

THE GREAT ARROWROCK DAM

By M. F. CUNNINGHAM

Boise, Idaho, Sept. 23.

ARROWROCK at one time served as a bulletin board for the Shoshone and Snake Indians. It was a bold knob of granite jutting out over the trail that crept through the canyon along the Boise river. By shooting arrows into the crevices in the face of the rock at different angles Indian scouts told their followers which way they were headed. It was a well known landmark for centuries.

Today on this spot stands a concrete dam the highest in the world, 348.5 feet. The Arrowrock of the Indians is gone, but in its place is a monument to mark the onward march of civilization in the west.

Photographs of this dam fail to do it justice. The great mass of the concrete is out of sight. To build the dam and make it safe it was necessary to go down through the volcanic rock for a distance of 91.5 feet below the bed of the river and lay the foundation in the solid granite.

While construction work was in progress the river was diverted through a tunnel on one side of the canyon and coffer dams above and below held back the water while men worked in the great excavation far below the bed of the river.

Arrowrock dam as it stands completed is 240 feet thick at the base, 16 feet at the top and 1,060 feet long with a fine driveway across the top decorated with electric lamps. In its construction 530,000 cubic yards of concrete was used, enough to build a shaft 10 feet square and 27 miles high. It is estimated to weigh 1,000,000 tons. Placed on wagons, one ton to each load and allowing 20 feet for each team and wagon, this would make a train 3,787 miles long, reaching from San Francisco to New York and back again as far as Cleveland, Ohio.

By throwing a dam across the canyon at this point the channel of the Boise river is converted into a reservoir running back 18 miles into the hills and with a maximum depth of 260 feet at the dam. The Boise river has a watershed of 2,610 square miles, more than twice the area of Rhode Island, and it is from this the reservoir will draw its supply. Here is to be stored each year for irrigation 244,000 acre feet of water. This is enough to cover fifty square miles of Salt Lake City to a depth of seven and one-half feet.

When the officials of the United States Reclamation Service came upon the ground they found the natural flow of the Boise river in summer appropriated to the last gallon. But in winter and early spring there was a torrent running off to swell the volume of the Snake and the Columbia. The problem was to capture this flood, hold it back until needed for irrigation in the hot, dry summer months and then pay it out as a banker pays out cash.

In this sense Arrowrock dam serves as a vault door to a mighty reserve bank of liquid millions.

By storing this water in this way 234,000 acres of land in the Boise Valley is converted from barren, sagebrush desert into fruitful gardens, orchards and farms. The project includes in addition to the dam Deer Flat reservoir made of a large low tract in the center of the project; a complete system of canals; a drainage system; power plant; telephone system and all necessary minor dams and locks.

This piece of government work has cost \$12,000,000, the price of one battleship. This reference to a battleship is hardly fair, however, because the settlers will return the \$12,000,000, to the government in twenty annual payments for water, and the project will add to the permanent wealth of the nation, more and more each year.

The dam alone cost \$5,500,000. It was started in 1911 and is finished more than a year ahead

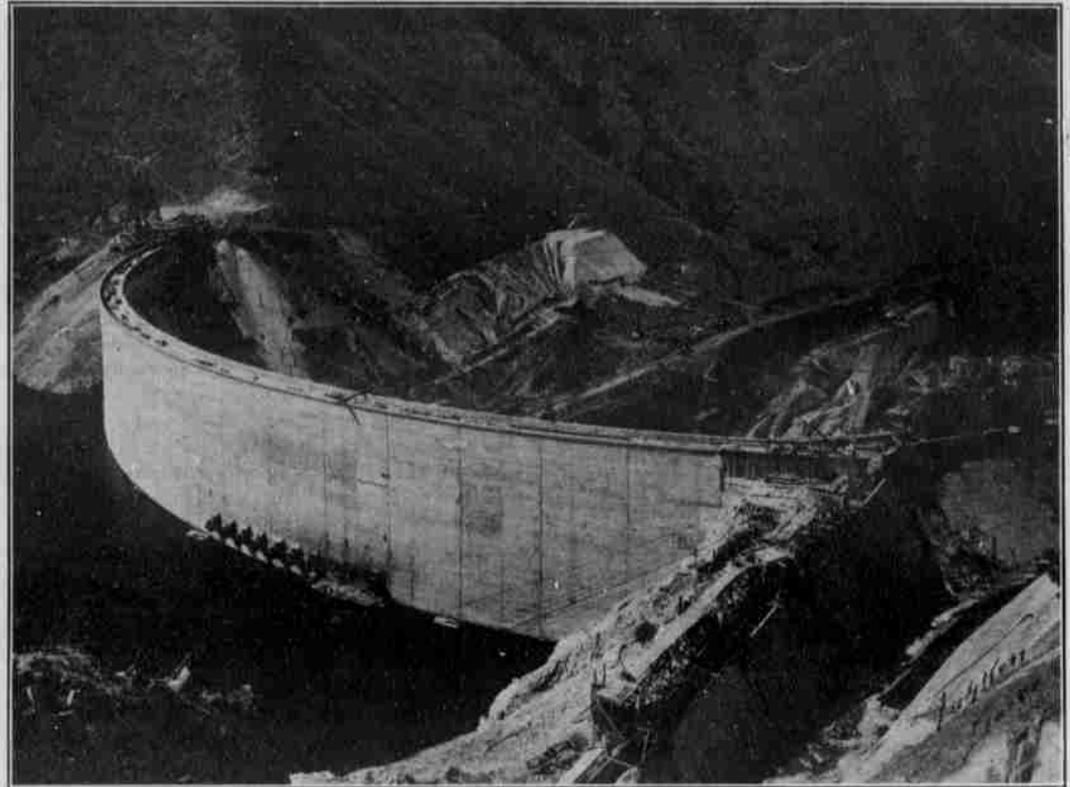
of the time fixed at the beginning. This saved the crops this year, the driest on record in southern Idaho, on 100,000 acres and practically paid for the dam. The early completion of the dam and at a cost \$2,000,000 less than the estimate must stand to the credit of F. E. Weymouth, the supervising engineer, Charles H. Paul, the constructing engineer, and James Mann, the superintendent of construction.

In the Boise Basin above Arrowrock is 3,000,000,000 feet of merchantable timber. It is owned for the most part by the Boise-Payette Lumber company and the federal government. As the lumber mill is below the dam, at Barber just outside of Boise, the logs must be lifted over the dam after floating down in the reservoir. At one

end of the dam has been constructed an ingenious device for lifting the logs from the reservoir to a platform on the top of the dam, carrying them to the other side and releasing them into a chute that lands them in good condition in the river below.

This must be done when the water in the reservoir is within forty-five feet or less of the top of the dam and it is estimated that 60,000,000 feet can be thus handled each year. At this rate it will take fifty years to complete the job.

At the other end of the dam is the spillway with gates that work automatically so that there is never danger of the water in the reservoir rising too high. This spillway pours the surplus into a gorge below from which it flows back into the



ARROWROCK DAM 22 MILES ABOVE BOISE, IDAHO, 348.5 FEET HIGH, IMPOUNDING 244,000 ACRE FEET OF WATER FOR THE RECLAMATION OF 234,000 ACRES OF LAND IN THE BOISE VALLEY

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The Newhouse Hotel will give Particular Attention to Special Parties, Luncheons, Dinners, Banquets, etc. Menus and Prices will be Submitted upon Request. Our Policy is Courtesy and Perfect Service. Special Rates will be made for Winter Apartments.

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