river was lower than at any season previously observed. The variations in flow of the river are very great, but no measurement of maximum flow has been made as far as is known. The periods of high and low water differ from those of rivers not situated in mountainous country, and, in the case of the Kootenay River, which largely depends for its supply from the masses of melting snow on mountains of great altitude, the high water period is comparatively late in the season, highest water being in June and July, as shown on the diagram No. 1.

The power development herein described was built at the Upper Bonnington Falls, the lower falls having been partially developed some years ago by the same Company. The site for the development of the upper falls was chosen on the north bank of the river, and is generally shown on accompanying diagram No. 2.

The channel between the Rocky Island and the north bank was made use of for approach and tail race; the power house was built in the river, and a cofferdam was built from the bank to the island, thus unwatering the whole site and diverting the water to the south of the island. Although the natural channel assisted materially in the development work, yet about 40,000 cubic yards of rock had to be removed to provide power house foundations and tail race. The removal of this rock was somewhat difficult, owing to the confined area in which the work had to be done, the difficulty of disposing of it, the nature of the rock (Nelson Granite) and the irregularity in direction of the seams in the rock, some of which had to be excavated under water. As a large part of the concrete work admitted of the use of large stones, those most suitable for the work were piled up in convenient places for this purpose, and a large quantity was passed through crushers and used in the concrete.

By referring to diagram No. 1, it will be observed that the variations between high and low water above and below the falls do not correspond. The reason for this is, that at present the flow of the river below the falls is restricted by a number of rocky islands. These hold back the flow of the stream, but it is the intention to improve this channel, so as to afford more channel area and more nearly equalize the rise and fall below the falls with the rise and fall above them.

Owing to these variations, which can never be entirely eliminated (except at a cost beyond commercial practicability), the vertical type of wheel setting was adopted, using all the head available at all stages of water, instead of adopting a head which would be nearly constant and which would involve the sacrifice of a large amount of power for periods when low water prevailed.