

28th JUNE, 1913.

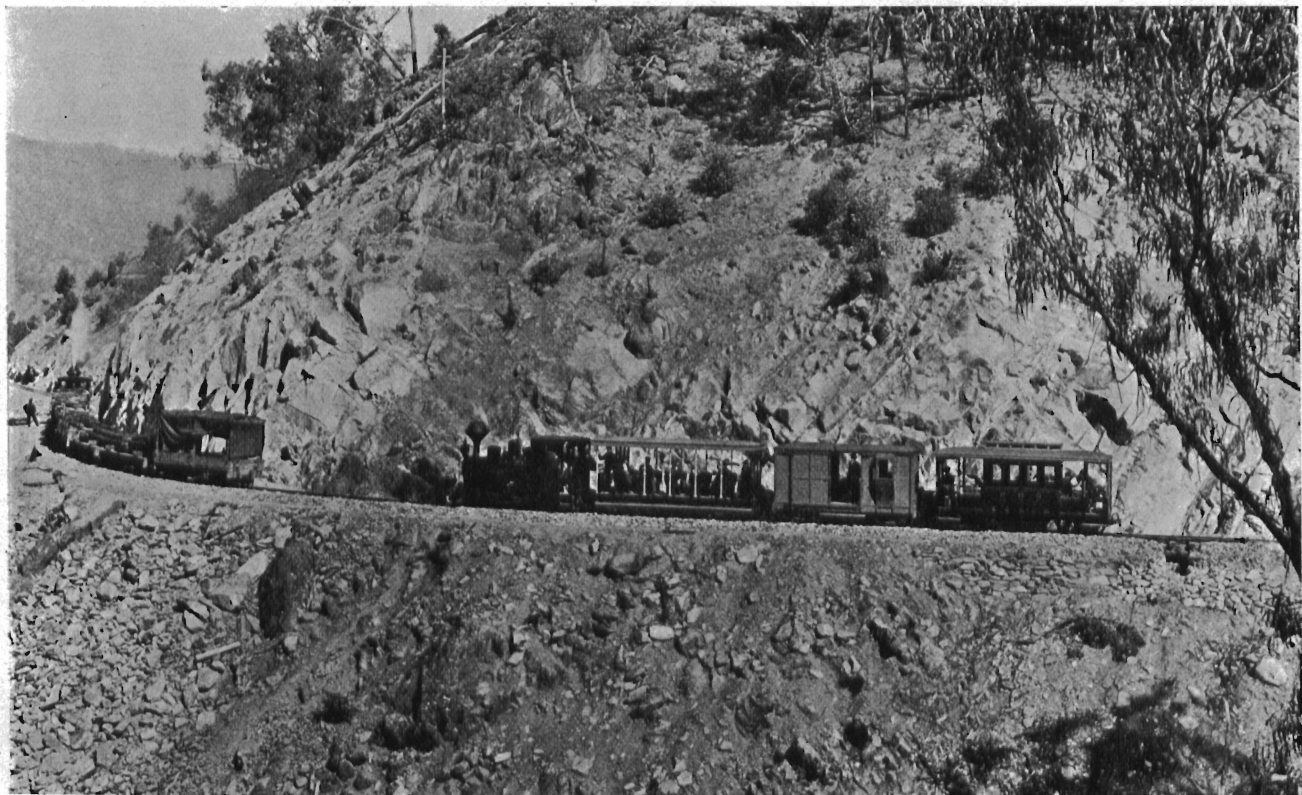
## VISIT TO BURRENJUCK.

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At the suggestion of Mr. Bates, Member, and Engineer for the Contractors, a visit was made to the Burrenjuck Dam on the above date. A party of about 70, mostly Members of the Association, and their friends, left Sydney by special train on the evening of the 27th, and reached Goondah Siding early in the morning of the 28th. It was the intention of Mr. L. A. B. Wade, Commissioner for Irrigation, to accompany the party, but at the last moment he was unable to do so. His chief assistant, Mr. Dare, however, took his place, and it was largely due to the assistance of Messrs. Wade and Dare that the trip was so successful. The party left the main line and transferred to the narrow gauge railway connecting it with the Dam, the site of which was known in the past by the local name of Barren-Jack, a name which was ultimately changed to the correct one, viz., Burrenjuck; Barren-Jack being a corruption of the native name which identified the highest hill in the vicinity of the storage site. The gorge of the Murrumbidgee, where the Dam is being constructed, and the valley of the Goodradigbee, where the water will be stored, form one of the most beautiful spots in the State.

### NARROW GAUGE RAILWAY.

This is of 2ft. 0in. gauge, and from the Main Southern Line to the Burrenjuck Storage Dam the distance is 28 miles. The first 16 miles runs through comparatively uninteresting country, but after passing out of this the railway enters Carroll's Creek Gorge, where a most picturesque view of the valley presents itself. The rail-



way then follows a very devious course, practically clinging in most parts to the sides of the Gorge itself. The railway having been made as cheaply as practicable, there are no deep cuttings or tunnels, so that in following the natural formation of the country, the line is carried along narrow ledges cut out of the hill side. A typical illustration of the line is given in the following figure, No. 1. At the point where Carroll's Creek Gorge opens out into the valley a glorious view is exposed to the traveller. On account of the narrow gauge there are many sharp curves, some as little as 100ft. in radius, whilst grades of from 1 in 70 to 1 in 100, are common, and in some places as much as 1 in 35. The locomotives in use have 6in. x 12in. cylinders, and the maximum speed appears to be about 15 miles per hour.

#### POWER HOUSE.

This is situated on about the only available site, near the Dam wall on the up-stream side. Steam is supplied by a battery of Babcock & Wilcox boilers using wood fuel, and the steam units consist of two 200-h.p. Parsons, Sims & Jefferies engines direct coupled to Parker Generators; these are for power only, as there are several smaller sets for lighting. Compressed air is delivered, at 70lbs. per square inch, to the drills by a horizontal two-stage compressor belt driven by a 150-h.p. Kerr Motor.

#### GANTRIES.

There are three of these on each side of the Gorge, situated on ledges cut in the mountain side, and their bases are about 400ft. above the river bed. The three on the northern, or working side, are capable of being traversed some 60-80 yards, so that the flying-foxes may be drawn over any part of the Dam. A view of the gantries is shown in the following figure, No. 2.

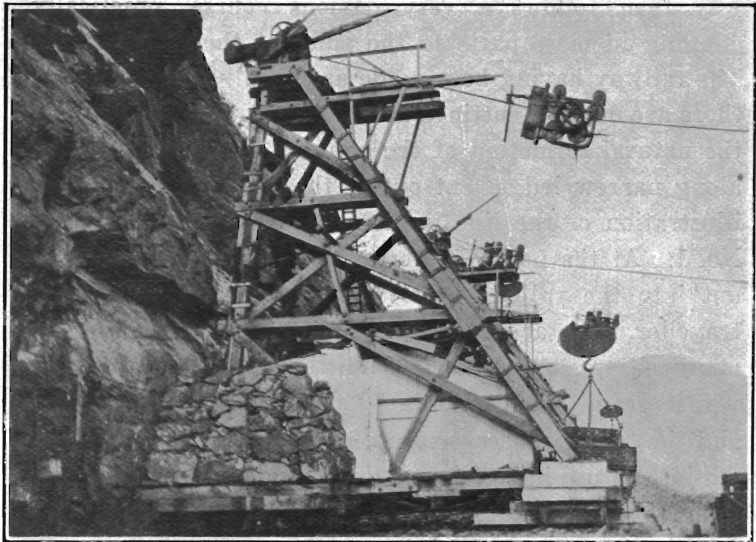


Fig. 2.

### FLYING-FOXES.

These are also illustrated in Fig. 2. They are each capable of lifting weights up to 15 tons, suspended from  $4\frac{1}{2}$ in. steel cables stretched from gantry to gantry, a span of 1100ft., or nearly a quarter of a mile. These cables merely support the load, and to operate each flying-fox two other cables are necessary, one for lifting and the other for traversing.

### MIXING PLANT.

Immediately below the gantries, and situated on another ledge, is the concrete mixing plant, an illustration of which is given in Fig. 3. There are three mixing units; on the top floor are the breakers; on the floor below, the measuring boxes, and below these the mixers, which discharge into special hopper trucks which are run out under the gantries to be picked up by the flying foxes. At present the stone is being elevated

from a quarry below to the top platform by means of a crane situated thereon.

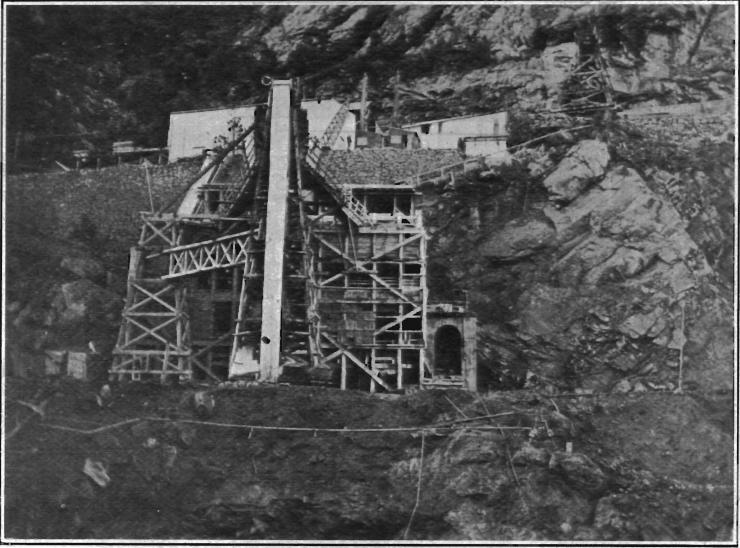
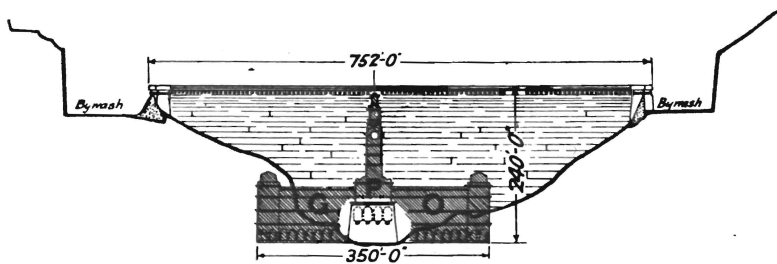


Fig. 3.

The hopper trucks each hold about 8 cub. yards, and when loaded weigh approximately 14 tons; they are made entirely of steel, and hung in such a way that when a pawl is knocked out, the charge is tipped out, and the hopper returns to the horizontal position again.

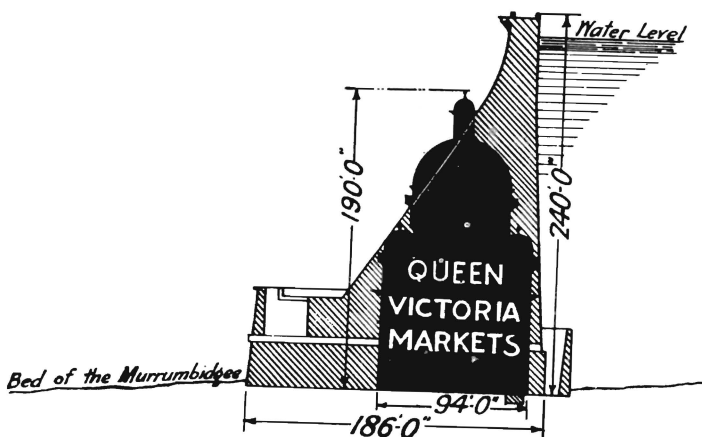
#### DAM WALL.

The construction of this gigantic storage wall was, of course, the most interesting feature to the visitors, for it will rank, when completed, as one of the biggest dams in the world, both in regard to the height and the volume of water impounded. The maximum height of the wall will be 240ft., and to give a better idea of what this actually represents, the next view, No. 4, shows the relative size of the wall as compared with the General Post Office, Sydney. Then, to also give one



COMPARISON OF LENGTH AND HEIGHT  
DAM WALL & G.P.O. SYDNEY, N.S. WALES

FIG. 4.



COMPARISON OF WIDTH & HEIGHT  
DAM WALL & QUEEN VICTORIA MARKETS.

FIG. 5.

a better idea of the depth of this huge structure, another view, Fig. 5, shows how the Queen Victoria Markets could be placed in the interior of the storage wall and be almost lost to view. The wall itself is constructed of Cyclopean Concrete, i.e., cemented concrete work with large stones up to 15 tons in weight embedded in it. The concrete work will absorb over 50,000 tons of cement,

the whole of which is being made and supplied locally. It is estimated that the dam will result in the storage of some 33,000,000,000 cubic feet of water, or, to again quote a popular comparative figure, "more water than is contained in the whole of Sydney Harbour."

The following four views will further illustrate the construction of the Dam, No. 6 being a view at close

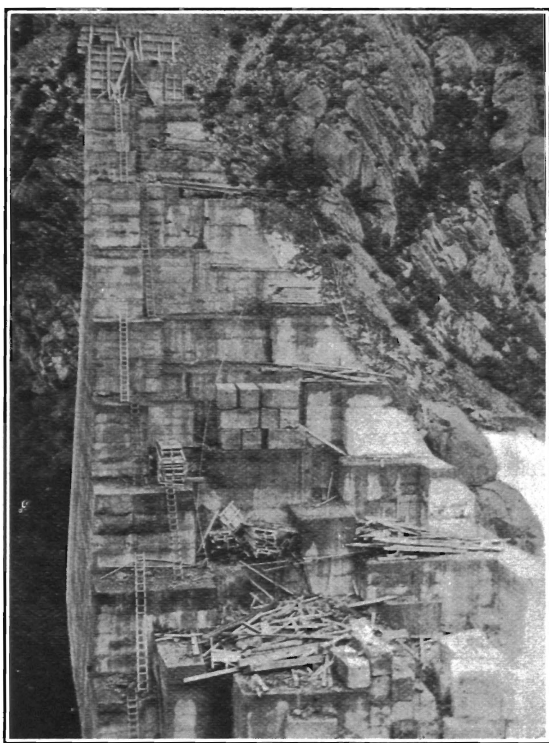


Fig. 6.

quarters, showing the section of the Dam. No. 7 is from a photograph taken some time ago, with the water flowing over the Dam. No. 8 is a view taken at the time of the visit, when the river was still in flood, and the outlet valves being insufficient to carry off the flow, a

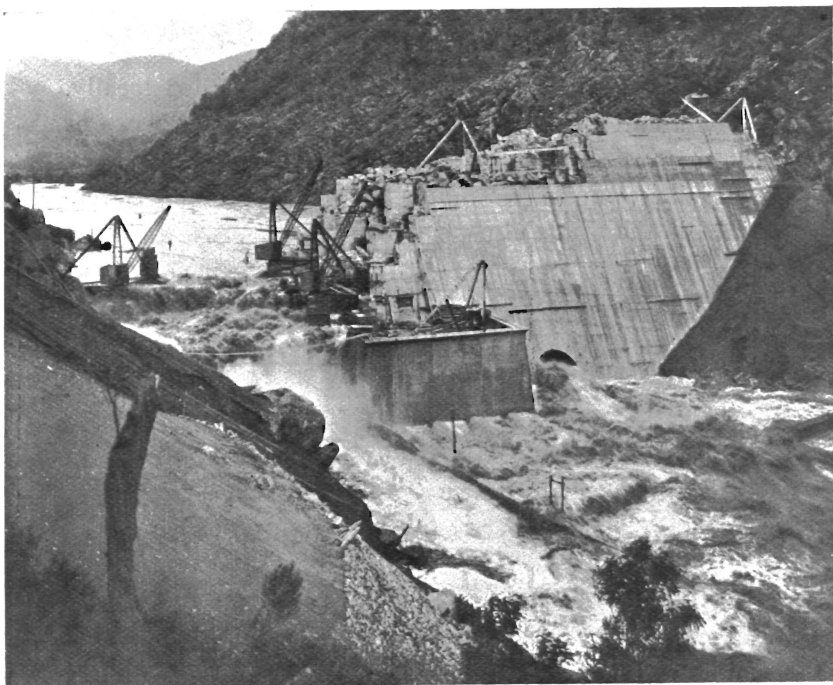


Fig. 7.

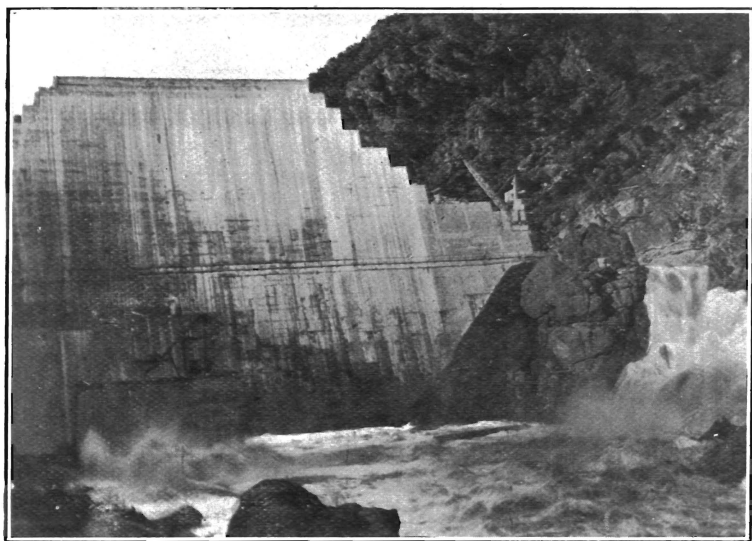


Fig. 8.



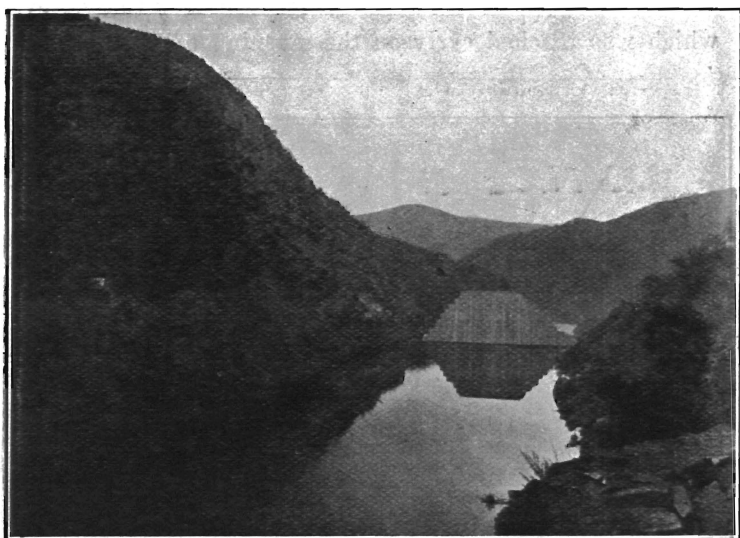


Fig. 9.

large quantity was discharged at the end of the Dam, while the last figure, No. 9, is a distant view, looking down from the up-stream side, and will show that although the dam itself is of such large dimensions, the ruggedness of the country on either side of it seems to render it almost insignificant.

The Valve Chamber, situated at the foot of the wall on the down-stream side, has four compartments containing the sluice valve gear. There are four 4ft. 6in. pipes, each of which is controlled by two valves. At the time of the visit the river, as already indicated, was in flood, and all eight valves were opened full. The next figure, No. 10, is a striking view of the water issuing from these outlet valves.

The party, favoured with fine weather, spent the whole day at the Dam site, returning to Goondah late in the

-evening, the special train conveying them back to Sydney, which was reached early on the morning of the 29th.

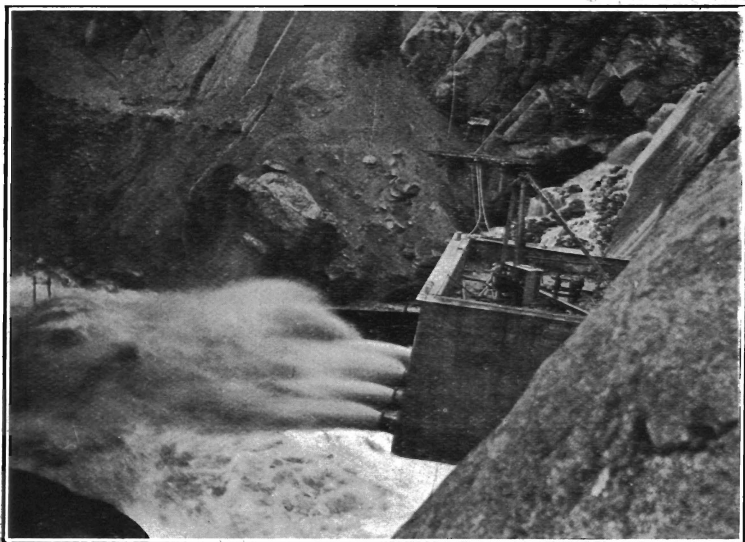


Fig. 10.

NOTE.—Most of the views given in this short description were taken by Mr. H. A. Holliday, member.

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