HISTORY

OF

LOS ANGELES COUNTY

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Assisted by a Board of Advisory Editors

With Selected Biography of Actors and Witnesses in the Period of the County's Greatest Growth and Achievement

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CHAPTER XXIII

THE AQUEDUCT

In my book "California," published by the Grafton Publishing Corporation, I made the following statement:

"The story of the Owens River Aqueduct is the story of a great city builded on a desert that one day awoke to the very serious fact that it must stop growing or find more water for its uses. The city did not desire to stop growing, but there was no more water anywhere within sight that it could obtain. It had utilized to the utmost limit every drop of water in every stream to which it had a right. The city that faced this grave problem was the City of Los Angeles."

And also, here again, in order to discuss the present and to forecast the future, we find ourselves compelled to revert to the past—that beautiful and mighty past when were laid the cornerstones of the commonwealth, and when California's career among civilized communities was begun. Wherefore, I ask the indulgence of my readers to quote again from my book "California":

"In considering the present and future greatness of California, the imagination constantly reverts to the first attempts that were made at civilization and commercial progress. One who knows and loves the story of California can never behold the great irrigation ditches which wake to living bloom the vast stretches of opulent plain and valley without seeing, as in a dream, the first uncertain waterway which Junipero Serra projected in the Mission Valley of San Diego. As one speeds now upon the shining highways that link towns and cities together from end to end of the Golden State, memory stirs in the loving heart, the dream of days when the Mission hospices, with their flocks and herds on the hillsides, and the Indian neophytes chanting in the harvest fields, awaited the welcome traveller on the King's Highway. And thus Junipero Serra stands forth the first and greatest character of which California yet can boast—her first missionary, her first merchant, the first of her empire builders."

It is difficult to believe that Southern California, before the coming of white men, was really a desert. But that is what it was. It is now a great garden and lush with bloom, its agricultural and horticultural products running into many millions of dollars in a commercial way annually. But when the mission of San Gabriel was founded in 1771, and the pueblo of Los Angeles founded ten years later, water was the least plentiful thing to be found between the Tehachapi and San Diego. The rivers and streams of the country were then, as now, dry streaks of sand throughout the long hot summers.

When Los Angeles was founded in 1781 there was in sight a quantity of water available for domestic and farming purposes sufficient only to meet the needs of a small community. And everything was all right in this respect

for many and many a year while Los Angeles remained a mere village, sleepy and contented.

It was only when the "gringo" came and insisted on making a city where it seemed that neither God nor man ever intended a city should be, that the problem of water became momentous.

It is true, however, that by one means and another, the ingenuity of the engineers was able to cope with the situation. But the engineers were always at their wits' ends. Every year more and more people came to make Los Angeles a bigger town, but Nature did nothing to bring more water to it.

We can realize what the situation came to be if we will go back to the year 1905 when the population of Los Angeles was in the neighborhood of 200,000 souls.

In the month of July of that year the city found itself using every day 4,000,000 gallons of water more than was flowing into its reservoirs. The water commission found itself figuratively tossing on its bed and spending sleepless nights. It sent out its engineers on a quest for more water, as though by some magic or miracle the rocks might be smitten and heretofore unknown springs might be discovered.

And the engineers came back only to say that no possible source of water supply that could by any stretch of the imagination be considered adequate existed anywhere south of the Tehachapi or west of the range of mountains whose backbone lies back of San Bernardino.

It was of the future that these worried water commissioners and the engineers had to think. Los Angeles absolutely declined to cease growing. The experts estimated that by 1925 Los Angeles would have reached a population of 400,000 people. And it would be a city then tragically short of water. We can see now that as a matter of fact the estimate of the experts was entirely too conservative. For, as we are writing this book in the year of our Lord 1923, the population of Los Angeles is quite 600,000, and that in all likelihood it will reach 750,000 in 1925, the time fixed by the experts for it to reach 400,000.

It was in this critical year of 1905 that there came down from the snows of the high Sierras in the character of a Moses, an old-time lover and long-time resident of Los Angeles who had abandoned his old home town to devote his life to ranching far away to the north among the great mountain peaks of Inyo County.

This man was Fred Eaton, sometime city engineer and sometime mayor of Los Angeles.

The day that Fred Eaton came down from the mountains of Inyo to lay before the officials of Los Angeles his plan for a water supply is a day that should be set down in history. And Fred Eaton himself must be set down in history. His idea was to secure possession of the Owens River with its inexhaustible supply of snow waters from the high Sierras and divert its course through conduits over mountain and desert, a distance of 250 miles, for the relief of the city that was well beloved by him and that had heaped upon him its favors and its highest honors.

With the eye of the engineer, Fred Eaton saw that in former ages the Owens River had probably flowed along the eastern base of the Sierra Nevada, and had emptied itself into the Mojave Sink. A rock uplift, maybe a million years ago, had interrupted this flow and confined it to the

unfathomed basin of Owens Lake, from which today there is no known outlet.

In these statements concerning the Owens River Aqueduct, I wish to say that I am quoting freely, and frequently verbatim, from authoritative published documents.

Fred Eaton was convinced from long and careful study of the Owens River waters and the geological formations hedging it in, that the obstacles standing in the way of making the old river available as far south as the San Fernando Range, near Los Angeles, could be easily overcome by means of tunnels and siphons, and thus be delivered to the City of Los Angeles. He was also convinced that the project, if carried to a conclusion, would develop electrical power of immense capacity.

Permeated to the very soul with this great dream, Fred Eaton came on a fateful day to Los Angeles, and unfolded his vision to the devoted officials in whose hands the destinies of the city were then entrusted.

Eaton submitted his idea in the greatest secrecy. His consuming fear was that his great dream might become publicly known with the result that private commercial interests would seize upon it, and that the city—which meant all its people—would lose forever the one supreme opportunity which was its salvation.

Wherefore, with the utmost stealth, and as men going forth on a profound secret mission, the discovery of which would spell disaster, the city sent its engineers to examine into the whole project. And when the engineers had reported the project to be entirely feasible, the Board of Water Commissioners secretly acquired all the necessary options on land and water rights to safeguard the project from every conceivable angle.

The engineers estimated that to build the aqueduct an expenditure of $23,000,000 would be necessary. The tremendous cost, almost unparalleled in the history of American municipalities, and the boldness of the project—bolder than British dreams of Egypt—did not for a moment dismay the Los Angeles city officials. The officials knew their people—a people brave to do, and long used to big achievement. And they laid the project before the people with the utmost confidence as to what the answer of the people would be.

I well remember that great morning in the month of July when this thrilling dream of the Owens River for Los Angeles was first made public in the columns of The Times, where it was published exclusively. The announcement sent a wild thrill through the whole population. And no wonder. Here was deliverance and salvation. It was like that time in Canaan when Joseph's brethren came back from Egypt laden with corn to succor their famine-stricken homes.

I think it is safe to say that upon the first announcement of this great news there were no discordant voices in the acclamations of joy with which it was received. It is true that later on the project was bitterly assailed from various sources and by various selfish interests. Even to this day, indeed, there are to be found those who will say that the Owens River Aqueduct constituted an extravagant and useless expenditure of the people's money. There are those who say that a sufficient water supply could have been secured nearer at hand and at one-tenth of the expense of the aqueduct. But these carping criticisms are so childishly founded

and are voiced by those who are so comparatively outnumbered that they may be dismissed with scant notice. The proof of these statements lies in the fact that when the bond issue was submitted to the people for their approval on September 7, 1905, it was carried by a vote of approximately 15 to 1.

The engineers who surveyed and designed the aqueduct and later built and carried it to completion were William Mulholland, J. B. Lippincott and O. K. Parker. In the actual construction Mulholland and Lippincott were the active spirits, with Mulholland as the real head.

In passing, it would seem that more than this mere mention of William Mulholland should be made in these pages. In future generations it will be his name that will be most remembered when the people of the future recount with well-founded pride the achievements of the men who went before them in the building of their great city. In those times, if not now, some kind of lasting memorial in connection with the Owens River Aqueduct will be erected in honor of Fred Eaton and William Mulholland —the dreamer and the doer, the man who brought from the snows of the high Sierras the great dream, and the other man who caused the dream to come true.

It seems only natural that a city like Los Angeles should produce such men as William Mulholland. The city, besides being a most stupendous practical achievement, is also a romantic dream. And out of the romance of the town comes the romance of this man Mulholland, who rose from his humble station as the tender of its water ditches when it was a sleepy pueblo to become its chief engineer and to stand in the front rank of the world's greatest engineers when the city had come to take its place among the great cities of the world.

I have been told that when William Mulholland was a boy in Ireland, where he was born, he had a longing for the sea. And that he ran away from home, and that he was taken away on a ship, and that he held to the sea till he served at last before the mast and became a real sailorman; that then he abandoned his sea-faring life and came ashore in America and drifted westward with the restless tides that have ever drifted westward in human history and that are westward drifting still. Until one time, on a sunny morning when he was still young, he found himself in the pueblo of Our Lady the Queen of the Angels, where, happily, he decided to locate.

Mulholland secured a job as "zanjero," which was the old Spanish title given to the man who attends to water ditches. He lived by himself in a cabin beside one of the ditches which were under his care. He followed around about the pueblo on the trail of surveyors and the occasional engineers that the community from time to time employed. At night, in his cabin, he studied books—books on mathematics, surveyor's manuals and works on engineering. His brain was alert and his desire for knowledge of this special nature was insatiable. He plodded patiently and with undaunted courage. And, step by step, he rose in knowledge and ability and in the confidence of the people. He became superintendent of the city's water system. He became known far afield, and was frequently called into consultation to help other engineers solve big problems.

And the time came at length when his own city stood face to face with as big a problem as any city had ever faced in history—a problem requiring

the expenditure of $23,000,000 of the people's money. And without the least hesitation, without discussion whatever, the whole project was placed in William Mulholland's hands and he was told to go ahead.

Of course Mr. Mulholland was supported by the best advice available. Three of the most prominent engineers in the United States were at the beginning employed as a consulting board to thoroughly canvass the project. They endorsed Mr. Mulholland's report and pronounced his plans as being thoroughly feasible. It was then proposed that a bond issue of $23,000,000 be submitted to the voters, this amount to cover construction. The people, at an election held June 12, 1907, gave their approval to this proposal by a vote of 10 to 1.

The Board of Public Works then took charge of work and, in combination with the Water Board, worked out a plan and the details of the great enterprise. The plan in brief was: To take the water from the Owens River, 35 miles north of Owens Lake, carry it through an open canal for 60 miles to a large reservoir, the Haiwee, with a capacity of 20,000,000,000 gallons, then to carry it another 128 miles through combination of conduits, tunnels and siphons to a reservoir at Fairmont on the northern side of proposed tunnel through the San Fernando Mountains, the tunnel to be 26,870 feet in length and to be a pressure tunnel regulated by the reservoir at Fairmont. From the southern portal of the tunnel the water would drop from the rapidly descending San Francisquita Canyon, where big possibilities for power development existed, and by natural channels, tunnels, siphons and conduits, a distance of fifteen miles to the San Fernando reservoir and the upper end of the San Fernando Valley, a total distance of about 225 miles from the intake to the San Fernando reservoir.

It was realized that the long tunnel under the San Fernando Mountains would be the largest piece of work in connection with the enterprise, and this work was at once started, working from both ends.

The general water plan of the city is now laid down roughly as follows: The water now developed and carried through the aqueduct is sufficient to accommodate a population of some 3,000,000 people. The city has laid down the policy that no territory shall be given the use of its present surplus supply which is not prepared to amalgamate with and become a part of the city. Large areas now inside the incorporated limits of the city are still farming lands, and surplus water is used on these for irrigation purposes at rates which they can afford to pay. Rights have been obtained for additional sources of supply, and plans are made for their development for future use. Preliminary steps are even now being taken to reservoir the Long Valley, an immense area and catchment basin many miles north of the present intake of the aqueduct.

The whole enterprise constitutes a comprehensive plan fully capable, when finally worked out, of taking care of water needs of the city of any possible size in this locality. During its development there has, of course, been much opposition, and many legal difficulties thrown in its way, but these have been mostly overcome and it does not now seem possible that anything can mar the full realization of the plan.

So much preliminary work had to be done that little other permanent construction was under way before the end of 1908. The preliminary work

referred to was gigantic in its scope. A branch line from the Southern Pacific Railroad had to be built from Mojave up to the proposed line of the aqueduct to connect with the Owens River Valley. Hundreds of miles of road, pipe line, power transmission line and telegraph and telephone lines had to be built. Fifty-seven camps had to be established along the line, and all their facilities and equipment provided and installed. Provision had to be made for the vast quantities of cement needed for lining conduits and tunnels, and for this purpose the city bought thousands of acres of land in the Tehachapi Mountains covering the necessary deposits of limestone, clay, etc., and built a cement mill with a capacity of 1,000 barrels a day. Large areas of land had to be negotiated for and bought for the protection of water rights and reservoir sites, and the land so bought aggregated some 135,000 acres.

After general construction started in October, 1908, it was found that in nearly all features of the work the rate of progress was greater and the cost less than the engineers' estimates. Naturally, there were setbacks and delays such as are inevitable in all large works, but notwithstanding these, water was turned through the full length of the aqueduct and delivered at San Fernando on November 5, 1913, where its advent was hailed by a great outpouring of some 30,000 citizens who congregated to welcome the flood which insured the life of Los Angeles as a great city of the future. As it gushed from the mouth of the outlet, the chief engineer, William Mulholland, was called upon for an appropriate address to the assembled citizens. The address consisted of the remark, "There it is, take it."

A fitting finish to a work well conceived and successfully accomplished. When we speak of the aqueduct being completed and accepted by the city when its flow was delivered to a point at the head of the San Fernando Valley, it must be explained that this was considered a finishing of the aqueduct proper and the further connection to the existing city distributing system was apart from the building of the aqueduct itself.

As a consequence of the bringing of water to the city from Owens River Valley, and of hardly less importance than the water itself are the opportunities made available for electrical power development. In the fall of the aqueduct at various points on its southward course there is available for such power a total gross fall of over 2,000 feet. The general plans for the development of this power were recognized throughout the construction of the aqueduct and provision made to avoid duplication of work, and in September, 1909, the Bureau of Aqueduct Power was created as a part of the organization of the Department of Public Works. A consulting board of three eminent engineers was appointed to pass on the plans, to investigate all the power possibilities, and to advise as to the best methods of maximum development.

As a start for carrying out the power plans, a $3,500,000 issue of power bonds was authorized at election in April, 1910. But this bond issue was not available until two years later because of court proceedings brought to test their validity. Meantime it was realized that this first bond issue would serve only to build the initial plant for the development of a small proportion of the possible power, and if the greatest benefit was to be obtained power developed by the city must be distributed by the city.

Consequently, in May, 1914, an additional power bond issue of $6,500,000 was voted for the purpose of extending the development work and also for building or procuring by negotiation a distributing system in the city itself.

Los Angeles is already finding that her municipally owned, almost inexhaustible and cheap water supply, together with unlimited and cheap electric power, is to be the deciding factor in making of Los Angeles one of the large manufacturing cities of the United States. Other contributing factors, of course, being the climate, which makes almost continuous work possible, and the harbor, which provides shipping facilities to and from all parts of the world.

In the old days, Los Angeles, tied down by coal at $9 to $11 a ton, could not compete as a manufacturing city with districts having cheap fuel available. Then came the year of California oil development which reduced the price of fuel more than half, and manufacturing began to show its head as a possibility. Now the city is entering on its third year from the basis of manufactures, and power development and distribution now make possible successful competition in manufacturing with any city in the United States.

This, therefore, is practically the story of the Owens River Aqueduct. But the mere relation of the facts leaves out much that the imagination must supply. It was a bold stroke. Courage of the very highest order was necessary even to merely consider so gigantic an undertaking. It is not every city of the size of Los Angeles in 1905 that would have had the vision to go 250 miles afield over strange deserts and under mountain peaks to corral a river and lead it captive to its gates.

But it is achievements of this nature that have made Los Angeles what it is today and what it is to be tomorrow.