water level in the tailrace, to approximately the elevation of the scroll chambers. The lower cofferdam was then removed, it being no longer necessary. The draft-tubes were completed in February, 1914.

Since June of this year the power house and dam structures have been pushed with great rapidity, concrete being poured day and night. By August the steel work for the power house was practically complete, the wheel pits were finished, the partitions between gate openings were concreted, the turbine casings were ready for concrete, and the walls were carried up past the floor level of the generator room. About half of the dam was constructed in the east channel and the removal of the top of the island was nearing completion. The penstocks and practically all of the concreting of the scroll chambers and control devices were in place by the end of August. Late operations have included the construction of a cofferdam on the bed of the river at the wide channel on the east side. Here there is about 15 ft. depth of water and the current is exceedingly strong. A channel is being excavated through the centre of the island to provide a water course for the river and a passage for logs of the lumbering interests on the St. Maurice.

Electrical energy for the construction motors and for lighting is supplied from the Shawinigan Falls plant, four miles farther down on the St. Maurice. Current is transmitted at 50,000 volts and is stepped down by three 1,000-kw. transformers to 2,240 volts. A part of the current is further stepped down to 370 volts, by a bank of 100-kw. transformers, and then converted to 600 volts d.c. for operating the d.c. motors. Another portion of the 2,240-volt current is stepped down to 450 volts, by three 75-kw. transformers. Current for lighting purposes is delivered to the circuits at 230-115 volts.

The 9 turbine-generators, when installed and in operation, will provide the Laurentide Company with considerable surplus power, which will undoubtedly extend the fields of the industry in the St. Lawrence Valley. No arrangements have as yet been announced concerning the sale of the surplus. The company will perhaps require 25,000 h.p. for its own needs and it is stated that this alone will mean the saving of a bill for over 65,000 tons of coal, costing over $4 a ton, apart from a general increase of deficiency of operation throughout the mills. The estimated cost of the development is $4,200,000 exclusive of transmission lines or the cost of changes in the paper and pulp plant owing to the electrification of the entire manufacturing system.

WATER-PROOFING CONCRETE.

The following mixture has long been used by the United States Army engineers in water-proofing cement: One part cement, two parts sand three-quarts of one pound of dry powder alum to each cubic foot of sand. Mix dry and add water in which three-quarters of one pound of soap has been dissolved to each gallon. This is nearly as strong as ordinary cement, and is quite impervious to water, besides preventing efflorescence. For a wash, a mixture of one pound of lye and two pounds of alum in two gallons of water is often used.

American cast-iron pipe makers are turning their attention with greater interest to the Latin American market in view of the recent developments. This change, when it comes, will greatly strengthen the opportunity to obtain a large part of the business of the various Central and South American countries, which at present goes chiefly to England, Germany and other European nations.

HOW ENGINEERS MAY BEST USE TECHNICAL JOURNALS.

WHILE much publicity has been given to the usefulness of the technical journal to the busy engineer, and to the proper methods for taking fullest advantage of the services which it renders, it still remains a problem that can best be met by the individual. Many men have many ideas as to the most efficient manner in which the engineering journal may be made of lasting service. All agree that it is indispensable—the differences of opinion centre around its application to each engineer's peculiar needs. There are engineers of all ages of manhood, and engaged, as we are told, in upwards of 110 accurately segregated branches of engineering. Requirements naturally afford leeway for wide variation. It is very gratifying, therefore, to have the instructive lesson which is contained in a paper read by John W. Alvord, consulting engineer, of Chicago, before the Convention of the Federation of Trade Press Associations, held in that city in September. Mr. Alvord views the problem from the standpoint of the young, the middle-aged, and the veteran engineer. His hints to each on how to read, and how to preserve, engineering data are of extreme value. We extract the following from his paper:

That we cannot keep abreast of the times without reading the engineering journals is obvious. That if we carefully read all the engineering journals in our chosen specialty we would have no time left to earn a living is easily capable of demonstration. What, then, is the proper attitude to adopt toward this ever-increasing flood of information that pours in upon us so relentlessly?

If we look about us to see how our fellow engineers solve this matter we shall find a great variety of attitude toward the problem. Some engineers simply do not take engineering journals; reading one occasionally here and there as opportunity offers. Others take all they can afford to take and let them pile up around the office, often unopened and unused. Others still limit themselves to a select few, which they carefully bind and shelve. Still others read journals when they can, and throw them away when they move on. As a rule, however, the engineer prizes his technical paper, and endeavors in some ill-defined and formless sort of fashion to preserve its information for future use. Generally he fails to find any practicable scheme which makes his rapidly accumulating material of much value to him after it has once passed under his eye, and for a large number of engineers, technical journals are only professional newspapers with which to idle away an hour or so and satisfy their curiosity. That their value is something much more than this, or should be more than this, is so apparent as to need no denial.

The problem of the engineer with his technical paper is much affected by his age, station and aim in life. To the man who is engineering only to get money and more money, the engineering journal is a newspaper, in which he may notice mainly where there are better jobs than his own that may be sought after and perhaps obtained. To the man who is anxious to fit himself every year of his life for something better it is an opportunity, quite unequalled many years ago, for a great variety of study. To the young engineer the engineering journal, properly read and noted, is a part of a post-graduate course in engineering. To the middle-aged man it is a mine of data, bearing in all sorts of ways on his work; and to the mature specialist only does it begin to become burdensome by its repetition of experience, and its volume of