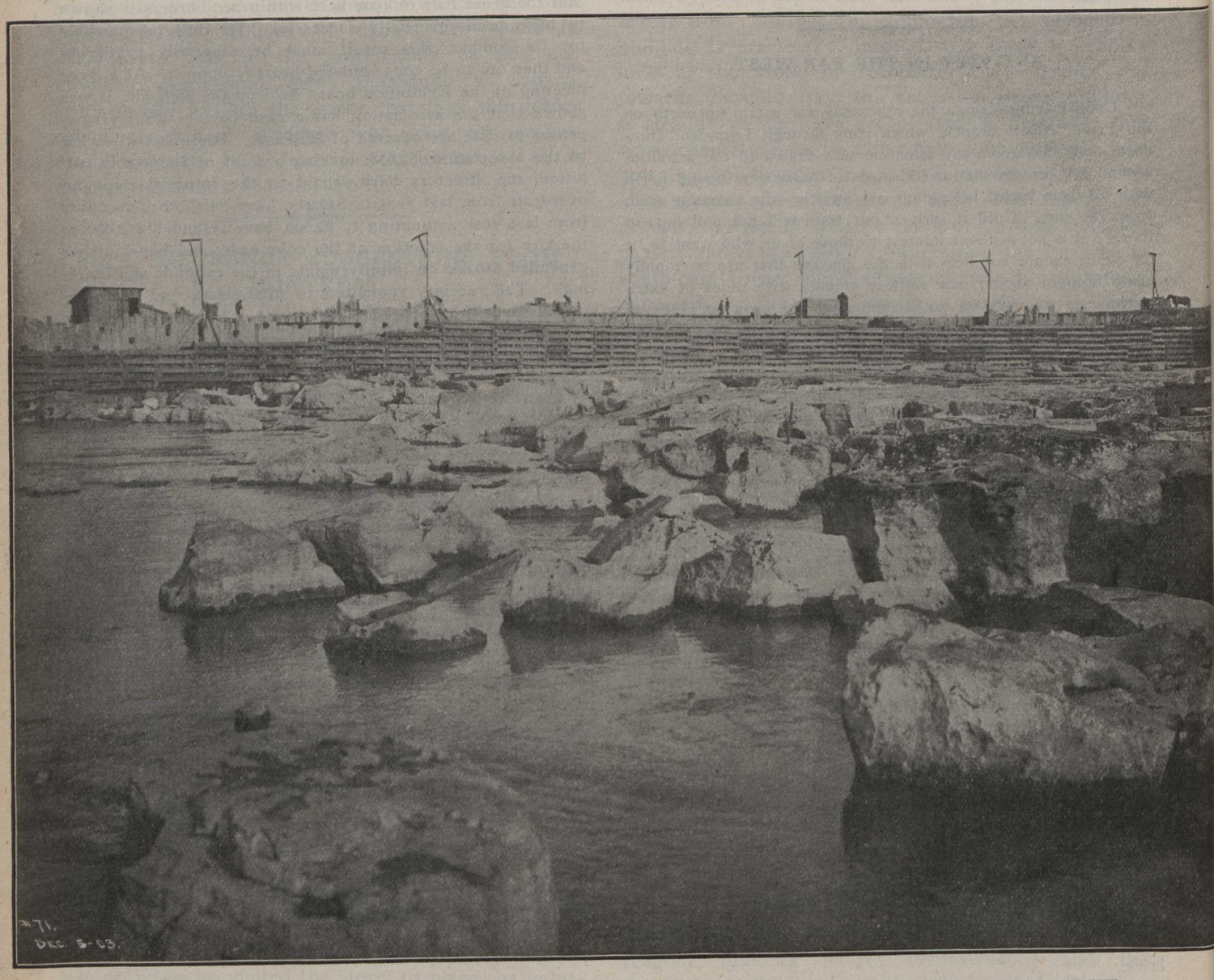
hundred yards from the shore the work was comparatively easy, and the cribs were built into position.

Then the work got out to where it had to be carried on at right angles to deep water flowing at a high velocity. This was a most difficult business. A platform was suspended out for sixteen feet from the end of each last crib, and standing on this the engineers had to sound every inch of the river bottom with an iron rod, the cribs being built to fit afterwards. An idea can be gained of the force of the water when it is mentioned that frequently the sounding rod was bent almost at right angles. And an idea of the character of the bottom can be gathered from the photograph of the river bed, taken when unwatered. This curious-looking piece of the earth's surface is where the fierce Cascade Rapids used to toss their manes in air before the crib work at top of the

after day by the workmen on this exposed crib-work equal in daring if not in agility the world-renowned feats of Blondin on the tight-rope a mile below.

That this perilous work was done so successfully is a testimony to the ability of Mr. Hugh L. Cooper, the chief hydraulic engineer, and Mr. Beverley R. Value, the resident engineer. It is certainly an undertaking as great as has ever been designed or constructed in that line of work. While there are many novel engineering features about the enterprise, the general plan does not partake of the experimental, but follows the best engineering precedents, with such variations as failures and partial successes elsewhere have dictated.

About two thousand feet above the crest of the Falls an immense hole has been sunk into the solid rock for the wheel-



BED OF THE CASCADE RAPIDS, BETWEEN THE MAIN AND SUBSIDIARY COFFER DAMS. THE DEPTH OF WATER AT THIS POINT WAS FOURTEEN TO FIFTEEN FEET.

picture was put down. What look like boulders are not boulders, but jagged parts of the rock which have been hollowed out into these curious shapes by the action of rapid water for many thousands of years. Behind the crib-work in the distance are the boiling rapids, fifteen feet deep; and they boiled just as deep over the rocks in the foreground of the picture before this crib-work was put down.

It is an instance of how not only man but animals can get accustomed to gaze upon the most appalling sights of Nature unafraid, to see that old horse at the upper right-hand corner of the picture quietly munching his oats on the coffer-dam, with deadly rapid water within three feet of his nose on one side and a gulf of grotesque rock-masses twenty feet below him on the other. Some of the feats performed day

pit. This huge incision into Nature's side is 415 feet long by 25 feet wide, and at present is 120 feet deep. When completed the bottom, on which the turbines will rest, will be 150 feet below the original surface. The formation of ice during the winter months is one of the serious problems which confront the hydraulic engineer at Niagara Falls. The site selected for the power house is believed to offer less trouble from this cause than any other plant at the Falls. The ice goes down, as a rule, on the United States side, and the site for the power house is at a point where the little ice which goes down on the Canadian side will not be troublesome. Before the water reaches the turbine chamber it has to pass through two rows of submerged arches and then through a rack, by which means all ice and floating debris will be kept clear