

INDIA TO BUILD MASONRY DAM WHICH WILL ECLIPSE ANYTHING OF KIND IN THE WORLD

Washington, D. C., October 6—Construction of a masonry dam in India which will be largest of its type in the world, is described in a report by the United States Bureau of Reclamations of Washington. The report states that the new dam presents many interesting comparisons with similar work in the United States.

The dam is part of the Cauvery-Mettur irrigation project in India. Construction of canals for the project is giving employment to approximately 6,000 Chinese unskilled workmen and 600 artisans it is stated. The unskilled are paid approximately 18 cents for working an eight and one-half hour day, while skilled laborers and mechanics receive from 45 to 90 cents a day, according to the report.

No labor difficulties arise, the report says, except when outbreaks of cholera prevail, when the workmen leave.

The Cauvery-Mettur irrigation project now under construction in the Madras presidency presents several interesting comparisons with similar work in the Western States of this country, the report says.

Adds 301,000 Acres

The project is limited by an agreement with the Mysore presidency to an extension of 301,000 acres of new irrigation to the existing 1,000,000 acres of delta land, and the reservoir is limited to a capacity of 2,150,000 acre-feet. A 70-mile canal, 180 feet wide, will be constructed to carry water to the new lands on the Tanjore plains. The canal system will cost \$7,200,000, of which about \$3,000,000 already has been spent.

In the construction of the storage reservoir, which will form a lake of 59 square miles in area, a dam containing 2,850,000 cubic yards of masonry will be required. This will be the largest masonry dam in the world, exceeding the Muscle Shoals Dam in Alabama with its volume of 1,400,000 cubic yards.

As the building of this immense structure requires a large labor force and since the Mettur Valley had a bad reputation for malaria, a healthful location for the camp was necessary. A camp was completed in 1928, which now has a population of 14,000. It contains office buildings, magisterial and po-

lice buildings, hospital, health laboratory, a filtered and chlorinated water supply and drainage and electric lighting systems.

50 Miles Of Roads

Fifty miles of bridged roads for heavy traffic have been built and about 50 miles of narrow-gauge railroad with a railroad bridge over the river. Twenty-six locomotives and 1000 cars comprise the railroad equipment. Other buildings include a workshop, locomotive repair shop, storehouses and a power house, with a connected load of 6,000 horsepower which is obtained from Sivasamudram by a 62-mile transmission line. Three batteries of stone crushers are used, having an output of 3,750 tons a day.

Those is an excellent rock foundation. Placing of masonry was begun in July, 1928. Two steel towers, 306 feet high are being erected each capable of pouring 1,600 tons of concrete in a day of 10 hours.

Weigh 1,400 Tons

Each tower weighs about 1,400 tons and travels along rails along the downstream toe of the dam, and can build a length of dam, 126 feet moving position. They form the principal part of the construction plant and are unique in engineering practice. Materials arrive by train, at the foot of the tower, are tipped into cars which hoist them 70 feet, where they are distributed into bins.

Below the bins is apparatus for measuring out exact quantities of materials and water into concrete mixers. Each mix is discharged into a skip which is then raised the required height to pour into a hopper at the top of the chutes, down which it flows into place in the dam wall. The explosive used for quarrying and excavation is liquid oxygen.

The Mettur Dam is about exactly the same in section as the New Croton Dam in New York, built about 30 years ago. In design the dam has been made safe for a stress of 10 tons per square foot.

The quantity of cement to be used is estimated at about 170,000 tons and will cost \$3,240,000. Outlet pipes will be placed in the dam and when a market is available it will be possible to generate a minimum of 15,000 horsepower the year round.

an engine using 35,000 cubic feet of water per second. Such an engine, he says would furnish a 300,000 horse-power.

The cost of the plant would about equal the cost of the modern hydro-electric plants, with their dams etc.

Is Famous Inventor

This plan for getting unlimited power from the sea—a plan that sounds almost like perpetual motion—is only one of many intricate problems Claude has applied himself to in his busy career. In his boyhood the remarkable fictional inventions of Jules Verne captivated him and as a man he has sought to match these imaginative inventions with real ones. He has succeeded so well that today there is more than \$150,000,000 invested in his inventions.

The U. S. Government's enormous accumulation of nitrogen apparatus at Muscle Shoals, Ala., is based on a process he devised. Nearly every big chemical plant in the world is indebted to him for some method now in daily use.

It was Claude that learned how to get Neon gas from the air—and who showed what could be done with it once it had been extracted. The bright Neon lights that are common features of modern cities are due to Claude's research.

Developed Acetylene Gas

It was he that changed acetylene from a costly laboratory curiosity to a cheap commercial product and thus brought on acetylene welding.

Claude is also famous for having devised a process for the synathetic manufacture of ammonia. Incidentally, the trans-Atlantic telephone and telephoto process by which pictures are transmitted by wire use neon tubes as an integral part of their machinery.

During the war Claude was busy in the service of the French Government. He mixed liquid oxygen with lamp-black to produce a powerful explosive. It was so dangerous that its use was not allowed, but Claude enlisted and used such bombs himself. He perfected a device by which airplane observers could locate enemy batteries through sound waves. He was able to liquify chlorine gas for the manufacture of poisonous gas shells. These feats won him the order of Legion of Honor.

His plan for generating power from seawater, however, may prove more revolutionary than all the rest of his discoveries. Places like Cuba and Florida might become industrial centres, if his idea turns out to be as practical as he believes it will.

SCOTCH MILKMAN KNOWS HIS REAL JARS

(New York Sun)

"My wife tells me that there is a little bit of Scotch in our milkman," complained Mr. Capper, "and here's what makes her think so:

"When she has one she takes an empty milk bottle and puts it on the dumbwaiter with a note stating how many quarts of milk we need the next morning.

"Recently she didn't have an empty, so she used a mayonnaise jar as a holder. Next morning she noticed that the jar was gone and she concluded the milkman had taken it.

"A few days later, again being without an empty, she put the note in an empty ammonia bottle. But that bottle remained on the dumbwaiter the next morning, although the note had been taken out of it and the order filled in accordance with instructions.

"So the other morning, to test out the system, my wife took a jelly jar and put the milk note in that. The jar was worth about a cent, but in spite of its small value it was not on the dumbwaiter in the morning. Nor was it in the cellar either, proving that the milkman overlooks no bets in his morning rounds."

HORSE SHOES PITCHED AT NIGHT

Hosack Falls, N. Y., Oct. 6—If golf or baseball can be played at night, there is no reason why horse-shoes can't be pitched under flood-lights. Thus reasoned the equine boot hurlers of this place, and now they're doing it.

A FRENCH SCIENTIST IS TRYING TO HARNESS THE SEA SO IT WILL DO THE WORK OF THE WORLD

Havana, Cuba, Oct. 6—Prof. Georges Claude, the busy French scientist who believes he can put the warm waters of the Gulf Stream to work for mankind on a large scale and who has spent most of his life prying into the obscure corners of the domain of science, may at last be on the verge of far reaching consequences.

Claude is now close to the point where he can learn definitely whether his scheme to generate power from the sea is practical. He has succeeded in sinking a mile-long tube into the sea at Mantanzas, after spending a million dollars in three attempts. He is confident that the result will be the revolutionary development of industrial engineering.

If he succeeds it will mean that the human race is forever freed of its fear of exhausting its supplies of fuel. It may mean a new economic order and industrial upheaval.

How Plan Works

Prof. Claude's scheme, puzzling to the average newspaper reader, is after all, very simple.

"There are two water supplies of unlimited quantities and unvarying temperatures throughout the year in the tropic oceans," he explains. "There are the surface waters that maintain the temperatures varying from 79 to 86 degrees Fahrenheit; then the icy waters found beneath the surface at a depth of 1,000 yards or more, of a constant temperature of 40 degrees F.

Temperature represents energy and so this difference in temperature levels

represent a supply of latent energy which Claude proposes to tap.

Claude proposes to harness the tropic ocean on a principle similar to that on an ordinary steam engine, but in a steam engine the water is boiled and turned into steam by heating it with fire. Claude proposes to do it by substituting a vacuum for fire to warm surface waters into chambers in which a vacuum has been created. The boiling point of water depends entirely on air pressure. Water for example boils at 212 degrees at sea level, but at so low a temperature on a high mountain that it is not sufficiently hot to boil an egg.

Boils at 78 Degrees

The vacuum, says Claude, will cause the surface water to boil at 78 degrees. The steam thus formed would be used to turn a turbine.

From the turbine the steam would pass into a condenser. Here is where the mile long tube comes in. This tube, extending to the depth of the sea, would bring water at a temperature of 40 degrees. This cold water would then be turned into the condenser.

This would then condense the steam. The condensation of the steam (contraction) would create a new vacuum, causing more water to boil or turn into steam, and so, according to Claude, the engine would keep itself in operation indefinitely.

Claude says that each cubic foot of water will furnish 17 pounds of steam and that it is feasible to build

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