Subject of Thesis for Second Year.—Sulphuric Acid and Alkali Manufacture.

" " *Third* " Coal Tar Products.

Books of Reference—Lunge—Manufacture of Sulphuric Acid and Alkali.
Wagner—Chemical Technology.
Thorpe—Dictionary of Applied Chemistry.

Any other works on the above subjects may be consulted and results of original observations should be given.

ENGINEERING LABORATORY.

This Laboratory occupies two floors, having a total area of 10,000 square feet. It consists of three departments, viz. :

(*a*) The department for testing materials of construction.

(*b*) The department for investigating the principles governing the application of power. This department is sub-divided into the steam laboratory, the hydraulic laboratory and electrical laboratory.

(*c*) The department for investigating problems connected with standards of length, time, astronomical observations, etc.

In order to prepare specimens for the testing machines, a shop has been fitted up with a number of high-class machine tools specially suited for reducing the specimens to the requisite shapes and dimensions with a minimum of hand labor. It is also supplied with the necessary appliances for making ordinary repairs.

The machines in the department for testing materials are the following :—

An Emery 50-ton machine, built by Wm. Sellers & Co., of Philadelphia, for making tests in tension and compression.

A Riehle 100-ton machine for making tests in tension, compression, shearing and cross-breaking. It will take in posts twelve feet long and beams up to eighteen feet in length.

An Olsen torsion machine for testing the strength and elasticity of shafting. This machine will twist shafts up to sixteen feet in length and two inches in diameter.

A Riehle 2,000 pounds cement testing machine. The cement testing room is fitted with all the usual accessories.

The equipment of the power department is as follows :—

A Babcock and Wilcox 52-horsepower boiler.