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THE NEW CHEMICAL LABORATORY AT PRINCETON.

In a former number of the BULLETIN, Feb. 1892, a brief description of this building was given and in the present article it is proposed to give some details relating especially to the various laboratories in it and to the students' desks.

The main laboratory for students is on the top floor and is 71 feet 10 inches long and 50 feet 2 inches wide; the ceiling being 16 feet high. As already stated, it is admirably lighted by windows and a skylight, while efficient ventilation is secured by means of six large flues in the walls, by the windows themselves and by an opening four inches wide, running all around the central skylight and communicating directly with ventilators in the roof. The shortest distance from any window to a working desk is six feet, so that draughts are easily prevented from affecting the burners.

In this laboratory the ordinary routine of qualitative and quantitative chemical analysis is taught to students of all classes, since this mingling of students of all degrees of proficiency has been found to yield good results.

The students' desks are arranged in two sections in rows of six blocks each, the blocks in one section containing eight desks

each, and in the other section four desks each. At one end of the laboratory is a continuous row of ten desks. Light from windows on each side of the laboratory, as well as from the skylight, is equally distributed over all of the desks. The general arrangement of the desks is shown in the photograph of the interior of this main laboratory in our plate.

A sink one foot wide is put between each two desks; the sinks being of Trenton white ware, with glass traps. To each student is assigned his private desk, the top of which, excluding the sink, measures 5 feet in length and 2 feet in width, not including the bottle racks. The arrangement of the gas cocks, suction cocks for filtering apparatus and water cocks is shown in the photograph. The desks on the right belong to the blocks containing eight desks; those on the left of the central passage way, to the blocks of four desks. On each side of the large water cocks on these latter desks, and constituting a part of the same cock, is a smaller cock, to which can be attached small rubber hose for connecting condensers, etc. The desks are of ash, and are covered with slate, the top of which is 3 feet 2 inches from the floor. After many tests the slate from the Monson Maine Slate Co., Boston, Mass., was selected as best resisting the action of acids. The reflected light makes it appear light-colored in the photograph, but it is a close-

smaller desks, while amply large for work in qualitative analysis are hardly large enough for quantitative analysis.

Both of these laboratories are connected with the sulphuretted hydrogen room, which is about 11 feet square and is well ventilated by means of a large window, a shaft from the ceiling through the roof and a large flue in one wall. The sulphuretted hydrogen gas is generated in an adaptation of the apparatus made by Gerhardt for the Bonn laboratory. It consists of a glass cylinder 2 feet high and 5 inches in diameter, to contain the dilute sulphuric acid, with an inner cylinder about three inches shorter. The lower end of this cylinder is pinched together enough to keep the lumps of sulphide of iron with which it is charged from falling out, and the top of it is closed with a rubber stopper through which passes a glass tube, connecting by rubber hose with the wash bottle from which the gas is conveyed to the distributing cocks. The inner cylinder at Bonn is of glass, but at Princeton it is of lead tubing, about 2 inches in diameter. One such simple piece of apparatus furnishes all the gas needed for thirty students at as high a pressure as is ever required. The main service pipe is ordinary half-inch gas pipe, to which are attached nipples connected by short, stout rubber tubing with glass stop-cock tubes, and to these latter, by means of rubber tubing, the students connect the glass tubes which carry the gas into the solutions to be treated. The vessels containing these solutions are all placed within small hoods, closed by sliding glass doors and connected with one large flue.

The private laboratories for Professors and Assistants and the smaller laboratory for advanced students are provided with tables and hoods for the most part similar to those already described.

The assay laboratory in the basement has, for the use of students, several portable Battersea muffle furnaces and a stack of four crucible furnaces, so that each student may be able to have full control of the furnace in which he is making assays.

**THE VISIT OF PRESIDENT EZRA
STILES, OF YALE, TO PRINCETON IN
1754.**

An interesting document has recently come to light, which has some items pertaining to the early history of the college. The Reverend Edward G. Porter, of Dorchester, Mass., discovered the diary of a journey, which Ezra Stiles, President of Yale College, made on horse-back from New Haven to Philadelphia and back in the autumn of 1754. A printed copy of it, which Mr. Porter lately laid before the Massachusetts Historical Society, has been sent by him to the College Library, and from it the following extracts are taken :

“ [Sept.] 24. In morning took horses & with Mr. Kettleas, & 3 other Dutch gent, took boat, & sailed 9 miles across to Staten Island, on which we road, till crossing a small ferry, we arrived at Elizabeth Town Point. Dined at Eliza. Town. Arrived at Newark about 3 aft. Waited on President Burr. Went to prayers, after which 2 young gent. of the college acted *Tamerlane* and *Bajazet*, &c. Lodged with Mr. Burr. 25. Commencement; waited on Mr. Prest. Burr & viewed the college library. Went to meeting, where we saw a most splendid assembly of gentlemen and ladies. In the forenoon heard the Exercises, after which S^r. Shippen* pronounced an ingenious oration. Afternoon, M^r. President began the exercises with a learned oration. Degrees conferred; among

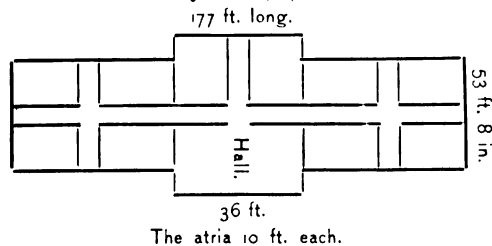
* William Shippen, Jr., M.D., Founder and Professor of the Medical School, College of Philadelphia, then a member of the graduating class, 1754.

others, degree of A. M. on Rev. Mr. Whitefield, who sat with Gov. Belcher in pew. Both forenoon & afternoon as the procession entered, & again when they went out of the meeting house, anthems were sung very melodiously by a chorus of men and women in the gallery. About half an hour after academic exercises, Mr. Whitefield mounted on a stage by the Court House, preached a sermon in open air to a large auditory from Luke 1, 15.
* * * * *

Thence President Stiles continued his journey to Philadelphia, lodging in Princeton. On his return, the following entry is found in the Diary :

"Oct. 1. Breakfasted at Ferry. Viewed foundation and plan of college at Princeton, 177 f. long and 53 $\frac{3}{4}$ f. wide.

Plan N. Jersey college, Princeton :



Mr. Porter states "this plan is drawn three times in the diary, the painstaking writer evidently wishing to have it accurate," and further "that it was the largest stone edifice then in America" and "served as a model for University Hall at Providence, 1790." It will be remembered that the Rev. James Maning, then President of Rhode Island college, was a graduate of Nassau Hall, class of 1762.

We may note several interesting items.

1. It would appear that dramatic performances were early in vogue as it seems "2 young gent. of the college acted Tamerlane and Bajazet immediately after prayers on commencement eve." Query, was this some extract from Marlowe's *Tamburlaine* ?

2. Princeton commencements were also early signalized by brilliant audiences. Dr. Stiles was impressed by "a most splendid assembly of gentlemen and ladies."

3. Vocal rather than instrumental music was served on such occasions. Instead of brassbands with their "sonorous metal breathing martial sounds," President Stiles mentions anthems "sung very melodiously by a chorus of men and women in the gallery."

When in 1896, the one hundred and fiftieth anniversary of the college is celebrated, might it not be well to revive this feature at least of one of our earliest commencements? JAMES O. MURRAY.

THE NEW REGULATIONS FOR THE DOCTOR'S AND MASTER'S DEGREES.

Toward the close of President McCosh's administration, the whole subject of University Degrees at Princeton was thoroughly reviewed, and regulations were adopted with the purpose of elevating the character of these degrees to the highest university standards. During the present academic year now closing, these regulations have been subjected to thorough re-examination, in order to incorporate in them such improvements as the experience of the last few years indicates to be desirable. Accordingly, the President and Faculty have devoted prolonged attention to the matter, and the result of their labors is embodied in a pamphlet containing the revised regulations which will be acted upon by the Board of Trustees this commencement.

The general scheme is substantially in accord with the old one, and differs from it only in throwing additional safeguards around the Master's and Doctor's degrees, and in giving greater definiteness and pre-