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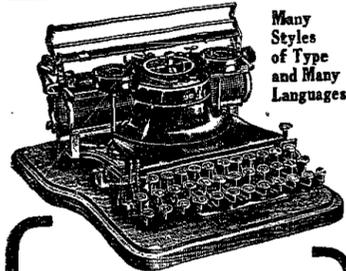
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**CHEMICAL NOMINATIONS**

Election to be Held Friday, Dec. 22, in Building 4

The following are the nominations for officers of the Chemical Society for the year 1916-17.

For President—J. M. Avery '18; W. D. Neuberger '18; H. C. Weber '18.  
For Vice-President—H. M. Cyr '18; G. A. Sackett '18.  
For Secretary—B. M. Greely Jr. '18; W. S. McGuire '18.  
For Treasurer—S. M. Boyd '18; Arthur Smith '18; A. deS. Zubiria '18.  
For Program Committee (two to be elected)—N. A. Bond '18; S. H. Franklin '18; W. R. Holt '18; L. J. Goldstein '19.

The election will be held Friday, Dec. 22, and it is intended that the polls be open throughout the day. The polling table will be located in Building 4 near Professor Talbot's office. In order that members leaving town before the election may vote, arrangements have been made whereby they may obtain ballots on Thursday. To be valid these ballots must be signed and deposited in a specially provided place in the Cafeteria Thursday. The election will be in charge of Edwin J. Goldstein '17.

**NEW PUMP INSTALLED**

(Continued from page 1)

to experimental and testing purposes, and illustrates the demands of modern educational methods.

The great Worthington centrifugal pump can furnish water enough to keep supplied at one time half the fire engines of the city of Boston. The fire engine is a self-assertive, energetic, busy piece of machinery, yet this new pump with its smooth running, almost silent, mechanism, could deliver water quite as fast as perhaps twenty-five ordinary city fire engines could spurt it through their hose nozzles in their usual run of work, for it will deliver to its canal, thirty feet above its base, no less than 22,000 gallons of water each minute.

The pump itself is only one item in this outfit, for there is its motor, an American-Ball engine, some tons of piping to lead the water to its flume, the flume itself, and the great penstock into which it discharges. The flume discharges its water into a penstock, an iron cylinder on end, twelve feet in diameter, and below in the reservoir into which the penstock leads, there is a gird-gate of special construction through which the water returns to the net work of canals just below the floor of the laboratory. The stream that the pump will send up to the second story has been called the "big brook" by the students, but is much larger than most brooks. It means, to express it in dimensions that will compare better with ordinary brooks, a stream of water two feet deep and twelve feet wide, flowing as fast as a man can walk.

The pump itself is volute in form, resembling a great black nautilus shell on edge. The mass of iron weighs some seventeen tons while the engine that drives it is about ten tons more. When the monster arrived at the building it was lifted from its cradle on the flat car by the locomotive derrick that has been employed during construction, and set on rollers on the ground. Here a day's time was consumed in hauling it to the doorway of the laboratory. The next morning the great volute was rolled through the doorway which it cleared by less than an inch. Within a quarter of an hour the ten-ton crane in the laboratory had picked it up, carried it over the other machines already in place and settled it on its own bed.

There is nowhere in the world an indoor hydraulic laboratory comparable with the one here at Technology. Before the foundations were planned attention was given to the needs of hydraulics. The basement floor is largely composed of the grating above the waterways and canals which have been termed "little Venice." There are here placed some eight hundred feet of canals, branching, curving and crossing so that every variety of stream flow may be obtained.

The battery of pumps even without the newest one, is really a catalogue of important manufacturers. The outfit includes a number of related units which together are fitted for the consideration of the behavior of water of large quantities, and of the efficiency of turbines driven by water. The function of the big pump is to elevate the water to the "big brook." The brook is a couple of hundred feet long and has a cross section of twenty-five square feet, and it is said that the pump will fill the brook in about a minute and a quarter. To do this it lifts the water at the rate of about 120 tons a minute.

One of the important purposes of the new outfit is the testing of turbine wheels. Full sized commercial turbines may be lowered into the penstock and there given such head and flow as may be suitable to their need, the whole operation controlled by laboratory measurements. The flow of water in connection with turbines may be measured with laboratory accuracy and with quantities quite as large as in ordinary power brooks found in New England.

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