concession from Mexico. The District at once opposed this recommendation and urged the approval of the bill as outlined.

The District went on record by a strong resolution in favor of six o'clock closing of the international boundary line, citing "unspeakable wickedness and moral subversion" alleged to exist in Mexicali which cost the citizens of Imperial County more than $200,000 monthly.

Director Brockman introduced a resolution calling for the discharge of several District employees. The resolution failed.

IMPERIAL HEADQUARTERS

In the reorganization of the mechanical department the District established and put into operation shops in Imperial equipped with modern machinery able to take care of most complicated repairs. The District was therefore able to build its own dredges and make its own repairs and replacements on all its own rolling stock, including automobiles, trucks, tractors, excavators, dredges, steam shovels and the like. E. L. Graves was mechanical superintendent.

ARBITRATION POLICY

The District desired to obtain a permanent right to flood at will and use as a part of the drainage basin of the Salton Sea all privately owned lands bordering thereon and lying below the minus 240-foot elevation. As much of this land had been entered, the problem of settlement with owners faced the Board. A policy of arbitration was adopted and worked satisfactorily in most cases. Settlement of some twenty-three cases by this method of arbitration kept that many cases out of court.

A resolution was passed thanking G. G. Young, publisher of the Los Angeles Examiner, for giving "widespread and effective publicity" to the Boulder Dam All-American Dam project.

R. W. Shoemaker, consulting electrical engineer, submitted his report on the matter of power development on existing canals in June.

In August, the Board of Directors felt it necessary to issue a public statement to combat "certain false statements being made purely for political reasons by the enemies of the District administration." This statement denied the Board's intention to increase the five dollar assessment rate and explained that the fixed charges which included the interest and principal on bonds outstanding plus the $96,000 annual payment on the Laguna Dam contract amounted to a total of $1,128,597. These fixed charges amounted to 55.88 per cent of the total assessments, leaving the operation and maintenance of the water system 44.12 per cent of the total.

The state primaries approaching, the District Board took occasion to pass a strong resolution endorsing the candidacy of C. C. Young for Governor and outlined the reasons why Governor Richardson should not be renominated. The resolution stated that the State Government had been in effect opposed to the Swing-Johnson Bill and had refused to take any interest in the proposed development of the Colorado River. The Governor had failed to appoint representatives at critical times and threw the whole burden of the fight on the shoulders of the District when the major portion of the expected benefits were to come to California. The resolution further stated that the assistance of the State was badly needed and that it would be to the best interests of the Valley to give support to Mr. Young.

Owners of various issues of the District's bonds appeared before the Board in October to inquire into the condition of the levee system below the line and discuss the need of emergency Federal appropriations to assist in building new levees. The Board requested the Reclamation Service to make a survey of the situation below the line.

THE FINNEY RESOLUTION

A matter of importance took place in the state legislature when a resolution submitted by Assemblyman A. C. Finney was adopted at the request of the District making the effective date of the Inter-State Compact depend upon whether or not the Swing-Johnson Bill, as finally adopted, would provide for ample and sufficient storage with a high dam. In October, 1926, Governor Richardson called a special session of the legislature for the purpose of ordering the Compact signed immediately and unconditionally. The District successfully opposed the move and the Finney Resolution was reaffirmed. The entire Board, together with its Attorney and General Superintendent, attended the special session.

The District approved the proposed amendment to the State Constitution that would permit Irrigation Districts to own stock in private water companies.

SENATE COMMITTEE APPROVES

The Senate Committee on Arid Lands reported the Swing-Johnson Bill with its approval and it was put on the Senate calendar. The House committee was still considering the measure when Congress convened in December. The Irrigation District sent an urgent wire to President Coolidge asking that he recommend speed on the matter in his message to Congress. Director Mark Rose and Attorney C. L. Childers were delegated to go to Washington to protect the interests of the Valley at hearings on the Swing-Johnson Bill without expense to the District.

1927

In the February election, Directors Ira Aten and Earl Pound were returned as directors of the second and Fourth Divisions; C. W. Barry was re-elected Assessor-Collector and F. H. McIver was re-elected Treasurer.

LOCAL POWER POSSIBILITIES

The District, having in hand the report of Consulting Electrical Engineer R. W. Shoemaker and a further report submitted by Chief Engineer M. J. Dowd on the advisability and feasibility of making use of power sites on the existing canal system, instructed Engineer Dowd to prepare detail plans and specifications on which the District could proceed. The preliminary reports showed that a total of 3,150 horsepower could be developed at Rositas Dam, the Alamo Dam and Number Eight Heading. The estimated cost was $1,600,000. The results outlined indicated that the Valley could be served with electrical energy at lower rates than it now had to pay and that in addition the earnings would be sufficient to retire the bonds within a period of twenty years. The final report indicated a cost of $1,700,000. Application was filed with the State Bond Commission to issue bonds.

The Board passed resolutions thanking individually some fifty-one Government Officials, newspaper writers and others who had assisted in the hard work that had been done to advance the Swing-Johnson Bill through Congress. (This list appears in the chapter devoted to the Boulder Dam-All-American Canal Project to which the reader is referred.)

In April, Director Rose introduced and the Board passed a resolution authorizing Attorney Childers to take steps to have the state law changed to allow the election of seven directors instead of five.

The Board voted to co-operate with the City of El Centro to eliminate the Date canal through the city.

The salaries of the five Division Superintendents were increased to $300 monthly July 1.

Attention was called by the Southern Pacific Railroad company to the contract of 1916 which stipulated that certain lands adjacent to Salton Sea when uncovered by evaporation should not be resubmerged by excess flow of waste waters from the District's water system. The waters of Salton Sea had steadily increased until the surface stood at minus 246.6.

The District partially financed exhibits for the State Fair and the Tulare County fair, and employed D. F. Harbison to take care of them.

With the reconvention of Congress in December, 1927, Director Mark Rose was again authorized to go to Washington and look after the interests of the District. The Swing-Johnson Bill was still in the hands of the committee. President Pound was also authorized to represent the District at the same time he was discharging his duties as member of the Colorado River Commission. Engineer M. J. Dowd was added to the delegation.

1928

Chief Engineer M. J. Dowd compiled a list of eighty-seven rules and regulations governing the operation of the District's business and the delivery and use of water. The code was adopted.

The District took note of the fact that numerous water users were taking water from the Colorado river above the District's intake and instructed its legal staff to take steps to see that the rights of the District were legally safeguarded.

Rights of way for the canal from Laguna Dam southward through the Yuma Indian Reservation were secured by proper contracts.

The interest item on outstanding bonds for 1929 will amount to $844,875; principal to be retired, $250,000; payment on Laguna Dam contract, $96,000; to operate and maintain the District, $859,865.

Since November, 1922, fifty-four court actions in which the Irrigation District was either plaintiff or defendant were handled by Attorney C. L. Childers and staff. In forty cases the District won, ten actions were pending and four were decided against the District. In two cases local decisions against the District were appealed and the decisions reversed.

The State Bond Commission reviewed the application for permission to issue bonds in the amount of $1,700,000 for the purpose of building hydro-electric generating plants and a distributing system and approved the application, raising the amount, however, to $2,100,000.

With the approach of a new session of Congress when the Swing-Johnson Bill was to again come up for consideration, Directors Rose and Pound and Attorney Childers were authorized to proceed to Washington and work for the passage of the bill.

CONGRESS PASSES THE BILL

The culmination of long years of hard work came December 21, 1928, when, by a vote of 166 to 122 the House of Representatives passed the Boulder Canyon Project Act which was the final name given the Swing-Johnson Bill. The Senate passed the bill by a vote of 64 to 11.

The news was received in Imperial Valley and all over the southwest with enthusiasm but the minutes of the Imperial Irrigation District fail to make any mention of the event. However, there was evidently keen satisfaction felt among those who had worked so long and so hard to see this legislation through the national Congress.

1929

Land owners in the Niland District contracted in 1927 with the Irrigation District to build a water system for their lands and the District contracted to take over the system when completed and serve water. The Niland land owners failed to complete the system and called upon the District to finish it. The District agreed.

Looking toward the time when applicants for entry on now withdrawn lands and private lands to be watered when the new canal is ready, will be numerous. The Board of Directors approved a public announcement to the effect that land buyers should be cautious and thoroughly investigate before paying money on any land deal; that it would be three years after passage of the bill before any results could be noticed from Boulder Dam storage and longer than that before the All-American canal could be built and finished. A reminder was included calling attention to the fact that the bill limits entries on Government lands, when restored, to ex-service men only.

When the River is low, Arrow Weed Mats are dropped by the Electric Hoist into the Bed of the Stream to make a Weir to raise the Water Level. These Weirs are Built and Destroyed Annually at a cost of $20,000.

The results of the February election showed that Director C. W. Brockman was returned from the Calexico Division; Director W. O. Blair was returned from the Calipatria Division, and Director Mark Rose was returned from the Holtville Division. Director Pound was again made president.

The Board ordered that equal oil purchases be made from the Union, Standard and Texas Oil Companies.

A resolution was adopted ordering the suspension of sale of sales-certificates and tax deeds for a period of six months, giving the land owner an opportunity to recover from the agricultural depression extant.

The death of Rev. Geo. Hartman was noted with sorrow by resolutions of respect passed by the Board.

The District joined in the effort to have the Federal Farm Bank again make loans on Imperial Valley lands.

Petitions were authorized circulated among land owners for the purpose of requesting the District to go ahead with the power bond issue which matter was being held in abeyance.

PRELIMINARY CANAL SURVEY

March 29, 1929, the District entered into a tri-party agreement with the Reclamation Service and the Coachella Valley County Water District to pay four-fifths of the expense of a survey to be made by the Reclamation Service for the All-American Canal. A total expense of $100,000 was to be the limit. This advance work on the proposed canal was meant to save time and in order to have in hand information as to the final cost of the construction of the All-American canal.

May 14, a resolution authorizing the District to proceed with the calling of a bond election for $2,100,000 for the purpose of installing power generating plants on the canal system failed to pass.

Director Mark Rose, Secretary McIver, Attorney Childers and Chief Engineer Dowd were directed to go to Washington to look after the interests of the District.

In an effort to help landowners meet their assessment obligations with the District the Board adopted a practice, when it was necessary to take tax title to farm lands, to lease the farm back to the owner and apply the rental money toward redemption of the property.

In a communication from the Southern Sierras Power Company co-operation was offered the District in the matter of marketing the power to be produced from generating plants planned for installation on local canals and on the All-American canal.

The death of J. Stanley Brown, former Director, was noted with sorrow and regret by resolution spread upon the minutes.

After eleven years of active publicity work in behalf of the Colorado river legislation in which the District was primarily interested, F. W. Greer tendered his resignation as an employee of the District August 15, 1929. The same was accepted by the Board to take effect August 31.

Edward Hyatt, State Engineer, suggested that the District, instead of building hydro-electric power plants as planned, install a diesel engine plant first and hold in abeyance the water power development until the completion of the All-American canal. The diesel engine plant then would be good stand-by equipment. In the meantime the power produced could be used to advantage in construction work on the new canal. The Board disagreed with the State Engineer, urging that the water power plants would, in fact, serve the same as a diesel stand-by plant and would not cost much more. Chief Engineer Dowd recommended that the water power then going to waste, be developed and the recommendation was adopted as an answer to the State Engineer.

November 29, 1929, the Board noted with sorrow the death of C. W. Barry, Assessor-Collector. Resolutions praised Mr. Barry as "not only a good citizen and a loyal and faithful friend, but one of the most conscientious, painstaking and efficient public officers who has at any time served the public of this community."

D. W. Wiest was named Assessor-Collector to succeed C. W. Barry.

Attorney Childers and Chief Engineer Dowd were directed to attend a conference in Washington with Secretary Wilbur relative to the allocation of power and water provisions of the Swing-Johnson Bill.

Some indication that conditions on the lower river might soon give trouble caused Director Pound to sug-

This Wheel Dredge was Especially Designed for the District by J. A. Graves, Mechanical Superintendent. It will Dig Canals or Drain Ditches with Marvelous Speed.

gest that the District should ask Congress for an appropriation to prevent possible damage from floods. Director Rose was opposed and Director Aten said it would be less expensive to handle the matter without the aid of the Government. No action was taken.

Petitioners asked the Board to call a mass meeting to determine the necessity of extending the drainage system. No action was taken.

1930

Attorney Childers, Chief Engineer Dowd and Secretary McIver were directed to represent the District at the meeting of the Colorado River Commission to be held in Reno.

ALLOCATION OF WATER

After many conferences on the matter of an equitable division of the waters of the Colorado river an agreement was finally reached through the Colorado River Commission, February 21, 1930, whereby the Imperial Irrigation District, the Coachella Valley County Water District, the Palo Verde Irrigation District and the Yuma Project in California should be entitled to 3,850,000 acre feet per annum; the Metropolitan Water District of Southern California 550,000 acre feet per annum and the first right to 550,000 acre feet per annum of the remainder of the river water which may be acquired by the State of California; and the Imperial, Coachella, Palo Verde and the California portion of the Yuma Valleys and other interests to have right to whatever water remains in the total to be acquired by the State of California.

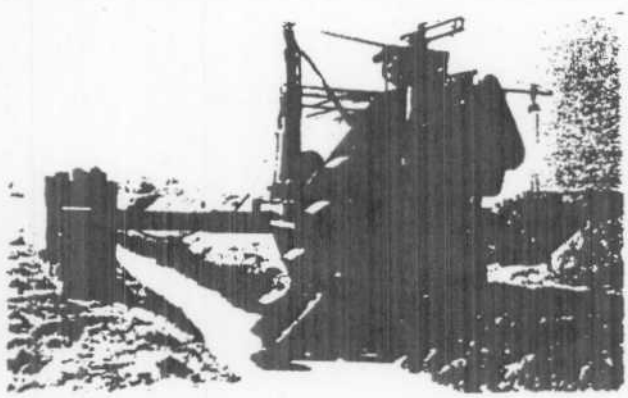
The District Board unanimously adopted a resolution agreeing with this allocation and voted to co-operate with all agencies to see that other districts and parties interested sign the same agreement.

The Board requested the Department of the Interior to forthwith survey or re-survey all unsurveyed public lands within the Imperial and Coachella Valleys under the contour 250 feet above sea level.

The Board requested the Secretary of the Interior and the Commissioner of the General Land Office to restore to entry all lands withdrawn from entry under the Reclamation Law or otherwise within the boundaries of the Imperial Irrigation District except those lands withdrawn by executive orders.

The Board urged by resolution that the Secretary of the Interior be urged to speed up the signing of contracts on the part of all interested Districts and organizations for the purchase of power from the Boulder Dam project so that the construction of the same may proceed without delay. The resolution was adopted March 28, rescinded April 1, and re-adopted April 8.

In the matter of increased use of water below the International boundary line since the passage of the Swing-



Ditch Cleaning Dredge, a Marvel of Efficiency

Johnson Bill the District took a stand against the possible claim for additional water rights on this account.

The District agreed to co-operate with other agencies in employing the Boulder Dam Association to present facts to those in official position having to do with carrying out the provisions of the Boulder Dam and All-American canal bill and to obtain facts and present them to the District. The District's share of the cost to be $100 monthly for one year.

May 6, F. W. Greer was reappointed representative of the District to appear before committees in Washington or elsewhere and render such assistance to Senators, Representatives and other Government officials to further the development of the Boulder Dam and All-American canal, his salary to be $750 monthly, and necessary expenses.

The Chief Engineer was instructed to continue investigations along the All-American canal route north of Gray's Well.

President Pound, Engineer Dowd, and Attorney Childers were named to go to Washington to attend the hearings in support of appropriation measures for the Boulder Canyon act.

The District agreed to a modification of the water allocation agreement wherein the City of Los Angeles and the Metropolitan Water District of Southern California would be entitled to an undisputed right to store 5,000,000 acre feet of water annually in the Boulder Dam reservoir and withdraw it as desired.

The Board passed a resolution opposing the opening of the international boundary line at Jacumba.

A resolution endorsing the candidacy of Governor C. C. Young for re-election was adopted. The Governor always had shown a keen interest in Valley affairs, the resolution stated.

The application of the Southern Pacific Land Company for the inclusion of certain parcels of railroad lands within the boundaries of the District was allowed and the boundaries of the District changed to include the lands.

ACTUAL WORK AT BOULDER DAM

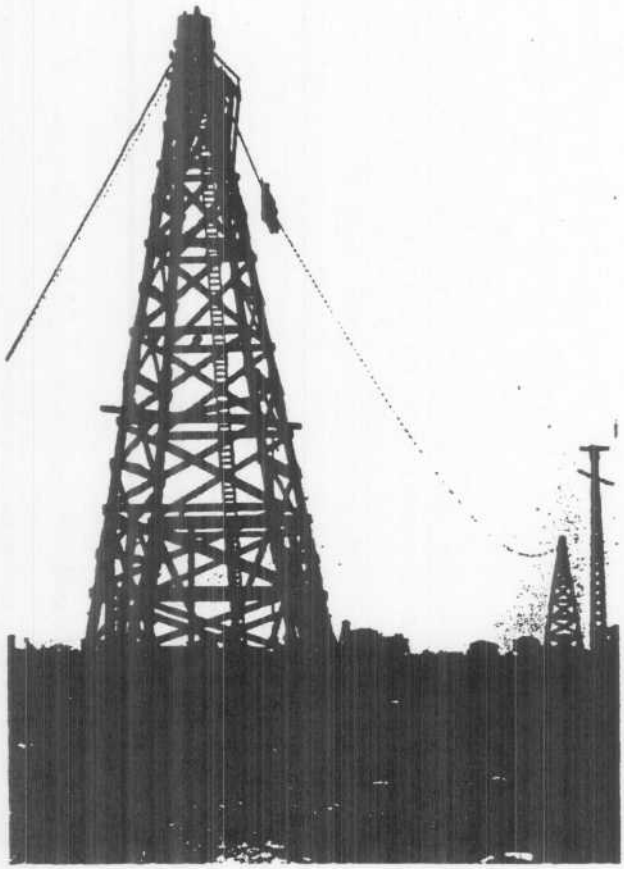
The start of the first work of any sort at the Boulder Dam was set for September 17, 1930. The District Board voted to attend the ceremonies. The event was attended by Secretary Wilbur, who turned the first earth. He issued a Department Order naming the structure "Hoover Dam." The order was not popular in Imperial Valley.

TO WORK OUT CANAL CONTRACT

October 23 the Board directed Attorney Childers to confer with officials of the Coachella Valley County Water District and start working up a contract with the United States for the construction of the All-American canal as provided in the Boulder Canyon Project Act. The assumption was that all the lands irrigable were to be treated as one district.

The Board took notice of the report that some employees were taking part in the county political campaign and passed a resolution stating that any employee who did this on District time would be discharged.

On November 18, members of the City Council of the City of San Diego and their Engineer appeared before the Board to request co-operation in the matter of obtaining 155 second feet of water from the Colorado river for domestic purposes. A resolution was passed extending the co-operation desired. If San Diego sees it a better advantage to take water from the district's canals rather than through the Metropolitan District it may do so on a rental basis or otherwise.



This Electric Hoist and Cable from the California to the Arizona Shore handles the Weir Building without the Necessity of Trestles.

F. W. Greer, publicist for the district, placed his resignation with the Board December 3, to take effect December 25, 1930. It was accepted.

The Board voted to continue to support the Boulder Dam Association for another year, provided other interested districts did likewise.

The State of Arizona filed a suit in the United States Supreme Court against Secretary Wilbur and the States of California, Wyoming, Utah, Nevada, and Colorado attacking the validity of the Boulder Canyon Project Act and the Colorado River Compact. The district requested Attorney General Webb to appoint Attorney Chas. L. Childers State Counsel for California.

1931

In issuing the call for the 1931 election the Board decided to submit to the electors an opportunity to cast a straw vote on the proposal for a bond issue to carry on and extend the drainage system.

Note was taken of the death of the son of Secretary F. H. McIver and resolutions of sympathy were passed.

The Board took notice of the applications made by the Metropolitan Water District and others for applications to divert water from the Colorado river that seemed to be in conflict with the interests of the district and ordered

protests filed with the State Division of Water Resources. In addition the district caused to be introduced a resolution in the State Legislature to protect the Valley's interests. The resolution was passed.

The February election resulted in the return of Ira Aten to the Board and the election of W. F. Beal as Director from the Brawley Division. Vinnie Barry was elected Assessor-Collector and F. H. McIver Treasurer. Director Brockman was named President of the Board for the ensuing year.

Director Beal suggested that a committee of twenty-five citizens be named by the County Board of Supervisors, the District and the Chambers of Commerce for the purpose of surveying valuations placed on property by the District for assessment purposes. The Board decided later to ask fifteen citizens to serve, five to be appointed by the District, five by the Farm Bureau and five by Chambers of Commerce. The Citizens Committee consisted of: James Brock, W. H. Brooks, D. W. Wiest, Wm. Lowther, Dave Vencil, Scott B. Foulds, Earl Northrup, C. O. Hoober, Wm. Wilkinson, W. A. McFadden, Joe Enz, Eugene Anderson, W. S. Fawcett, J. L. Taecker and W. J. Gregg.

Airplane View of Hanlon Heading. 1—Rockwood Gate. 2—Main Canal. 3—Colorado River. 4—On Arizona Side. 5—District Offices and Homes of Employees at Andrade. Algodones, on the Mexican side is just out of the Picture.

The Board passed a resolution against the State continuing the Colorado River Commission or appointing a new one.

The Board dispensed with the services of Attorney Harry Slattery, Washington legal representative.

The Board adopted a resolution favoring the enactment of an amendment to the State law limiting the voting privilege in Irrigation District bond elections to owners of real property. Directors Aten, Brockman and Beal favored the resolution. Blair reserved his vote. Director Rose was not present by reason of undergoing an operation in a hospital. Director Blair later changed his vote to favor the proposed amendment. The final decision was to oppose the amendment because it was unconstitutional, and the Legislative Committee killed the bill.

The Valley now has before it the proposed contract between the District and the Department of the Interior for the construction of the All-American canal by the government. The contract will be passed upon by the people at the polls at an early date. The contract is forming a new line of division of the people.

The Board voted to reserve oil, gas and mineral rights in all deeds for sale of property owned by the district.

The Citizens' Committee on valuations recommended that a board of six appraisers be appointed to use the District's assessment rolls as a basis and make an equalized appraisal of property to correct some apparent inequalities; that no land be assessed for more than $150 an acre and none for less than $40 an acre. The Board referred the matter to its attorney for opinion.

SUPREME COURT UPHOLDS BOULDER PROJECT

May 16, 1931, the United States Supreme Court decided against Arizona in the suit seeking a Federal injunction against building the Boulder dam. The decision cleared the field of all opposition and work on the project can proceed without delay.

CHAPTER XXXIII

THE IMPERIAL VALLEY OF TODAY

THROUGH the pages that precede this chapter we have set down the activities of the men and women who settled on and improved the farms, built the towns, formed their organizations for the pursuit of business and pleasure and carried on the multitude of activities for the first thirty years of Imperial Valley's existence.

Now we may glance at their handiwork.

What have they wrought?

What is here to show for the years of labor that these pioneers and their successors put on the land?

For one thing Imperial Valley has produced a breed of men and women who have learned the need for combat, for unending vigil against the forces of nature which would wipe them from the face of the earth should they relax for even a short time. In some parts of the earth life is easy to maintain. The South Sea Islanders, for instance, merely pluck the fruit that grows without planting and catch enough fish in an hour to supply the demands of the stomach for a week. It takes little exercise of the imagination to guess what would happen to the people of Imperial Valley if, for instance, they should neglect their water supply, fail to irrigate their fields or allow the Colorado river to flood them out of house and home. The land would return to desert within half a year.

This training in mortal combat with the forces of nature has made the people an agressive people. The salubrious climate is not the South Sea Island sort that encourages banjo picking but the kind that will wither the succulent alfalfa in the stalk unless it gets water at the right time—and that might mean 3 a. m. It is the sort of a climate that brings up money by the millions through the melon fields—provided some one has been diligent with the tractor, the planter and the cultivator.

The general result of this sort of combat, over a period of less than a third of a century, has been the production of a region which has reached a point of development, commercially as well as socially, never before reached by any agricultural district in the world in the same length of time.

Today there are approximately 5000 farms in Imperial Valley on which half the population or 30,000 people, live. The other 30,000 live in the six incorporated towns and trade centers. Of the 5000 farm families 2000 are owners of the places where they live. The remainder, or 3000 families, are renters. The average size of a farm is 88 acres.

It is wholly unnecessary to state that agriculture is the basis of all property wealth and income in Imperial Valley. The world's record for advancement was made with the crops that came out of the soil. Almost with the alchemy of magicians have the people mixed the sands of the desert with the waters of the Colorado, exposed the mixture to the warm rays of the sun and have produced schools, churches, homes, places of business, paved roads, automobiles, airplanes, the necessities of life and many of the luxuries. They present to the world today an array of high and elementary schools second to none in the progressive west. They point with pride to the statistics that show the steady increase in values from the day when zero marked the worth of the Valley until now when $150,000,000 will not cover the value of property and one year's crops. Out of the soil they send to market annually more than 60,000 carloads of products—better than a car for every inhabitant—valued at upwards of $60,000,000. They will show you how the Valley has climbed to the upper tier of dairy producing counties of the state; how it stands at the very top in melon and lettuce shipments—a national supremacy; how they have demonstrated to the world that nearly every useful crop can be grown and in so doing have chosen those best suited for the markets for cultivation on a vast scale. They will also tell you, without the slightest trace of anxiety in their faces, that with the Hoover Dam holding in leash the waters of the Colorado as it will within a very short time, danger and damage from shortage of water or from floods will be forever past. They will not dwell much on the fact that this danger has been hanging over their heads since George Chaffey first ran water in the main canal thirty years ago and that through all these years they have built and built and built under this ever present threat. They just show a grim satisfaction in the outcome as it presents itself in 1931 and look forward eight or ten years to the time when the dam will be in operation.

And then the fact that agriculture is the basic foundation for all this present day high state of development becomes more apparent when it is stated that the people themselves have spent more than $23,000,000 in the acquisition and improvement of their water distributing system through the Imperial Irrigation District. They also have instituted their own county and city governments and, as the saying is, are "all set" for a bigger and better Valley than ever; for a doubling of the population and a trebling of land values as the call of the land reaches the city-bound citizen on the rebound from depression.

Speaking of "depression" the Imperial Valley citizen is rightfully proud of the fact that for more than two years the maps issued monthly by the United States Chamber of Commerce and other agencies have, without a break, shown Imperial Valley to be a "white spot" which indicates good business conditions. The white spot map for June, 1931, shows the Valley one of only five such spots in the United States. It appears that the Valley's food stuffs reach hungry mouths whether there is a depression or not. And in spite of the low prices for commodities that have prevailed the cash received has been enough to keep the "white spot" going on the maps. Every community has its ups and downs but with its eggs in so many different baskets the Valley never suffers from its "downs" any longer than it takes to plant and harvest again.

THE ACREAGE TABLE

This history presents a table herewith showing the acreage planted to some sixty-two different crops during the past seven years, from 1924 to 1930. This shows the reader the trend of popularity that various crops enjoy with the farmer. Trace cotton, for instance—it has dropped from 79,801 acres in 1924 to 10,317 in 1930. This year practically no cotton will be raised north of the line. Alfalfa, the base of all livestock activity, has almost doubled in that same time. Cantaloupes have increased while lettuce has doubled in seven years. Peas show almost 400 per cent increase. Carrots have jumped suddenly into popularity while the smaller truck crops show that the big vegetable growers are carrying on acreage experiments in every direction. The old standbys—milo maize, barley, oats and wheat—maintain their standing year after year. The plantings of grape-

(Continued on Page 373)

CROP ACREAGE FOR SEVEN YEARS

Showing the trend of agriculture from 1924 Until 1930.

The large totals indicate much land is double cropped each year.

CROP	1924	1925	1926	1927	1928	1929	1930
Cantaloupes	27,168	25,109	33,186	36,121	27,284	36,352	39,029
Lettuce	25,125	34,593	42,674	40,674	31,270	46,384	53,911
Peas	4,182	219	219	6,432	16,152	13,433	18,502
Watermelons	3,695	6,132	2,397	6,122	6,207	7,087	8,311
Beans	282	361	234	234	482	413	109
Beets	50	.....	.....	.....	84	166	24
Cabbage	286	.....	228	228	331	516	890
Carrots	79	.....	140	156	1,485	1,766	5,143
Cucumbers	139	219	219	229	547	757	428
Endives	22	.....	.....	.....	.....	105	76
Onions	133	90	26	118	148	79	34
Peppers	33	.....	120	120	198	133	72
Spinach	50	.....	365	365	768	505	253
Squash	51	.....	163	163	219	555	653
Sweet Potatoes	130	.....	150	99	218	124	169
Tomatoes	858	1,164	397	2,368	1,702	1,202	2,321
Misc. Vegetables	81	1,007	182	182	111	215	82
Honeydews	1,725	2,435	3,150	4,741	3,338	2,809	4,674
Honeyballs	670	840	1,100	1,427	2,347	1,846	2,873
Turnips	.....	.....	.....	.....	66	60	115
Potatoes	.....	.....	.....	.....	18	.....	.....
Anise	.....	.....	.....	.....	306	316	50
Chicory	.....	.....	.....	.....	218	138	145
Casabas	.....	.....	.....	.....	107	77	45
Dandelion	.....	.....	.....	.....	20	.....	.....
Cauliflower	.....	.....	.....	.....	15	.....	.....
Broccoli	.....	.....	.....	.....	189	198	64
Peanuts	.....	.....	.....	.....	80	.....	.....
Jap Melons	.....	.....	.....	.....	.....	20	20
Greens	.....	.....	.....	.....	.....	20	220
Alfalfa	130,196	155,080	168,672	178,210	228,675	245,775	238,571
Barley	45,710	45,573	47,022	47,022	56,840	60,853	50,282
Milo Maize	25,300	27,012	25,855	34,105	40,126	29,251	25,482
Cotton	79,801	47,253	23,693	23,102	29,241	20,431	10,317
Oats	1,247	1,206	604	604	1,731	2,209	977
Wheat	2,834	6,297	4,082	4,082	10,317	10,949	11,205
Cover Crop	751	.....	.....	127	.....	.....	.....
Bermuda	7,325	6,471	9,506	13,519	20,994	19,255	15,321
Rice	.....	.....	187	4,455	883	.....	169
Cane	.....	.....	194	770	1,167	2,010	1,410
Sudan	235	.....	.....	249	1,256	2,691	5,534
Rye	.....	.....	.....	.....	120	.....	.....
Hemp	.....	.....	.....	.....	328	1,014	21,501
Miscellaneous	.....	.....	.....	.....	59	344	150
Asparagus	1,548	1,830	2,408	2,638	2,580	3,150	3,402
Apricots	34	80	37	.....	50	69	55
Dates	329	178	175	198	174	209	216
Figs	35	50	40	.....	58	63	31
Grapes	6,942	6,323	5,150	5,598	4,797	3,496	2,963
Grapefruit	4,019	5,158	6,131	7,342	8,763	9,622	10,175
Olives	79	81	91	.....	58	71	58
Oranges	72	18	99	.....	196	236	702
Pears	70	33	58	.....	24	17	17
Pomegranate	86	71	65	.....	86	55	112
Pecans	5	33	30	.....	137	207	346
Strawberries	388	233	129	204	132	153	100
Miscellaneous	100	57	79	499	82	114	28
Tangerines	.....	.....	.....	2	121	163	221
Plums	.....	.....	.....	.....	22	24	17
Nursery	.....	.....	.....	.....	30	41	63
Lemons	.....	.....	.....	.....	.....	12	87
Avocados	.....	.....	.....	.....	.....	10	10
TOTAL	364,597	380,611	387,347	419,300	624,473	674,843	725,548

(Continued From Page 371)

fruit have doubled. Pecans show a great increase. Deciduous fruits have not been found profitable. Experiments with avocados are being watched with interest.

A REAL COUNTY SERVICE

In the office of the Imperial County Agricultural Commissioner the growers of Imperial Valley enjoy a service that is real. Under the direction of B. A. Harrigan, commissioner for several years, scientific studies for the benefit of the grower and marketer, have been constantly carried on until now hardly a question can be asked that cannot be answered by Mr. Harrigan or one of his assistants. Mr. Harrigan is also secretary of the Imperial County Board of Trade, a commission that handles publicity and promotion matters. Mr. Harrigan has written many articles along agricultural lines for booklets and folders published by the county. This history is indebted especially to Mr. Harrigan for facts and figures that are used. A review of the more important crops grown in the Valley follows.

ALFALFA

By GEORGE L. WINRIGHT, *Assistant County Agent*

The importance of alfalfa in the Imperial Valley is shown clearly by statistics giving the acreage at 194,915 acres out of a total of 453,209 acres in all field crops combined and 153,954 acres in all garden crops in 1929.

There are many reasons why alfalfa should occupy this most important place in Imperial Valley agriculture as indeed there are reasons why it occupies an important place in the agriculture of any community where it can be grown "successfully" and a few comparisons between production records and market possibilities in districts where it is considered a very successful crop may be of interest both to those who are fortunate enough to be getting the returns common to growers in the Imperial Valley and to others who may have only a general interest in this district.

Farm practices over a long period of years have established the fact beyond a doubt that communities in many sections of the middle west are justified in considering alfalfa as the corner stone of agriculture in their districts and this on an average yield of between two and one-half and three tons per acre as compared to five or five and one-half tons in the Imperial Valley.

The comparison does not end with yield alone and contrary to the usual result of low prices where production of any farm commodity is high and high prices where the production is low the situation is reversed in Imperial Valley to a very large extent. Of course there are years when the price is low enough to be discouraging in any district but there are also many factors which help to make these periods further apart and less pronounced when they do appear in the Imperial Valley. The principal reason is the large amount of dairying carried on in the Valley which takes not only a large amount of hay but a great portion of the alfalfa acreage is used for pasture where the practice is common the year around. Alfalfa hay shows 51.6 per cent of digestible nutriments and a digestible crude protein content of 10.6 per cent, making it one of the highest analizing roughages and without question the most palatable which it is possible to secure.

The effect of this great supply of cheap roughage is reflected in the dairy industry of the valley which supports a greater dairy cow population, figured on the basis of actual crop acreage than any district in the United States not importing roughage. There are several dairies in the Valley which support a herd of one cow per acre without purchasing feed and do this almost entirely by the use of alfalfa both for hay and pasture. The use of concentrates with high producing cows has been established for many years as a paying farm practice but this does not detract from the value of alfalfa and the Valley contains many dairymen who have made a success in the business with the use of alfalfa alone. The cost of producing butterfat is naturally reflected in favor of Imperial Valley as compared to other districts where feed conditions are less favorable. Cost of production studies in the county show that butterfat can be produced for less than 40 cents per pound as contrasted with conditions in the metropolitan areas near large cities where dairymen insist they can not make a profit selling whole milk on the basis of 90c per pound for the butterfat content.

While the local consumption of alfalfa is extremely large in the Valley there is also a large surplus and as production under irrigation in this section is not only heavy but is also much more uniform from year to year than can be expected in districts which depend upon rainfall this surplus would naturally depress the value for market hay in most years if it were not for the fact that this district is so favorably located with the regard to metropolitan areas from 150 to 200 miles distant which must import hay in great quantities.

This is an advantage which alfalfa producers do not have in sections which are far removed from market centers and is reflected in price as a comparison of sales of from $20.00 to $25.00 per ton on the ranch in Imperial Valley during the present winter, 1929, with prices of $10.00 to $12.00 per ton on farms in other sections of the country five to seven hundred miles removed from the market.

The return per acre from alfalfa land can be figured quite readily and a comparison of values formed between Imperial Valley with a five ton yield at $20.00 or $100.00 per acre and three tons at $12.00 or $36.00 per acre in a general farming section several hundred miles further removed from market.

The abundance of alfalfa grown in the Valley affects the beef cattle and sheep industry just as favorably as the dairy industry and the statistics for 1929 compiled by Mr. B. A. Harrigan, Imperial County Agricultural Commissioner, shows 40,316 head of beef cattle with a value of $4,223,180 which were fed out during the year.

A saving of 138 pounds of concentrate per 100 pounds gain due to the use of a good legume hay is sufficient to account for the difference between success and failure when beef prices are unfavorably compared to grain and accounts to a large extent for the magnitude of the beef feeding business in Imperial Valley.

In addition to the beef cattle industry the statistics for 1929 show 74,084 sheep of which all were fed out but approximately 8000 and as a good roughage is even more important in sheep feeding than in beef feeding the advantage of the sheep feeder in Imperial Valley is evident.

DAIRYING

By WALTER B. HAVEKORST

Here we are in a favored spot in Southern California with our dairy cows feeding on green pasture and in the midst of approximately 195,000 acres of alfalfa, growing the year around, which furnishes an abundance of hay and pasture for our livestock, there being a surplus which goes to outside markets.

CLIMATE IS RIGHT

The climate in Imperial County is exactly suited to dairying because of its continual sunshine and the absence of cold or rainy weather, which provides a certain immunity to diseases. Dairy herds here have an uninterrupted pasturing season that extends throughout the year. Stability of water supply and moderate weather means green feed all the time.

OPERATING COSTS ARE LOW

Every dairyman knows what plenty of green pasture and alfalfa hay means to production and health of his herds. No other plant has the milk-producing qualities of alfalfa, and since the supply is available at all times of the year, the feeding costs that are elsewhere increased during the winter months are here reduced to a minimum, while production continues strong all year.

Sudan grass is another forage crop popularly used in Imperial County. It grows rapidly in summer and when

Imperial Valley Dairy Herds such as this Produce 6,000,000 Pounds of Butter Each Year

fed with alfalfa makes an excellent dairy ration. Barley, wheat and oats are grown and fed as supplementary feeds. Lodina clover is also developing into a favorable prospect.

A further consideration that makes possible lower operating costs is the fact that heavy building investment is not necessary both from the standpoint of comfort to cattle and for storing hay.

TRANSPORTATION FACILITIES GOOD

Imperial county is a flat country with good rural roads and miles of paved highways that connect each 160 acre tract of ranch land with the numerous cities and towns. Railroad connections with Los Angeles, Riverside, San Bernardino, San Diego and other markets are direct and competent to handle our products efficiently. Trucking between cities of the county and coastal cities is an important transportation facility that is made possible by the paved highways that extend out of the county to these points.

MARKETS ARE ASSURED

There are now in Imperial County approximately 24000 dairy cows, producing nearly 6,000,000 pounds of butter fat annually. The cost of producing this butterfat is 34.5 cents per pound, cost accounts kept by prominent dairymen show. The price received for the butterfat last year, 1929, averaged 48.82 cents per pound. The skimmed milk was left on the ranch for young pigs. The profit was obvious. These prices were f.o.b. ranch as the marketing agencies gather the dairy products from the door of the dairyman by truck.

The market for Imperial County dairy products has been developed to a point where there is a steadily increasing demand that will warrant more dairy herds and more dairymen without reducing the profit to be expected. There exists a prosperous and successful dairymen's marketing association affiliated with a large marketing association on the Pacific Coast. We have also represented large creameries.

The Los Angeles metropolitan area is 200 miles distant from the Valley and has a population of 2,000,000 people and an expected growth in the next decade that will double and treble that figure. San Diego is a little more than 100 miles distant and is a rapidly growing city that is taking more and more Imperial County dairy products.

DAIRYMEN PROTECTED HERE

Imperial County is keenly alive to the value of its dairying industry and is unusually active in encouraging dairymen to keep their herds free from disease and to aid them in improving their stock.

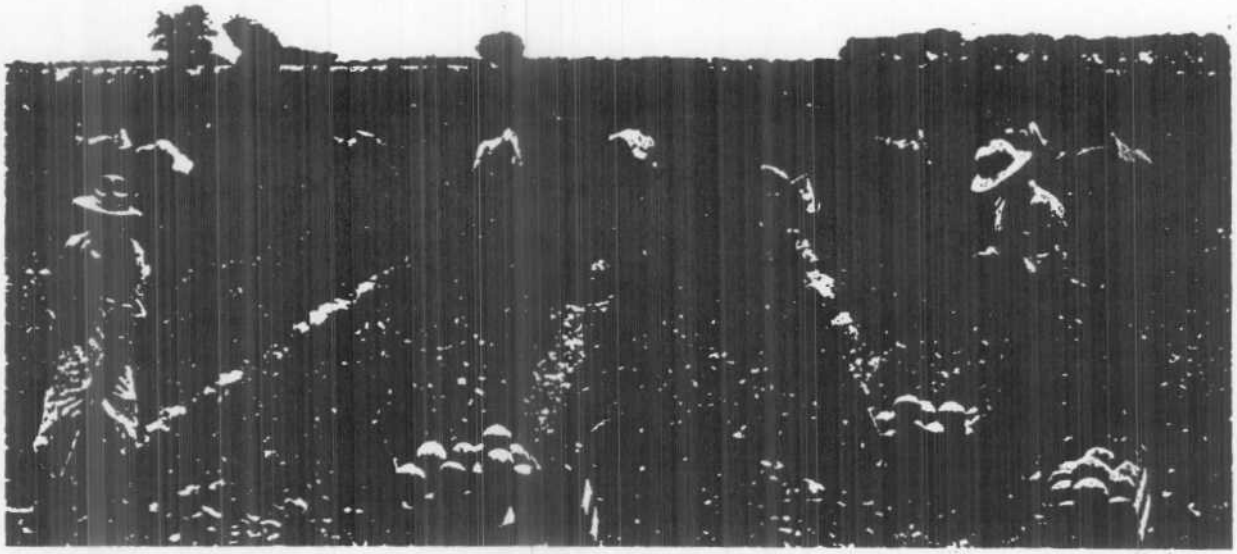
The Farm Bureau and the Agricultural Extension Service of the State College of Agriculture devote large attention to the problems of dairying. Cost account are kept wherever possible. Measures looking toward elimination of and protection from diseaases in dairy herds are enforced. It is significant that when the foot and mouth disease was raging among herds in other sections of the country a few years ago, this section remained free from the disease.

Another source of profit for dairymen is the raising and developing of their young stock for coast market, sales of cows in truckloads or carload lots at $175.00 per head not being uncommon. Many are looking to Imperial Valley as the future developing place for dairy cows in wholesale lots for the Pacific Coast markets. This industry in itself can be made very profitable.

COW TESTING ASSOCIATION

Imperial County has an active dairy department of the Farm Bureau which cooperates with the Agricultural Extension Department in operating a cow-testing association which tests 3,000 cows each month. This association furnishes its members with a record of production of each cow which they are milking. These records enable members of the association to find out which of their cows are profitable and which are unprofitable. Through the use of these records many dairymen have been able to greatly increase the average production of their cows in the herds and thus increase the income of the dairy.

The county records show that there are now 733 dairy-



Cantaloupe Picking. The Annual Cantaloupe Crop Fills From 16,000 to 21,000 Railroad Cars

men operating in the county. About 34 per cent of them own their own ranches, the others operating by leases. which usually run from three to five years.

Land prices in this county are very reasonable. Alfalfa land suitable for dairying can be purchased at prices ranging from $150 to $300 per acre, depending upon the soil, location, and improvements, or the same land can be rented from $25 to $30 per acre for dairying purposes. Any dairyman who plans to change his location or to start in the dairying business would do well to consider the advantages which Imperial County offer him.

HOGS

Hogs just naturally grow and fatten in Imperial Valley. Cholera and other hog diseases are noticeably absent as the result of careful sanitation and quarantine. Milo maize and barley are used for finishing. Some dairymen who separate find it possible to make their skim milk alone from a string or in other words 30 cows pay them a net above all costs of approximately $100 per month.

The irrigation costs are relatively low in the county, there being an irrigation assessment of $5 per $100 valuation. The maximum assessed valuation per acre for ranch land is $150. The only other charge for water is a gate service charge of 25 cents per day during the period of irrigation.

The following reputable and successful dairymen in the county will be glad to give information to interested prospective dairy operators here:

H. G. Farnsworth, Route 1, El Centro.
Walter B. Havekorst, Bank of America, Brawley.
Loveland Rancho, Brawley.
Joe Enz, Holtville.
F. L. Rosenbaum, Imperial.

CANTALOUPES

By B. A. HARRIGAN, *Agricultural Commissioner*

Imperial Valley, for several years has been the leading cantaloupe producing region of the United States. Beginning as an early cantaloupe section over twenty-five years ago, the Valley now ships cantaloupes and related melons from April well through August. After this the fall crop begins in late September and runs well up into December. The fall crop is planted in July and the early spring crop goes in as early as late November, so that we have growing melon vines the year round. The steady growth of the cantaloupe industry in the Valley in spite of troubles and worries of all kinds is really remarkable and can only be attributed to quality production dependent on soil and climate aided by high class methods of growing, harvesting and shipping under careful supervision to maintain a high standard of uniformity.

The cantaloupe industry in the Valley got its start from successful trials of a few acres in the Coachella Valley in 1903. The extension of the industry in the upper end of the Salton basin in 1904 was followed by severe aphis damage. However, several farmers near Brawley had become interested and tried small patches of melons. These Imperial Valley trials were a success. The growers found their melons to be of high quality—superior even to the Coachella Valley product.

In 1905, the Brawley district planted about 600 acres which, with the addition of the few acres in Coachella Valley, produced 297 carloads. The year 1906 saw a doubled acreage and a production of 577 carloads including a few shipments from the upper basin section. The following year, 1907, showed the effects of the lack of a Boulder Dam by not having the usual increase in acreage. In this season the crop amounted to 644 cars including the diminishing shipments from Coachella Valley.

The high quality of the melons shipped to eastern markets in 1907 showed that experience gained in the few years before was counting in the growing, packing and shipping operations. The fabulous prices and eager demand for these good melons while giving undreamed of returns to the few lucky growers that season set up a get-rich-quick cantaloupe rush on the part of everyone. The Valley was at that time advertising for an increased flow of new settlers, and the marvelous wealth to be had from cantaloupes was used as one of the attractions. Any one could grow cantaloupes successfully on any kind of land—no one ever heard of overproduction and prorating cars. Money was available to any prospective grower of melons. Boom times affect bankers, merchants, and commission men alike.

Ten thousand acres approximately were planted to cantaloupes and nearly every acre yielded a bumper crop. The Valley was full of melons. Market connections had been established with only a few of the large cities in the east, high prices were only paid by the limited well-to-do classes for quality products. Inexperienced growers with their more inexperienced helpers shipped green soft, ripe and

Milo Maize Has Been a Staple Product Since 1902

worthless melons with the good ones. The 1908 deal was so unsuccessful that many growers quit in disgust before the season was half over, leaving most of the melons in the fields; having shipped only 1804 carloads.

We learn by our disasters. The "get-rich-quicks" and "fly-by-nights" moved on to other and brighter fields and left the cantaloupe industry in the hands of the pioneer growers who with other responsible and experienced farmers with a broad vision of the future of the industry proceeded cautiously for the next two years. A total of 1317 carloads were shipped in 1909 by these conservative growers who specialized on quality and better pack although the prices were low. The next year we shipped 1525 carloads at very high prices to match the increasing quality and developing demand. We learn by our disasters, but prosperity brings forgetfulness. The very successful season of 1910 caused another "gold rush" to the cantaloupe fields in 1911 and with a doubled acreage prices fell until the glutted markets failed to return even the transportation charges. The 2564 carloads shipped in 1911 failed to pay back the expense of growing and shipping.

These repeated calamities called for co-operative action, so in the spring of 1912 the growers and shippers organized an exchange to better control the distribution and extend shipments to new markets. Under this system the season of 1912, with 2818 cars, and that of 1913, with 3434 carloads, gave profitable returns. Beginning with 1914, the Federal Bureau of Markets has aided the shippers in marketing the cantaloupe crop by furnishing details of market conditions, prices, etc. On 1914, financial depression affected the market advisely and, in spite of the Bureau of Market's aid, the 4407 carloads moved scarcely paid expenses.

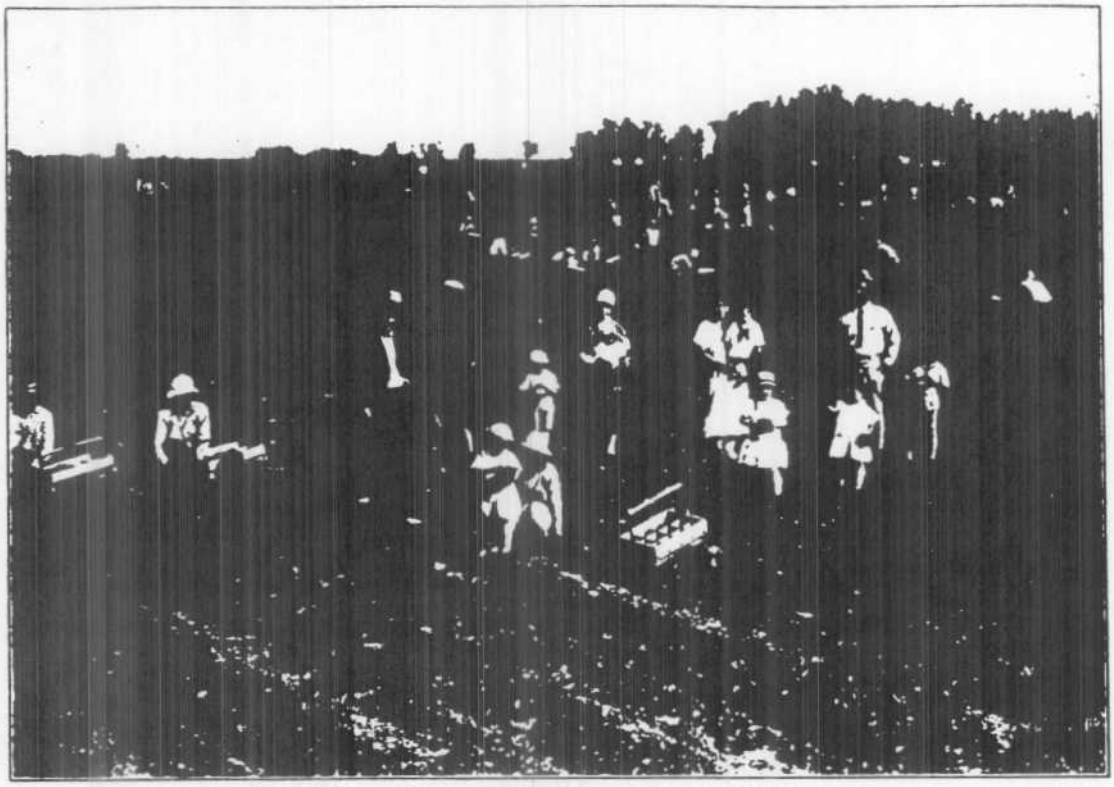
Since 1915 we have records of the accurate surveys as to acreage and production which are summarized in the following table:

Year	Total Acres Planted	Total Shipments in Carloads
1915	8156	4666
1916	8490	4594
1917	12701	4988
1918	11136	4428
1919	14088	7858
1920	21697	8938
1921	22652	10696
1922	31050	12159
1923	25620	12567
1924	27168	15950
1925	25109	14509
1926	33142	14151
1927	36121	17919
1928	27823	18393
1929	36352	20024
1930	39029	.....

During the years of steady growth from 1914 on, the average price per crate has been enough in nearly every season to yield the growers some profit. The cantaloupe industry has been growing steadily as a whole in spite of mildew and overproduction. If we could only control the acreage planted each season we could guarantee more uniformly profitable seasons.

The striking change in methods of growing, packing and shipping, and the complete change in varieties in the last 25 years makes our modern cantaloupe industry an entirely different business from the old unorganized venture. Our packing sheds look like factories, and our field organizations are systematized like a military unit. The fields are planted early in the winter and protected with glassine paper covers and often with long wind breaks of tough wrapping paper held in place by rows of stakes and arrowweed brush. Stimulating applications of special fertilizers are used and elaborate provisions made to fight pests and diseases. Extensive tests of varieties and careful selection of seed stocks is part of the routine now. Few business enterprises have more carefully planned campaigns against possible trouble. Just one thing we cannot plan against apparently—and that is overproduction. With all the above improvements in methods, and with the great increase in rental values of land and in labor, material and transportation prices it must be realized that high prices must be obtained to net a fair profit. The industry has grown steadily, so it is natural to assume that it has been a paying business.

The first ten years of the cantaloupe industry were largely in the hands o fthe American farmers who had built the industry in other sections. However, the uncertain profit coupled with the increasing cost of material, labor, etc. just about drove these pioneers out of the game—by 1914—after which time the Japanese farmers dominated the field and improved methods by introducing the covering and brushing systems. In recent years, American manufacturing methods applied to the cantaloupe fields and sheds, together with the action of alien leasehold legislation, have again made the cantaloupe industry largely American. Re-



Picking Winter Strawberries in Imperial Valley

gardless of who grows our cantaloupes, what varieties we grow, or how we grow them, we know that each year finds us better equipped to put better cantaloupes on the table of the American consumer. Better methods of growing, better cultivation, better varieties, better harvesting and packing, better grading and inspection, better icing, and quicker and better shipping, all combine to put a better melon on the market.

Cantaloupes, honey dew and honey ball melons from Imperial Valley are now the standard of value for other regions. When we hear someone say that his melons are as good as Imperial Valley melons we feel proud of our reputation but we still plan an aggressive campaign to keep our product the best.

LETTUCE

Lettuce raising took on the importance of a major industry in 1916 when sixteen cars were shipped to market. Since then the acreage has annually increased until at the present time around 50,000 acres are annually devoted to this winter crop and carload shipments have passed the 20,000 mark.

The rapid increase in the use of Imperial Valley lettuce throughout the nation is attributed to the close co-operation of the growers in the matter of grading for excellence. The crisp heads that reach the packing sheds from the fields are sorted so carefully that many times the cull pile exceeds the packed product.

In the early history of lettuce raising there was no law governing or standardizing the packing of lettuce. At one time, twenty-five different sizes of lettuce containers were used in packing, offering eight or nine dozen heads of lettuce in a container and marked three dozen. The situation finally became so aggravated that the buyers in the East were afraid to buy a car of lettuce from California until they had seen it, so it became necessary to have lettuce included in the present Standardization Law in order to give the consuming public some protection. It was, also, necessary to establish a reputation for Valley lettuce if we hoped to continue to raise it profitably.

During the last six years the Standardization Law in regard to lettuce has been very rigidly enforced. At the present time when a car is quoted out by wire the trade in the East has a great deal of confidence in what the wire states that car to be. Thirty per cent of the lettuce of the Valley, during the last shipping season, was sold by wire sales. If one were to look over the market news reports for the last shipping season one would find that six dozen size lettuce from Imperial Valley brought one dollar more on the market than four dozen size packed in Arizona where there are no standardization laws.

Imperial Valley head lettuce is the best head lettuce grown in the United States. This is proven by the premium it commands in every market where it is sold. It matures at a time when practically all other vegetable growing localities are dormant, beginning about December 1 and continuing until April 1.

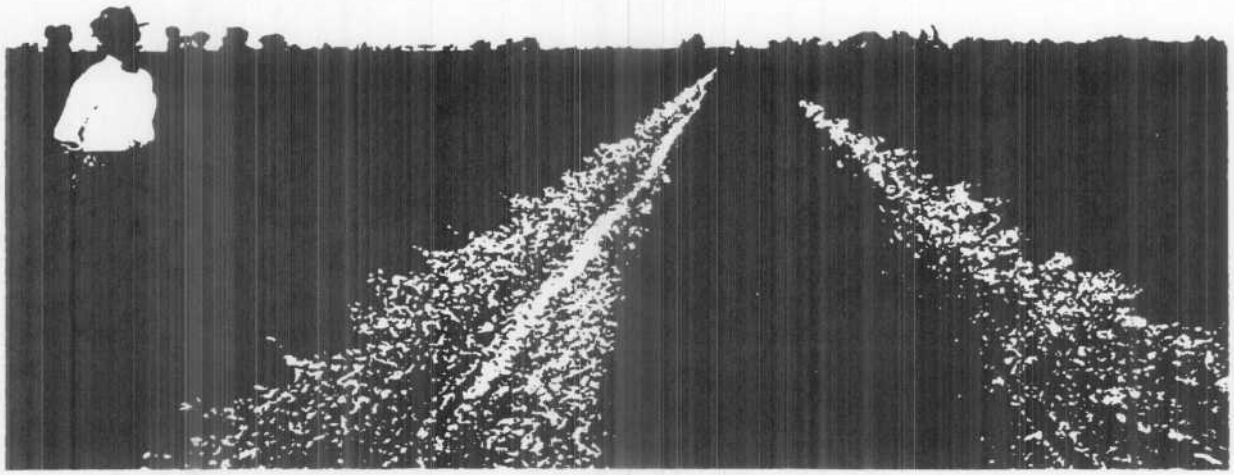
Lettuce planting, harvesting and shipping comes during the fall and winter months. Handling the vast crop has become almost an exact science. The product is so delicate that it must be picked at exactly the right time and must be on its way to market properly iced within a few hours. The great packing sheds present feverish scenes of activity, day and night. Railroad and icing facilities are taxed to keep pace with the output that streams out of the Valley in trainload lots daily.

As an advertisement for Imperial Valley the lettuce crop has done as much as any other crop produced.

GRAPE GROWING

By B. A. Harrigan, *Agriculture Commissioner*

While the great grape growing industry of California is suffering from overproduction, and is being assisted by various forms of federal aid, Imperial Valley during the last few years has set an example in crop reduction worthy of attention. Just a few years ago there were over six thousand acres of table grapes listed in this region. The latest survey shows about 2,000 acres. If the remainder of the state had followed this program of elimination of the poor-



An Asparagus Field on the McPherrin Ranch hat Produced Continuously for More than 20 Years

est vineyards federal aid would not be necessary. There are several reasons for this reduction in acreage in Imperial Valley but the largest reduction has been in taking out the less profitable varieties.

Thompson Seedless and Red Malaga, when properly handled, have produced profits. White Malaga, Black Monuka and Persians have failed to make as high returns on the market, and many large areas have been taken out or worked over with Thompson Seedless or Red Malaga.

Grapes, like most other crops, yield best on certain soil types. Heavy and light soils in Imperial Valley are not segregated into large districts but are mixed in a checkerboard-like pattern all over the Valley. Vineyards have been planted here and there all over the irrigated district. Some were on very heavy land and some ranged through the lighter types down to desert sand. Unless the growers have the ability to adjust their farm practices of culture and irrigation to suit their own conditions they will never succeed as grape growers.

We are finding that it does not pay to grow much over four tons per acre. If an effort is made to secure quantity much above four tons the lateness and poor quality cut down the price so that the net profit disappears.

Imperial Valley Thompson Seedless grapes, properly grown and correctly harvested, have enough sugar and acid to make them both sweet and piquant, enough flavor to give them a charming bouquet, and enough solidity to carry to the most distant market.

Grape growing is not recommended for strangers unfamiliar with the soils of the Valley, and with the successful production of grapes in other regions. The little group of vineyardists who remain and who in a few cases are increasing their acreage have fought the battle now for a quarter century. In this time, they have learned grape growing and vineyard practices that enable them to do well enough to stand by their guns hoping for better times. Men like these are both pioneers and horticulturists; they are experimenters and research experts combined.

ASPARAGUS

By J. B. NORTON, *Plant Breeder*

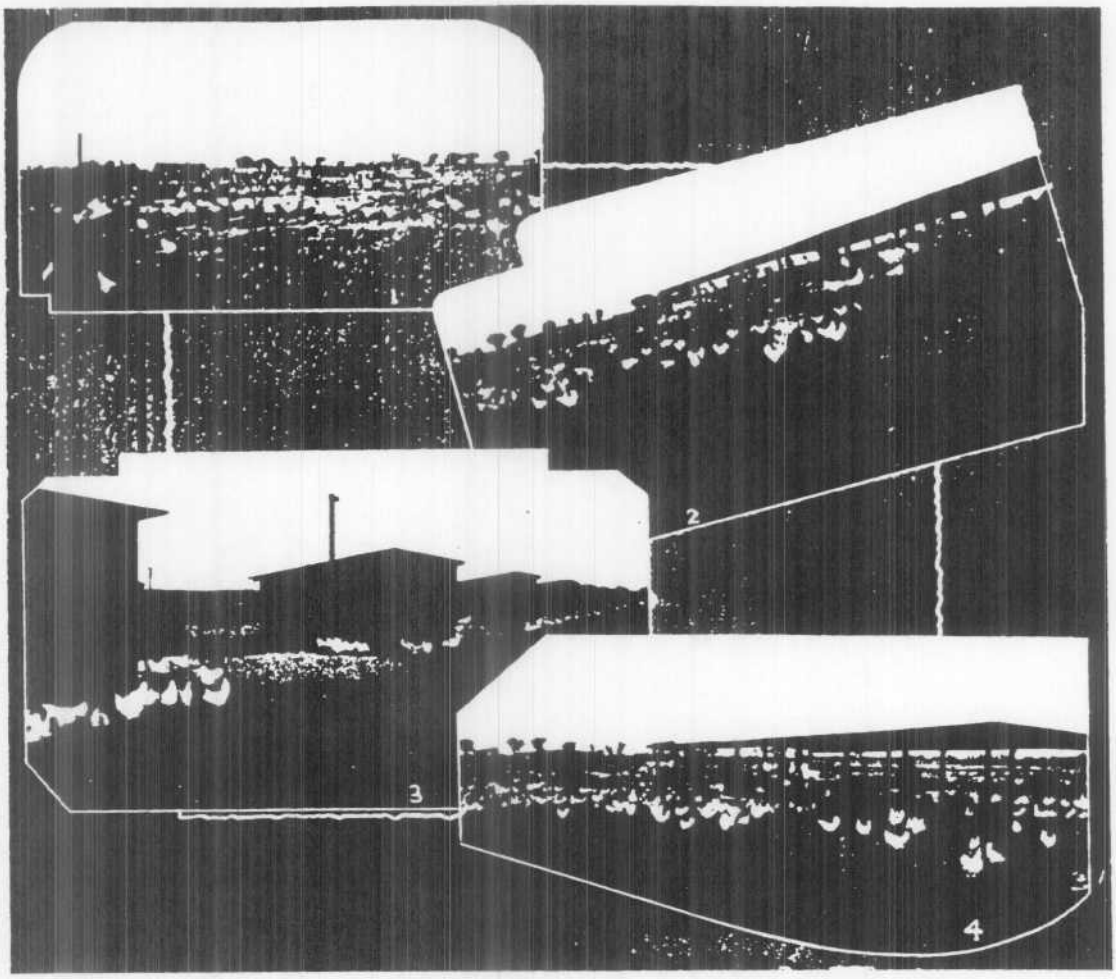
Long before the dawn of modern civilization, asparagus was known as a wonderful health food. In the fertile plains of the Tigris and Euphrates Valleys of southwestern Asia we still find the wild form of this delicious spring vegetable. Nebuchadnezzar undoubtedly used asparagus in his dietary when he lived in the fields and "ate grass like an ox." He certainly recovered his health and came back on the job of running the world. This is a testimonial the like of which few medicines can boast.

Imperial Valley comes nearest duplicating the wonderful soil and climate of the Asiatic home of asparaguss and it is here that the writer expects to see wonderful developments in asparagus culture. The region is as yet completely free from any asparagus pests such as rust, beetles, centipedes, etc. Asparagus was planted 25 years ago among the first permanent crops in the Valley and the acreage has constantly increased until at present we have about 2,500 acres. The original fields, although far past my estimate of profitable production in other regions, still give good returns on the land.

The interesting thing to an asparagus expert is that the new planting of hundreds of acres now going in, is largely being put out by the old growers and their associates. The Valley is finding that it can grow good select seed and in my opinion just as good one year old crowns for new fields as are grown anywhere. In this way we can develop a pest free asparagus region of the first rank. The first large planting of Mary Washington in America was on Tamarack Ranch in the center of Imperial Valley. This variety seems eminently suited to this region because it makes the large sizes demanded by the select trade and on this account is being used exclusively by our best growers. I have found in Imperial Valley packing sheds, shoots that are better in every way than the ones we used to illustrate the articles describing the new variety when it was distributed by the the United States Department of Agriculture.

In the good old days, spring vegetables could be had only in the spring. We went through the winter in a run down condition and had to have vitamins to bring us back to health. Now we keep in health and vigor twelve months in the year with food from the winter garden of America. Asparagus is shipped regularly as a fall crop reaching the East just as their gardens fail with approaching winter weather. Our early spring crop begins to move again in February, the mid-winter month back East. With lettuce, spinach and carrots to tide over the short interval, a constant stream of Imperial Valley sunlight goes to the cloudy and smoke laden cities of the East just when they need it most.

Asparagus likes a deep rich sandy loam and prefers a soil rich in chlorine. Naturally a grass feeder it responds readily to heavy applications of nitrogen, both organic and inorganic. Large amounts of manure heretofore shipped



Poultry Raising in Imperial Valley is a Large and Profitable Business

out of the Valley are being diverted to asparagus fields. Excess of ammonia produces the tender growth in the shoots that makes our asparagus good to eat. Ammonia also keeps it good on the road to the consumer because all of our asparagus is chilled by precoolers before being shipped in refrigerators. It should be kept cold until it goes into the double boiler in the kitchen. Ideal asparagus never wilts before it is cooked and what we try to do is get it to the market in ideal condition. To the consumer, Imperial Valley asparagus brings the world's best tonic food at the time most needed—sunshine food in the cloudy winter days.

ASPARAGUS RECORDS

Geo. V. Rude, ranch manager for the R. D. McPherrin ranch near Imperial, kept records of the shipments and receipts from the 40 acres of asparagus on the place for twenty-one years, from 1907 to 1928. In that period the plot produced 99,305 crates of 24 lbs. each. The receipts amounted to $347,806.50, gross, with freight and commissions paid. Carload shipments started in 1909. The field was worked with the original plantings until recently when encroaching bermuda made it advisable to plow.

POULTRY

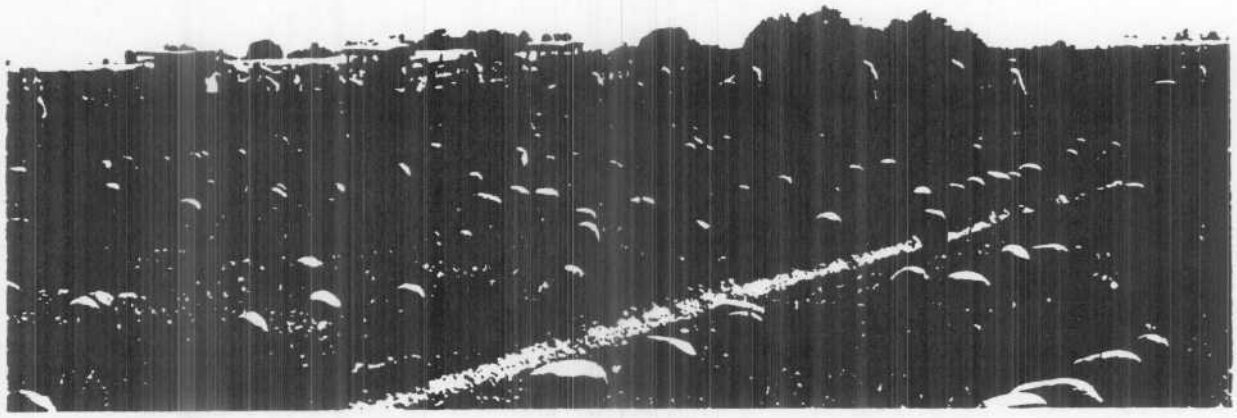
By R. E. Carruthers, *Assistant County Agent*

Quite a change has taken place in Imperial County poultry raising methods. Instead of the little back yard flock it is now a large commercial flock of white leghorns running up to 50,000 under one fence and being managed as a single unit. Perhaps the greater proportion of the county's flocks are now largely found in commercial flocks running into thousands. This condition has made a big improvement in the industry and should do much to establish this Valley as an important factor in brooding and egg production. The record of about six per cent mortality in brooding 73,000 chicks which were started in May and handled in fireless brooders is a record which is seldom approached. This performance may be safely used as a goal at which to aim. If a few skilled operators would attempt the business on this extensive basis there is every reason to believe that excellent results would be secured.

Most of the southwestern valleys are importers of eggs. This condition should not prevail and merely shows the lack of interest taken in this specialized industry. Our natural brooding season commencing in May fits in especially well with market conditions giving to the Valley buyer a splendid chick at the lowest price during the year. The housing requirements are little more than a sun shade and a perch upon which to roost.

One large poultry producer has installed a large refrigeration plant which will enable him to store a large supply of eggs as well as dressed poultry. At the present rate of expansion of the poultry business Imperial Valley should soon be self sufficient in eggs and be looking to several of the nearby valleys as a market for surplus.

The feed situation is most ideal in Imperial Valley for the three grains, barley, milo and wheat, are all produced in excess of local needs, hence they may be purchased at wholesale prices. Grains make up 80% of the poultry ration so the need for outside supplements is only a small item in compounding an excellent feed. Alfalfa is found



Watermelon Picking. The Pickers Toss the Melons from One to the Other Toward the Trucks

to be one of the best ingredients in poultry feeds.

With land values at about $200 per acre generous use may be made of it in ranging poultry which will avoid contamination of soils thus keeping the health of the flock at a high line.

Imperial Valley's fame is spread up and down the coast by hotels and restaurants which annually, around Thanksgiving time and during the winter, feature "Imperial Valley turkey" on their menus. Shipments reach some 25,000 birds each year.

PECANS

Although Imperial Valley ranchers have, heretofore, been inclined to plant and harvest "quick crops" the number who are looking ahead to permanent crops is gradually increasing. The growing of pecans is becoming a matter of interest. Early in 1931 T. J. Tubbs, of Holtville, sold his 30-acre grove for $1200 an acre and that news made a great number of people stop, look and listen to the "pecan talk" that was prevalent at the county fair in February. Pecan growing was discussed in 1902. There is a fine tree 24 years old on the Ferris ranch west of El Centro. It is said they live and produce for a hundred years or more.

The Valley has proved adaptable for pecans.

Six miles east of Calexico, in the Jasper district, are several acreages from three to ten acres each, one year and two years old, owned by H. Hara, A. Kohn, J. F. Fiala.

Howard P. Meyer of El Centro has a grove of 40 acres one mile west and one mile north of Bond's Corner.

There are several small acreages near Meloland.

Around Yuma, in a climate and soil similar to Imperial Valley's there are so many groves that there is a Pecan Growers association.

Loose, sandy soil is best. Medium adobe, with sand underneath, is excellent. The water table should be at least five feet.

The tree has one long tap root. Branch roots are negligible, but in transplanting this tap root must be preserved in its entirety. What it needs is room to grow and the soil in Imperial Valley is practically bottomless.

The other essentials—heat in which the nut matures and water aplenty—are here. No frost ever injures, it is claimed.

The trees are planted 40 to 60 feet apart, 20 to the acre. The cost per acre is stated to run $40 to $100, depending upon variety of tree, which in prices range from $2 to $6.50 each. Some of the varieties are Burkett, Success, Kinkaid, Millican and Mahan.

In 1931, the wholesale price was fifty-six and one-third cents a pound. The best egg-shell pecans retail at 75c to $1.50 a pound, it was added.

Trees that yield six pounds in some Eastern states, yield 100 pounds here it is said.

F. W. Criswell of Somerton, Ariz., received $800 an acre this year for his crop from a 21-acre grove.

The trees come into bearing from five to seven years and often at four, to a small extent.

WATERMELONS

Imperial Valley isn't in Georgia, but it surely does raise watermelons.

Brawley watermelon shipments in 1930 filled 148 railway cars, besides very considerable quantities which went out by truck.

Calipatria sent out 123 cars of watermelons, and 36 cars went out from Fonda.

But Westmorland led the north end in watermelon shipments, with 555 cars out by rail, in addition to the truck shipments.

From which it will be seen that the north end contributes very materially to the total Imperial Valley watermelon totals.

The nearly frostless area about Westmorland is largely responsible for the showing made by that region in production of watermelons, which not only greatly enhance Valley prosperity from the farming standpoint, but are a potent factor in the employment field. Growing of these melons has developed a trade which is among the skilled occupations of the land. Good watermelon "pitchers" are scarce, and those who are adepts at the trade are in strong demand when the season crop is to be moved.

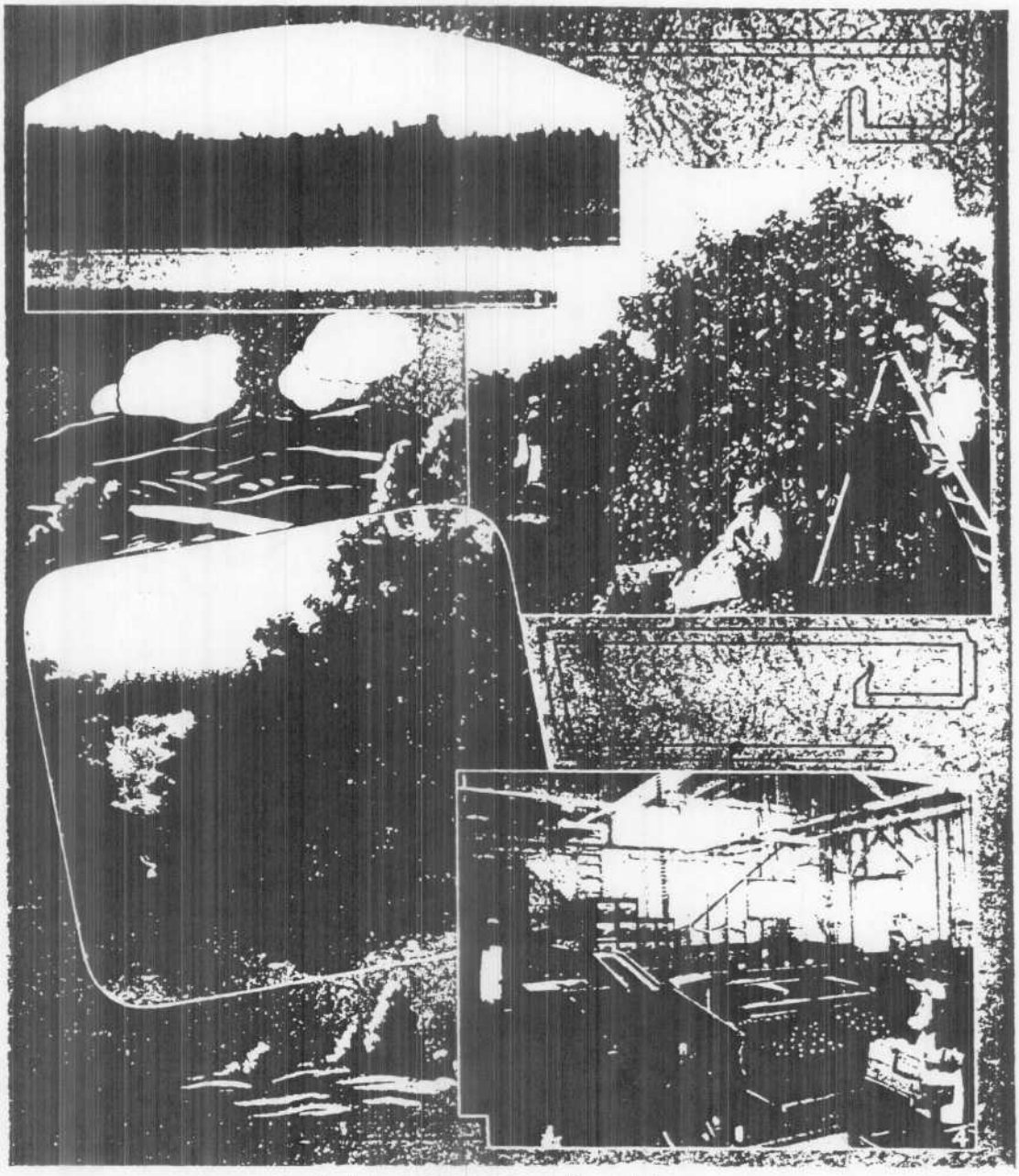
The time honored method of "tunking" to ascertain a melon's degree of ripeness is practicable when one goes out to the patch for a treat, but it is not applicable to commercial harvesting on a large scale.

Therefore, the man who can glance at a melon and, so to speak, see into its very heart and tell if it is green or red and juicy, is a much desired expert.

No story of north end watermelon growing would be complete without reference to Henry Jackson, Brawley resident, whose various interests include development of extensive watermelon acreages, especially in the Westmorland area. He has been responsible for bringing considerable desert acreage into production, in connection with the melon industry.

Naturally, watermelons are not planted at first on new land, which must be "tamed" with alfalfa or other crop before being put into melons, and by the time a tract is ready for this luscious product, another piece of land in prime condition has been added to the areas wrested from the desert by irrigation and labor.

The Valley ships annually between 4000 and 5000 cars of watermelons.



Grapefruit Growing is a Decided Success

CITRUS FRUITS

By B. A. Harrigan

To the orchardist who is interested in citriculture on a profitable commercial basis where the problems of developing his produce are reduced to a minimum, the Imperial Valley in Southern California offers exceptional opportunity.

Citrus crops grown here are named in the order of their importance: Grapefruit, tangerines, mandarins, Valencia and Navel oranges, lemons and limes.

The present acreage devoted to grapefruit is a little over 8,500 acres, with approximately 1,200 acres bearing commercially. The markets of the nation are fast becoming acquainted with Imperial Valley grapefruit as distinguished from the so-called California fruit, and as a consequence there is a genuine demand for the superior quality of the Imperial Valley product that is reflected in price premiums.

The period of maturity is but half as long as that in coastal sections of the state. The larger size, the freedom from insect scars, the excessive quantity of sugar and less acid give Imperial Valley grapefruit a remarkable flavor which makes it the favorite of the consumer and assures the citrus grower of this area a profitable future. A steady, conservative increase in the acreages devoted to grapefruit in the Valley is desirable and will be attended with substantial profits to the careful and scientific grower.

Imperial Valley soil is for the most part remarkably well adapted to citrus fruits. There are, to be sure, lands in the Valley that are not suited to profitable citrus culture. In general, land that is deep, rich, and free from a water table or alkali, is required for producing the most profitable and long-lived orchards.

The cost of the water supply to the individual is in the form of an assessment against his land amounting to $5 per $100 valuation. The highest valuation placed against any land in the Valley by the District is $150 per acre. The land charged to furnish water is needed to land thus

assessed, without additional charge except for a gate service fee of 25 cents a day during the period of irrigation. Irrigation costs could not exceed $7.50 per acre, which is very nominal compared to other citrus districts which have an irrigation cost of from $30 to $60 per acre.

Climatic conditions in Imperial Valley constitute its greatest asset so far as the citrus grower is concerned. Grapefruit trees blossom in February and March, about the same time as in other grapefruit growing districts. The fruits is ready for marketing the following November, December and January. In the other sections of Southern California the fruit is not matured until April or May, more than a year after the blossoming time.

One grapefruit grower exhibited at the Mid-Winter fair 92 beautiful grapefruit picked from a single two-year-old tree. The case is rather exceptional, but indicates that Imperial Valley climate is a tremendous factor in production of fine quality fruit in shorter periods of time than are required elsewhere.

Imperial Valley grapefruit, ripened in desert sun, has an actual and very apparent superiority of flavor when it is tested and compared with fruit produced in other sections of the West. This is no idle boast, nor is it an imagined quality. Sugar content is greater and acid content less, and the texture of the flesh of the fruit is materially finer than that of other fruit.

Because of this fact there is a market for Imperial Valley grapefruit which distinguishes it from other grapefruit and is a guarantee of sale prices that bring handsome net profits to growers here. That, combined with the advantage of shorter growing season and hence earlier marketing period each year, makes citriculture genuinely attractive to horticulturists who may be looking for a location.

There is an entire absence of black, red, and purple scale, mealy bugs, white flies, red spiders and other similarly dangerous pests. In other citrus-growing districts the expense per acre of fighting insect pests and diseases in citrus orchards averages from $20 to $30 annually.

Another great saving to the grower is that made possible by the absence of smudge pots. Frost occasionally touches the Imperial Valley, but almost never severely enough to warrant installation of smudge pots. The saving in annual orchard expense of this fact averages from $20 to $50 per acre, besides the initial cost of smudge pots. Young trees are protected from possible frost injury by wrapping mile maize stalks around them.

Imperial Valley offers the prospective orchardist in citriculture a saving over other citrus districts in irrigation, plant disease and pest control and maintenance of smudge pots, $140 per acre a year.

Costs per acre of preparing land and setting out grapefruit trees in Imperial County. (These are actual figures obtained from a 22½-acre planting made in 1928. Nearly all this work was contracted.)

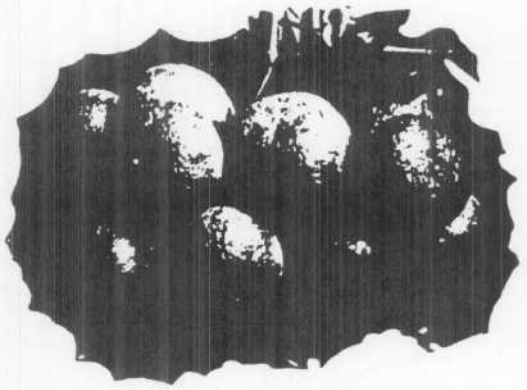
Fresno (leveling)	$ 3.60
Plowed, twice	7.20
Disced, twice	3.00
Floated, twice	2.00
73 trees at $1.00	73.00
Setting trees at 15 cents each	10.95
Preparing to irrigate	.90
Irrigating, first time	1.03
	$101.68

The cost per year for the maintenance of a grapefruit grove should not exceed $96 per acre until the time it is five years old.

VALENCIA ORANGES

By A. F. HINKLE

We have a new product here which promises to become an important one. It is Valencia oranges. Imperial Valley can produce Valencia oranges of high quality and enjoy an extra six-week marketing season at a time when no other area has any Valencias. We have been increasing our grapefruit plantings each year, and likewise our production. Now our people have become interested in other citrus fruits—tangerines and Valencia oranges. So far the citrus groves of Imperial Valley have been immune from insect enemies, so we have no fumigating or spraying to worry about. Then, to further help us along, we have found that sesbania, or wild hemp, planted in the groves among the trees in the summer and plowed under in the fall, makes a wonderful fertilizer. Sesbania is a leguminous plant, like peas or beans or alfalfa, and these legumes have the property of extracting the nitrogen from the air and putting it into the soil. This method of fertilizing is a great labor saver and it is cheap. It can only be done in Imperial Valley, where water is abundant. In other citrus areas they dare not divert their precious water from the storage reservoirs for a manure crop, because it must be conserved for the trees themselves. This is just another lucky break for Imperial Valley.



Grapefruit on one Stem

GREEN PEAS

Green peas are popular with the housewife the world over. Producing this delectable vegetable in carload quantities at the time when best prices can be obtained is becoming the habit of a number of farmers in the north end of the Valley. From 700 to 1000 cars are shipped out annually and the value of the product exceeds $1,500,000 every year—no small item on the list.

The planting of the seed starts around September 15, after the soil has been carefully prepared, fertilized and irrigated, and in the short space of six weeks the crop is ready for shipment and consumption. A ready market is easily found from the farthest eastern points to the extreme west.

When the packing and shipping time arrives, the fields are alive with men and women, busy packing and crating. It takes upward of four hundred cars to haul this valuable crop to its market.

Another curious sight to be seen in raising of this crop in Imperial Valley is the dusting by airplane. This method being the modern way of keeping the ravages of the pea weevil from the crop. While dusting, the aviator is only about two feet above the plants, and often his gears will be encumbered by the vines. The Coleopterous insect can instinctively lay an egg from the outside of the pea pod, the larva then cuts into the pea, hollowing it out, then it cuts a circular trap door to escape by in due season, but unfortunately there is another insect which can pierce the trap door and lay its egg in the larva's body, however this is not done very often, and by the method of dusting by the airplane the destruction to the pea crop is greatly lessened, and the grade of peas shipped from Imperial Valley is in every way one of the finest in the land.

COTTON

The ease with which Imperial Valley can grow cotton has been thoroughly demonstrated. Prior to 1913 a few thousand acres, more or less of an experimental nature,

showed the Valley to be a first class cotton raising area. From 1915 to 1920 the acreage kept increasing until that year 126,081 acres were raised. Since that year, which found cotton at a low price, the acreage has gradually diminished until this year (1931) there is practically no cotton being raised north of the line. The acreage south of the line has also dropped because of market conditions. Should the cotton market get back to a paying basis Imperial Valley will no doubt again take an interest in that crop.

BEEF CATTLE FEEDING

By H. A. CONGER

Very few inhabitants of Imperial Valley today are able to visualize any living existence or production of economic wealth here previous to the advent of irrigation.

It is a fact however that the feeding of beef cattle was carried on here for manay years before the first trickle of water was sent down from the Colorado, under control of canals. It is the Valley's oldest industry and contains more interest, more historical narrative from its early sponsors than any pursuit followed here subsequently.

According to an old cattle man who fed cattle in the New River region in 1895, the Valley was not so formidable then as has often been pictured. The overflow from the Colorado down New River channel, which river was merely a large wash crossed anywhere, watered many thousands of acres of undergrowth and grass upon which cattle thrived. This grazing area extended into Mexico to the Colorado itself. The cattle were driven into the Valley from the Campo and Cuyamaca country via Warner Springs, Carriso Creek Canyon, Coyote Wells and thence to the shores of Blue Lake or Cameron Lake where the cow hands camped out under the stars, worried not at all about horse or herd, knowing they would not range far from feed and water. Little did they dream that in a few short years all that formidable region would be green fields, trees and hustling towns. What cared they as long as water was in the "Pot Holes," and there was feed for cow and man.

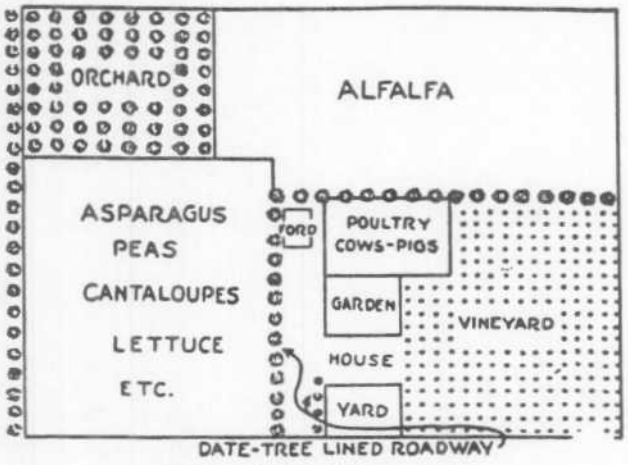
This carefree existence came to an end in 1902 when R. H. Benton and Leroy Holt began feeding cattle driven in from Campo and shipped via Flowing Wells or Imperial Junction. These were fattened from irrigated lands and shipped out again to coast markets. These men were followed later by Messrs. Harry Jones, Kalin, Damron, McCain, Campbell, Ira Aten and many others who now feed over 60,000 head per year, becoming one of our greatest industries. While ever increasing demands of coast markets take many carloads of beef from here, yet the local market also absorbs many thousands of dollars' worth of products, all killed and packed in the Valley.

Probably the first wholesale killing and packing was done by George Long at the C.-M. ranch on the border. Mr. Long later came to Imperial where he built a plant and formed the Pacific Land and Cattle Co., which company today sells over one million dollars' worth of its products per year in its many markets in this territory, all of which is killed and packed at the Imperial plant.

The future of cattle feeding here seems to be assured owing to the certain supply of feed of all kinds and the equable climate and steady and safe water. The industry is mostly in the hands of old Valley pioneers who originally came from the big cattle ranches of the back country and know their business thoroughly. Cattle feeding here affords a diversification from vegetables and is a boon to the rancher and the whole economic structure of the Valley.

OTHER PRODUCTS

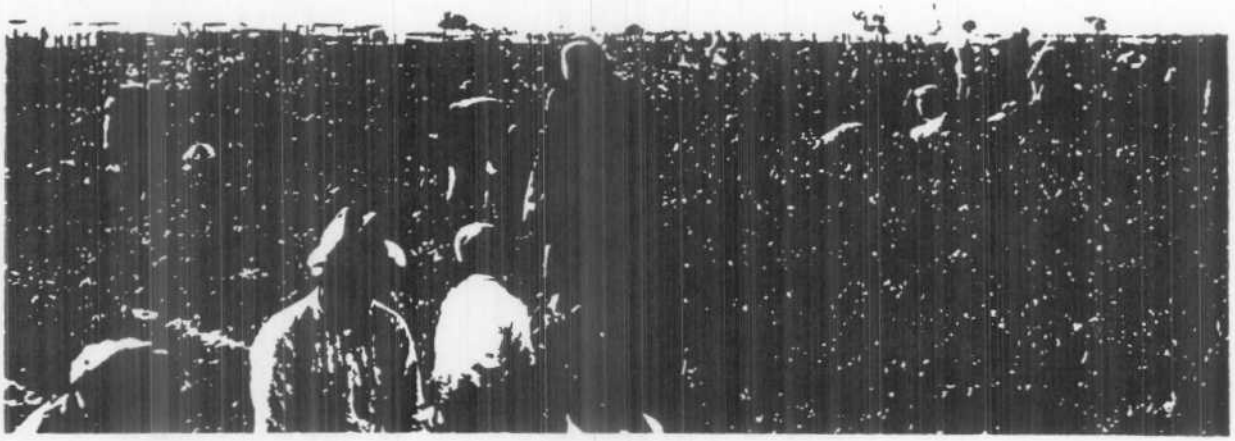
We have reviewed some of the more important crops and products but the fact remains that a complete discussion of all the crops that are or could be grown in Imperial Valley would be a catalog of the entire list. Attention is called to the following table which shows the amount of product and the cash value of one year's crops—1929. Note that the total value is over $62,000,000—more than $1000 for every inhabitant of the Valley—and a carload, also, for each man, woman and child.



A Popular Small Farm Plan

CROP AND LIVE STOCK VALUES

Alfalfa	9,618	cars	$2,852,018
Barley	604	"	525,480
Milo Maize	253	"	227,700
Wheat	260	"	265,200
Cotton	205	"	958.375
Cotton By-products	135	"	144,373
Lettuce	12,608	"	12,116,288
Greens	804	"	672,144
Squash and Cucumbers	221	"	375,700
Tomatoes	216	"	333,072
Carrots	676	"	565,136
Cabbage	57	"	38,532
Peas	776	"	1,545,792
Asparagus	148	"	454,212
Mixed Vegetables	327	"	177,888
Cantaloupes	14,378	"	16,376,542
Honey Dews	2,572	"	2,471,692
Honey Balls	1,734	"	2,091,204
Casabas	34	"	17,680
Miscellaneous Melons..	1,306	"	1,509,736
Watermelons	4,650	"	2,022,750
Grapes	374	"	816,068
Grapefruit	329	"	475,968
Dates	5	"	35,000
Olives	2	"	6,480
Strawberries	9	"	26,172
Pecans	3,400	pounds	3,400
Ice	456,034	tons	2,583,042
Tallow	12	cars	26,400
Hides	12	"	21,600
Wool	3	"	40,500
Manure	1,994	"	149,550
Cattle	40,316	head	4,233,180
Mules	2,776	"	222,080
Horses	5,250	"	393,750
Sheep	74,084	"	666,765
Hogs	32,783	"	196,698
Dairy Cattle	23,902	"	2,748,730
Butter Fat	5,639,942	pounds	2,791,771
Sweet Cream	232,668	"	119,824
Powdered and Dry Milk	3,304,151	"	300,259
Cheese	638,023	"	117,962
Condensed Milk	588,735	"	23,549
Poultry	15,266	dozen	137,394
Turkeys	25,500	head	91,800
Bees	15,000	stands	90,000
Honey	840,000	pounds	63,000
			$62,104,447



Green Peas by the Acre are a Specialty Around Calipatria

JEROME L. FORRESTER'S EXPERIMENTS

Jerome L. Forrester, eldest son of Edward E. Forrester, came into the Valley with his father and uncle, Lucien L. Forrester, from the Santa Maria Valley, arriving October 11, 1901, with thirty head of horses and several big wagons, filled with farm equipment. They crossed New river at Storm's Crossing and proceeded to Calexico, where they went to work for the California Development company. The first job they had was to drive to Flowing Wells, get the first large ditch excavator. They pulled it back with horses. It took twenty-six horses to operate the machine; twenty-two horses were hitched ahead and four behind the machine. With this outfit they started at the Ten-Foot drop and built three miles of the main canal. While A. M. Chaffey was on the machine inspecting the work one day, the twenty-six horses ran away with the machine; many of the horses got down and there was an awful tangle before they were unraveled. They continued work on the canals for several months, and then Jerome went to the home place, the present Forrester ranch, west of El Centro, and early in 1902 put in barley. They hauled sorghum from Calexico to feed their stock and bought the first wagon load of barley hay ever cut in Imperial Valley from Tom Beach. They also put in sorghum, millet, Egyptian corn and milo maize When the Egyptian corn got ripe they hired Cocopah Indians to cut it. The milo grew so tall that it was impractical to harvest.

Jerome Forrester for thirty years has kept records of his experiments with various crops and daily records of the weather. He would put down in books the kind of seed, the date of planting, date of irrigation, date of its first appearance above the ground, the dates of cultivation, the date of harvest, quality and product, the amount, etc. He has several books filled with these notes and consequently is in a position to know exactly what the soil of Imperial Valley will grow and how best to grow it. The failures were recorded along with the sucesses. Here are a few examples of his experiments:

Dwarf Milo. Number 18684, from United States Department of Agriculture, planted June 19, 1909, irrigated June 21, irrigated July 20, irrigated September 6, bloomed September 10, matured October 15, average five feet tall, good producer and good quality. Common milo planted and treated in the same way, grew seven and a half feet tall, with lighter crop.

Alfalfa. Experiments made for the Department of Agriculture. Twelve varieties planted. Six strains of Peruvian tried out. Best results came from Hairy Peruvian for hay and stock and Arabian for rabbits and chickens. The alfalfa plantings of today are based on these experiments.

Egyptian Cotton. Ground well wetted previous to seeding, first planting in March a failure because of rain, which baked the ground; planted May 20, irrigated twice after up before July 15, cutivated sparingly, irrigated August 20 and 26 and September 10; good crop.

Alfalfa. The Forresters planted alfalfa early in 1903 and several hundred acres produced as much as 1½ tons to the acre per cutting and cutting eight times a year. They irrigate before cutting and cut close to the ground, raking clean and renovating while the ground is still moist. The renovation keeps down weeds and produces more alfalfa. They pastured two cows to the acre, using Hardy's Upland, Hairy Peruvian and common with success. Arabian alfalfa is soft texture and best for chickens and rabbits and makes good greens like spinach for the table.

Sugar Cane. Planted April 20, Louisiana cane grew eight feet high making a dense thicket. It continued to reproduce for several years.

Summer Squash. Planted April 4, up April 13, bloomed May 20, squashes three inches in diameter from May 26 until August 10. Summer squash are proof against squash bugs, and as long as melons are kept picked off they keep on producing until midsummer; among the many varieties tested out summer squash ranks first; it is a heavier bearer.

Japanese Pie Pumpkin. Planted June 18, up June 24, bloomed July 24, matured September 25, a shy bearer and quality only fair.

Mammoth Golden Pumpkin. Planted June 19, up June 26, bloomed July 24, full size September 1, heavy bearer, quality fair for cooking purposes, as it is a stock pumpkin.

Cucumbers. Planted April 13, up April 20, bloomed May 28, four inches in length and ready for table use June 17.

Tomatoes. Forrester has record of ten different varieties of tomatoes—the Livingston dwarf champion, seeded in cold frame December 12, up January 15, transplanted March 20, commenced ripening June 20, ceased July 25, good producer, although not quite as good as Dwarf stone.

Livingston Nero Dwarf Stone, same record as above, very promising.

Mammoth Purple Fruited Ground Cherry planted February 27, matured June 15, some two inches in diameter.

Golden Nugget, planted April 3, matured July 4, continued until late in December, one of the best for this climate for table use. Bear all summer.

Yellow pear tomato, bears extra well winter and summer. Best at present known to Forrester. Bears all summer.

Bush Butter Lima Beans. Planted April 13, up April 28,

bloomed June 1, matured July 3, produced sparingly, produced again first part of September and bore well until December 20.

Burpee's Twentieth Century Bush Limas. Planted February 19, up March 20, matured June 8, prolific bearer, although easily blasted by hot weather.

Sewee Pole Limas. Planted April 7, up April 20, ready to harvest July 15. Prolific bearer, some vines having 150 pods; bore until December 20.

Forrester prefers this variety of beans to any other for the Valley. His experiments included large white beans, Davis pink and white beans, pink beans, Kentucky wonder, small pink, large white, new Wisconsin tree beans and bush beans, all of which are declared good yielders, with some better than others. Tepiary beans best of dry beans.

Soja or Soy Beans. T. Hale's Early. Planted June 17, up June 25, harvested November 15. Grew nearly four feet high. Prolific bearer. Good cover crop or for food.

Corn, Early Minnesota Sugar. Planted August 26, up September 1, harvested November 1, yield fair, quality excellent. Pima Sugar Corn best when planted at intervals will bear all summer.

Mongrel White Rice Popcorn. Planted February 19, up March 15, matured June 24, only fair yield. Mapledale Prolific Popcorn better yielder.

Cowpeas. Hybred Cream Cowpeas. Planted July 20, up July 26, matured November 15, fine quality and a good yielder. The best for table use of the dozen or more experiments.

Watermelons. Chilian variety. Planted April 5, matured July 5, quality and yield good. Various experiments with various dates of planting show that planting can be done in early March.

Cantaloupes. Planted in open field early February will mature late in May or early June. Special protection from frost will bring on earlier maturity.

Carrots. Long variety plant in September or March, will mature in February and July. Quality good and yield fair.

Beets. Table turnip variety. Planted September 6, matured November 13, continue to bear until August; can be planted any time except in the hottest weather.

Egg Plant. Black Beauty. Planted March 1, harvested from August 10 to December 30; same bushes commence blooming again January 27 with harvest March 27. Are not generally harmed by frost.

Dwarf Okra. Planted March 23, harvested June 12, cultivate frequently, good yield.

Irish Potatoes. Early Rare Variety. Planted April 3, mature June 1. Best quality, small size.

Radishes. Icicle and turnip shape. Plant any time. Japanese Variety, plant in fall or winter.

Turnips. Plant seed any time except hottest weather; all varieties thrive well. Extra early varieties best planted late in fall.

Boulder Tomatoes. Seed planted in bed July 31, up August 8, transplanted August 30, began ripening January 27, matured May 15, after being nipped by frost; yield good and quality excellent.

Dewberries. Vines planted February 15, fruit April of next year. Main crop gone May 20.

Blackberries. Vines planted February 15, crop gathered April 29 to June 12 two years later.

Fruit Trees. While the above experiments in ground crop were made by Jerome Forrester himself, the experiments in growing fruits were made by his father and other members of the family, while Jerome kept the records. Their experiments showed that Apricots would bear fruit in two years, maturing in May, in good quality and very productive. The trees frequently die because of root trouble.

Washington Navel Orange Trees bore fruit in two years, of quite superior quality, subject to frost.

Black Mission Figs bore fruit in two years and continued in good shape. White Celeste Figs bear continuously from July to December. Kadota Figs bear well throughout the summer.

Experiments with Lemons were quite successful.

Quinces develop well and easily raised here.

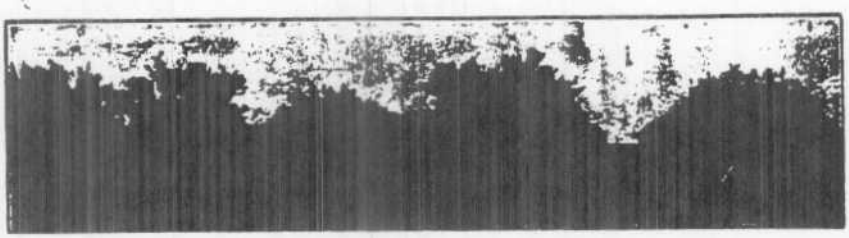
Garvanzos do as well here as in the Yaqui River, Sonora country when planted in November. When planted in spring they do not bloom.

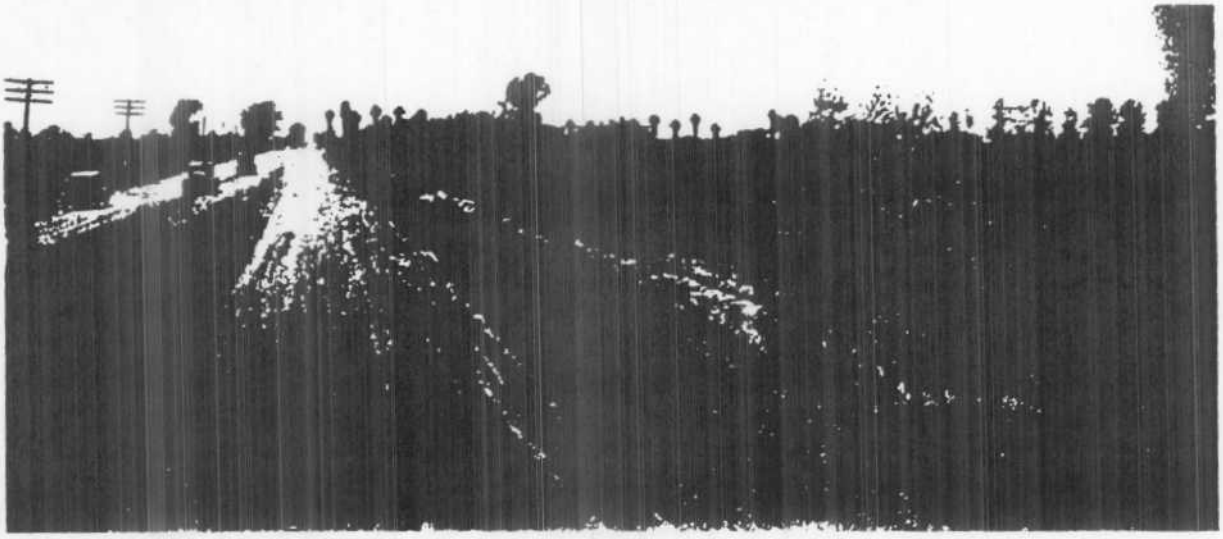
Grapes. Thirteen varieties of Grapes were planted in experimental plots. Among the Persians the Kahalle and Persian No. 21 ripen early, first part of June. Thompson Seedless ripen early and are good quality. Muscats very good. Malagas are best table grape to grow. The Morocco good as a late grape.

The Forresters were among the earliest to find out how different varieties of trees grow. They planted cottonwoods, willows, mulberries, Arizona ash, pomegranate, almonds, peaches, plums, apricots, oranges, lemons, grapefruit, prunes, Tamarack shade trees, eucalyptus and even mesquite. They have been freely consulted and have freely given their best advice to other growers during the last thirty years, and deserve great credit for their enthusiastic and unselfish cooperation in every agricultural endeavor.

In addition to the crops of the ground the Forresters have raised horses, cattle, hogs, sheep, goats, turkeys, chickens, and almost everything that walks on either two or four legs.

The reader is referred to the pioneer section of this history for further reference to the Forrester family.





The Timken Ranches are Models. The Company Plants Shade Trees Along the Highways. This is La Granja, Headquarters Ranch two Miles West of El Centro. It was First the White Ranch.

TIMKEN RANCH ACTIVITIES

H. H. TIMKEN, the roller bearing manufacturer of Canton, Ohio, bought his first Imperial Valley ranches in 1913, close to a thousand acres. Within a few years his holdings totaled around 3000 acres and although he has owned as much as 4000 acres of Imperial Valley land his present holdings come to about 3000 acres.

During the first years of Timken ownership of the ranch properties the land was uniformly leveled, with future subdivision in mind, and most of the acreage put into alfalfa, with perhaps a thousand acres each year devoted to cotton and milo maize. The alfalfa was mostly fed to Timken cattle and sheep. During this time Timken brought in 125 people, by special train, from the drought area of Texas, to pick cotton.

Just before the World War, Timken ranches built the best housing accommodations for ranch employees in the State of California, according to the State Housing Commission. The main plant sleeping quarters, divided off into single apartments, with shower and tub baths, laundry room, kitchen and dining room to accommodate 100 men and reading and lounging room. A ranch store with a big stock of goods was also operated for benefit of employees. Others were having trouble to secure and keep enough help on Imperial Valley ranches but more help sought these accommodations than could be used, and the labor turn-over was very low.

At the time of the war Timken Ranches, in conjunction with the government, made extensive experiments with a decorticating machine to extract fibre from both hemp and ramie, both of which crops were most successfully grown on the ranch south of Brawley. Fibre was also extracted from cotton stalks. Many old timers will recall the 100-acre field of hemp growing about 14 feet high and a perfect stand along the Imperial-Brawley highway. Hearst, Pathe and Mutual film, the feature movies of that day, took pictures and local Timken people heard of those pictures from all over the United States and even from Canada. At this time flax was grown as a nurse crop for alfalfa, on a small acreage. Government experts pronounced the flaxseed of splendid quality. The yield was very satisfactory. The greatest difficulty at that time was to get a threshing outfit to handle the flax. Alfalfa has at all times been the main stay of Timken agricultural development here, some 2000 acres generally being in alfalfa with the balance, since the war, rented to vegetable growing concerns. Miller-Cummings Co. 820 acres, Will S. Fawcett Co. 400 acres, Albert Gargulio 200 acres and Zaferis Bros. Co. 220 acres, the first three companies now growing vegetables on Timken Ranches acres.

After the war, lease arrangements were made with Fred Gunterman, whereby first the Vailima ranch of 520 acres and subsequently the Aravaipa ranch of 147 acres, the Cocopah ranch of 320 acres and 240 acres of the Ufford

Prospective Baby Beef on the Timken Vailima Ranch. Note the Grapefruit Grove in the Background

ranch, adjoining Heber on the west, on both sides of the paved county highway, were developed as stock ranches. The Vallima stock ranch is one of the show places of the Valley.

The largest Timken ranch is comprised of 1280 acres, two adjoining sections, a mile south of Brawley. This ranch has the advantage of more than a mile and one-half of state highway through or alongside it. It also has a spur track from the Southern Pacific railway, where as many as 30 cars of vegetables have been loaded in one day. Six hundred forty acres of this ranch were once put into cantaloupes, after a period of alfalfa. The yield was 275 crates of cantaloupes per acre.

The Timken La Granja ranch, of 316 acres, one and one-half miles west of El Centro city limits, has the advantage of the Imperial Valley-San Diego highway alongside, for a distance of one mile, and also has a loading sidetrack of the S. D. & A. railway near the middle of the ranch.

Mr. C. O. Bullis, who represented Mr. Timken in acquiring these various properties, and who also acted as Mr. Timken's loan agent in placing loans to the extent of several hundred thousand dollars on Imperial Valley ranches and who has had charge of these Timken ranches since they were acquired by Mr. Timken, lives at La Granja and makes it the headquarters ranch.

Imperial Valley people will watch with a great deal of interest the two rows of bottle trees furnished and planted by Timken Ranches in May, 1929, and cared for, a period of one year, by Timken Ranches and then turned over to California State Highway commission. The trees are making splendid growth and in time should furnish most welcome shade along the highway. These trees are unusual in that on a full grown tree are found many different kinds of leaves, as the botannical name sterculia diversifolia indicates. At the time these trees were planted the California State Highway commission limited Timken Ranches selection to two varieties, bottle or pepper trees. Timken Ranches had had most unsatisfactory results with pepper trees on account of winds, and on the other hand satisfactory results with bottle trees. Along the center line of this ranch, parallel with the S. D. & A. railway, a mile of Chinese elms are now flourishing. These trees are rough, wiry and quick growing.

Grapefruit were planted on Timken properties fifteen or more years ago, when Marsh Seedling Nursery stock trees were purchased for thirty-five cents per tree or less. The best returns for one year have been around $600 per acre.

One interesting thing connected with Timken Ranches activities has had to do with pipe lines, of which there are now some 14 miles on Timken Ranches, most of the 18 inch with one mile of 20-inch pipe.

A few years after the first ranches were acquired a 16-inch pipe line was laid on the Timken Buena Vista ranch, adjoining Holtville on the south. But because of the excessive fall of this ranch, greater than ordinary land of this valley, and because of the fact that old No. 2 furnished clear water most all of the time it was not felt that the success of this line indicated much for Imperial Valley lands generally. Most farmers of those days were afraid that the pipe lines would soon become clogged with silt. Finally a small line was installed on a vineyard near the Meloland store. The owner of that land had pipe lines near Etiwanda and he thought they would succeed here. When Timken Ranches decided to install one mile of 16-inch pipe, this sort of encouragement was met.

From the Chief Engineer of the Imperial Irrigation District at that time, "The Lord help you. I reserve the right to say 'I told you so.'" From a pioneer neighbor who had extensive holdings near the ranch south of Brawley where the first mile was laid! "It can't be done. The line will be plugged with silt in no time." The objectors eventually miscalculated the force of pressure of a head of water.

ATEN'S MODEL CATTLE RANCH

FEEDING cattle for the market from the broad acres of alfalfa and barley fields in Imperial Valley has been one of the stand-by industries since the earliest days of reclamation. Even before irrigation of the desert became a fact, vast herds were run over the floor of the Valley by the cattlemen of San Diego County and Arizona, who made use of the grasses that grew luxuriantly on land that was overflowed by the Colorado River. As soon as water was available for the fields, milo maize, sorghum and barley immediately provided food for live-stock; then alfalfa made its appearance. This forage crop at once became the foundation for animal husbandry on a large scale.

The practice of bringing in cattle feeders from Arizona, New Mexico and Texas, turning them into the luxuriant alfalfa fields and finishing them off, fat and tender, for the market, became an industry in itself. Today this same practice is the foundation for a good many fortunes made in the Valley.

Mr. and Mrs. Ira Aten and their family came here from Texas, in 1904, from the heart of a great cattle district, where Mr. Aten had charge of a great ranch. It was the great Capitol Syndicate Ranch in the Panhandle of Texas. In 1882 the State of Texas gave to Senator C. B. Farwell, of Chicago, and J. V. Farwell, Sr., head of the large dry goods house in Chicago by that name, 3,000,000 acres of land to build a State Capitol at Austin, Texas. This land was developed into a great cattle ranch of some 200,000 head of cattle. The Aten children were born and raised on this ranch.

Mr. Aten foresaw the stock feeding possibilities of the Valley. He knew good land when he saw it and acquired 320 acres between El Centro and Imperial by purchase; not finding any suitable government land nearby, he traveled across country northward and selected 640 acres for filing, for himself and wife, two miles west of where Calipatria is now located adding to this by purchase at various times. It is now owned by Mr. Aten and members of his family.

Mr. Aten at once set about intensive improvement of his ranch properties, for the purpose of feeding feeder cattle and selling them on the market during March, April and May, in first class condition. The difference between caring for vast herds of cattle on the ranges and caring for the same number of feeder cattle on an irrigated ranch is quite considerable. Where half a dozen men could care for 5000 head of cattle on the range, it takes from twelve to fifteen hands on an enclosed ranch in pastures from 40 to 160 acres. It must be understood that these cattle must be moved every week or ten days to new fields so the alfalfa can again be watered and growing. It takes four men with horses to properly move a bunch of cattle—one in the lead, two on the sides, one behind.

Mr. Aten directed the development of the property, the leveling of the fields, the building of fences, feeding pens and ranch buildings; the planting of trees, the laying out of the domestic water system and did the hiring and firing of the cowboys until he was elected Director of the Imperial Irrigation District in 1923.

Mr. Aten gave each of his children 80 acres of land, as they became of age. There was Marion, Boyce, Ira D., Imogene and later Eloise being born in Imperial Valley. When Mr. Aten went into the Irrigation District as a Director in 1923, he delegated the management of the big ranch to his son, Ira D., who has since had full control of all operations. The other sons and daughters leased their land to Ira D., and the whole ranch is therefore conducted as a unit. A substantial ranch home was built in the midst of luxuriant trees and shrubbery, and equipped and furnished in modern fashion.

Young Aten apparently believes in the most modern methods, and he has brought the science of handling cattle on an enclosed ranch down to a fine point. The routine of watering, growing, mowing, drying, chopping, stacking and feeding alfalfa is set for each field, almost to the minute.

On the Aten ranch there are thirteen feeding pens strung along the edge of the Alamo River, that runs through the middle of the ranch. Only part of these cattle are fed in pens. In the center of each of these pens there is a long feeding rack where the chopped hay is stacked. In each pen are circular concrete water tubs, twelve feet in diameter, where the water level is controlled by a float, where the cattle drink clear settled water piped from reservoirs. This same kind of a tub is found in each of the grazing fields.

The handling of the hay on the Aten ranch would discourage the ambition of the old-fashioned Kansas hay tosser, who forked his load in the broiling sun and picked the stickers from his neck. Ira D. has fashioned a magnificent substitute that picks up the hay from the ground, carries it up an elevator, places it in the maw of a slashing, whirling, chopping machine where blades of steel cut it into half-inch lengths, blows it by air pressure through a pipe that hangs over a huge wagon box that travels alongside the monster machine. The machine is pulled about the fields by a tractor. It has a capacity of thirty tons per day. That is not all, the wagon load of fine chopped hay is hauled to the racks in the feeding pens, where another machine on a wagon operates a suction pipe something like a cotton blower, which takes the three or four thousand pounds of hay from the wagon bed in just a few minutes, and locates it along the center of the pen racks, where the stock get to it through adjustable openings. These modern conveniences make it possible to carry on all ranch operations with the highest degree of efficiency, which also means lowest cost.

One would think that operating a stock ranch such as this would not require the use of cow ponies to the extent required on the ranges, but you cannot take the cattleman's horse away from him. On the Aten ranch there are fifteen or twenty of the finest, sleekest, handsomest saddle horses in the Valley. A horse wrangler, with a southern drawl, looks out for feet and ankles and possible injuries. He is a sort of hospital steward for the animals. Over the way a blacksmith shop fully equipped with power machines, stands ready to repair anything from a broken sewing machine needle to a main drive shaft. A bit further on one finds a typical bunk house. This bunk house is called the Boar's Nest. Close by is the home of the foremen, a roomy, comfortable place that was the Aten Ranch house before the new home was built. In the cook's house a giant negro named George will greet you with a cool drink on a hot day—water of course—drawn from the electric refrigerator, or he will tempt you with an ice cold melon, a home-grown turkey sandwich or a slice of Ham What-Am, if the necessity arises.

In referring to the other members of the Aten family, Mrs. Aten lives with the girls, Imogene and Eloise at Burlingame, California. Imogene is Secretary-Treasurer for the management of the athletics at Stanford University. Eloise was graduated from Wisconsin University this June, 1931.

Marion H. Aten went overseas with the Canadian forces as a Lieutenant in the Aviation and after the war was transferred in the British Royal Air Corps as Captain. He remained in the British forces for ten years after the war. He spends his time between his mother's home and Imperial Valley.

Miss Lucile Boyce, who is a sister of the late John E. Boyce, supervisor a number of years from Calexico, lives with Mrs. Aten, her sister, at Burlingame.

The reader is referred to other portions of the history for reference to Lieutenant Boyce Aten, who died in the service.

THE S. A. GERRARD COMPANY

THE S. A. GERRARD Company, with headquarters in Cincinnati, Ohio, markets annually the fruits and vegetables grown on more than 35,000 acres of land scattered throughout many states of the Union. It is this great company's business to know where garden products grow best. The fact that after twenty years of experience in Imperial Valley the company has purchased 4500 acres and leases 6000 acres more, a total of 10,500 acres, places an undeniable stamp of approval on the farming possibilities of Imperial Valley.

The Gerrard people entered the Valley in 1911, a few years after the cantaloupe began to be an important factor in the markets of the world. The first year the company shipped 117 cars and hugged itself for its enterprise. Last season the company shipped a few more than 3500 cars of lettuce, peas, cauliflower, cantaloupes and carrots and in addition marketed hay from more than 2700 acres.

For many years it was the habit to close the Brawley office as soon as the cantaloupe season ended but now the company rotates crops so that there is something being shipped every day in the year.

In the opinion of Mr. S. A. Gerrard himself, who visited Imperial Valley in May, 1931, the Valley's Iceberg lettuce has done as much to advertise the region as any other one crop. Imperial Valley is known in every city and town in the United States for its Iceberg lettuce. He thinks carrots are the next to find more and more popular favor.

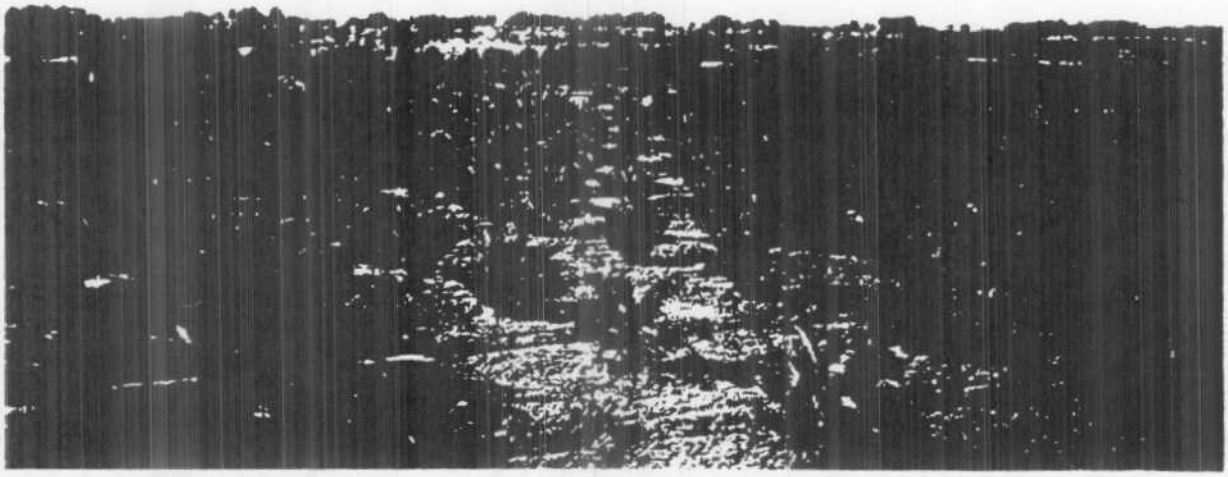
In the early days Mr. Gerrard drove about the Valley with a horse and buggy and could visit every vegetable growing acre in a few days. All the packing was done in thatched sheds alongside the railroad tracks. Now fast trucks carry the product to modern packing sheds equipped with every known device for fast handling, grading and packing. Precooled produce is placed in precooled refrigerator cars which are whisked at express speed all over the country. Of the annual total of some 60,000 cars for the county the Gerrard Company handles about six per cent.

During the years of 1927, 1928, 1929 and 1930 the company increased its investments in the Valley 400 per cent which also speaks as an unqualified endorsement.

The Gerrard Company has centered its activities around Brawley and Westmorland. In Brawley adequate headquarters offices are maintained. Business details are handled by experienced young men who have practically grown up in the business with the Gerrard company. It is a praiseworthy practice of the concern to encourage its resident managers to take an interest in civic affairs.

The part the Gerrard people have played in stabilizing the vegetable shipping industry of the Valley is important. When a great, national concern which pays its labor promptly, strives to co-operate in the raising and distributing of quality under strict inspection, meets its obligations and takes an interest in local affairs the effect is bound to be good for the Valley.

Mr. Gerrard started some forty years ago as a fruit peddler on the streets of Cincinnati and his rise to the position of dean of the fresh food merchants of the nation is the result of keen business foresight.



Bullis' Date Bowl is full of Saidy Dates. The bowl is a Depressed area on the Banks of New River at the West End of the American Legion Road, one mile Southwest of Brawley. It is one of the Show Places of the Valley.

SAIDY DATES

UNDOUBTEDLY one of the most important events in the history of the agriculture of the Imperial Valley occurred in 1924 when C. O. Bullis, manager of the Timken Ranch Company's interests here, signed a contract with the Bureau of Plant Industry of the U. S. Department of Agriculture to secure for Imperial Valley two-fifths of the 5000 Saidy date offshoots imported in 1922 by the Department of Agriculture in co-operation with C. E. Cook, of Indio.

This importation was financed by Mr. Cook and under the terms of the contract Mr. Bullis recompenses Mr. Cook for two-fifths of the expense.

Since arriving in this country these offshoots have been in Mr. Cook's quarantine date nursery at Indio where they have been under the constant inspection of the U. S. Department of Agriculture to guard against paralatoria scale. Mr. Bullis moved these offshoots to Imperial Valley and set them out on his ranch near Brawley. The picture shows their present development. The low ground has been named "Bullis Date Bowl."

C. O. Bullis

Under the terms of the contract these palms must be maintained in quarantine for twenty years and cannot be moved without permission of the Federal quarantine authorities under whose control they remain for all pest control purposes.

Three-fifths of the offshoots from these palms are available to bona fide date growers who must plant, not resell them. Of the remaining two-fifths of the offshoots, one fifth goes to the U. S. Department of Agriculture for experimental purposes. Of the other fifth Bullis is allowed to keep or dispose of as he sees fit.

Saidy palms produce twenty to thirty offshoots each and the Valley will be entitled to some 15,000 of these.

According to Dr. Walter P. Swingle, in charge of the date work of the U. S. Department of Agriculture, the Saidy is the great export date of the Oasis of the Libyan desert in the west of Egypt. It is also grown on a large scale in the Nile Valley near Cairo where trees yield enormous crops. In this part of the Nile there are heavy dews during more than half the nights of September and October. Nevertheless this variety matures perfectly in spite of conditions which resemble very much those prevailing in Imperial Valley and which have heretofore prevented the Deglet Noor variety being profitably grown in Imperial Valley.

Saidy is a very large date, short and thick with strong date flavor which has a great advantage over most of the varieties. It improves with storage instead of deteriorating. When first harvested in October and November these dates are rather syrupy but in the course of the next two or three months the syrup slowly crystalizes into a mass somewhat resembling maple sugar. Saidy dates in this condition are of delicious flavor and will keep indefinitely.

The romantic story of the first shipment of Saidy dates under the misleading name of "Wahi-1901" and many expeditions sent to Egypt and the Libyan desert and its final identification by Prof. Mason in 1913 as the Saidy date and the Servi date of the Nile Valley is all told in Bulletin 1125 of the U. S. Department of Agriculture entitled "The Saidy Date of Egypt." This variety has succeeded admirably in Yuma, where it has been fruiting for nine years.

The great significance of Mr. Bullis' action is that large numbers of offshoots of this variety of dates which is considered by experts to be the finest, are soon to be made available to Imperial Valley farmers at a cost far less than other varieties. These offshoots, of course, are grown in local soil and under local conditions, greatly minimizing the dangers of loss in planting here. For years many farmers here have been anxious to get into this profitable industry but have been unable to do so because of the very limited number of offshoots and the prohibitive price at which they have been sold. This large importation of Saidy dates will doubtless prove the foundation of date culture that will be one of the leading industries of the Valley.

Mr. Bullis, in addition to looking after his personal interests, is general manager for the Timken Ranch Company in Imperial Valley and supervises the activities on more than 3000 acres for H. H. Timken. He has been in the Valley since 1913 when he came as agent for Mr. Timken.