ARROWROCK DAM
NEAR COMPLETION

Highest Dam In The World
Built Under The Charge Of
Technology Man.

The Arrowrock dam near Boise, Idaho, of which Charles H. Paul, '96, Consulting Engineer, has been in service during the irrigation season of 1915. This dam provides for the control of water for use in the irrigation of lands adjacent to Boise, Nampa, Caldwell and other towns within the limits of the Boise Project of the United States Reclamation Service.

The Arrowrock dam is the highest in the world, having a height of 348.5 feet from the lowest point in the foundation to the top of the parapet. It is 1160 feet long on top, contains 658,509 cubic yards of concrete, and its crest carries a roadway 16 feet wide. The dam has a gravity section and is built on a curve of 660 feet radius. The spillway consists of a run 400 feet long and a concrete-lined discharge trench approximately 900 feet in length, with a capacity of over 25,000 second feet. In the run and trench lining are 2,510 cubic yards of concrete, all of which is reinforced. The spillway run carries a movable crest, of unique design which permits the storage of water six feet higher than the fixed crest, but drops automatically again when the flood has passed. A low conveyor with a capacity of 1,000,000 feet per day permits the passage of logs to the mills below. The logs are hoisted to the top of the dam by a cable lift and taken to the river below the dam through a reinforced concrete chute 650 feet long, the upper 400 feet of which carries a bull chain with spurs or teeth set to hold against sliding. This carries the logs down a 2.12 percent slope and delivers them to a gravity chute through which they pass to the river. It is estimated that there is in the lower bull foot of timber in the Boise Basin above the dam that must be handled in this way.

Preliminary to the construction of the dam it was necessary to construct a standard gauge railroad 17 miles long from Barber Junction on the Oregon Short Line to Arrowrock. This railroad has been in operation four years, and in that time it has carried 86,000 passengers and about 34,000,000 tons of freight. It is the only railroad in the country operated by the federal government and all tickets carry the signature of President Woodrow Wilson in facsimile.

A 3000 horse-power hydro-electric power plant was built to furnish power for the operation of the construction plant. This has furnished all the electric power needed for construction purposes, and in addition considerable of its surplus output has been sold to local residents. Its total output since May, 1915, has been almost 20,000,000 K. W. hours.

A sawmill was operated for almost two years in the timber about 17 miles above Arrowrock, and this furnished 6,750,006 feet, board measure, of lumber, all of which was used for the building of the construction camp at Arrowrock, and to fill miscellaneous requirements on the work.

The excavation for the dam extended 90 feet below the river bed to the granite foundation, and a diversion tunnel 500 feet long with a cross section of 30x25 feet carried the river around the work until the construction was far enough advanced to start the storage of water.

Resulting outlets in the dam are 20 in number, each being four feet and four inches in diameter. They are controlled by a 6-inch balanced needle valve on the upstream face of the dam. They are arranged in two sets of 10 each, the upper set being 150 feet above the river bed. Five sluicing outlets, each controlled by a 5×5 foot sliding gate, are also provided at river level. All these outlets are operated from control chambers inside the dam.

A system of inspection galleries of which the control chambers are a part give access to the dam at several elevations, the lowest of which is 230 feet below normal high water surface in the reservoir. The capacity of the reservoir is 241,500 acre feet, or about 76,800,000,000 gallons. This reservoir is 18 miles long and extends up two forks of the river. When needed for irrigation the water is carried down 12 miles in the channel of the river to a low diversion dam and from there taken out over the land through a network of canals and laterals. In this way 234,000 acres of sagebrush desert is to be converted into gardens, orchards and farms.

The excavation amounted to 682,700 cubic yards, 1,250,000 pounds of reinforcing steel were used, and the rates and structural steel work required $1,000,000.

FRESHERN TO MEET
IN HUNTINGTON HALL
President Maclaurin To Address
The Class—Plans For
Field Day.

Today at one o'clock (Huntington Hall the first meeting of the Class of 1919 as a body will be addressed by President Richard C. Maclaurin. Following this the meeting will be turned over to Walter Harrington, '17, the Temporary Chairman of the freshman class, who will explain the plan of government for entering classes as adopted and used for the first time with the 1918 class. The matter of the adoption of the uniform class constitution will be brought up.

Announcements will be made concerning the various Field Day teams and the time at which candidates can report for them as well as plans for the freshman dinner.

RIFLE CLUB NOTICE

The first meeting of the Rifle Club will be held Thursday afternoon at 4 o'clock in 26 Rogers, for all men except freshmen. The following Wednesday afternoon a meeting of all freshmen interested will be held immediately after drill in the armory.