

HISTORY OF COURSE I

(Continued from page 1.)

of President Walker may have entered into this, the writer is unable to state. The Geodetic Option was carried on for a number of years with very satisfactory results. Graduates in this option have secured excellent positions and have done splendid work. The field for men thus specially trained is not large, and it has seemed wise finally to have work of this kind pursued as graduate advanced work upon a strong engineering foundation. The opportunities are excellent for the pursuit of this line of advanced work; there is an observatory in the Middlesex Fells available, which belongs to the Institute, and Professor Hosmer is well qualified by taste and acquirement to attend to the special studies of this option. In 1887, Professor Allen entered the Department as Professor of Railroad Engineering, and his work has been for some years confined to that specialty; except for one advanced course in Specifications and Contracts.

In 1888, it seemed necessary that Bridge Design should have the attention of a special instructor, and J. H. Stanwood first undertook this work. Upon his death, in 1896, Professor McKibben assumed charge of the class and during the years in which he and Professor Spofford were associated in this work, the instruction in Bridge Design was brought to a high state of efficiency which it still maintains under Professor Moore and Mr. Bradbury. With larger classes it became impossible for one man to do the class work in Structures and the Third Year work was turned over to Professors McKibben and Spofford, the class being divided into two sections; and for two or three years past, divided into four and smaller sections, Professors Mott, Russell and Moore, and Mr. Bradbury carrying on this work. The instruction in Hydraulics too must be given to larger classes, and also to students in other courses, Mechanical, Electrical, Mining, Chemical and Chemical Engineering. Professors Mott and Russell for the last two or three years have spent their efforts largely in this direction while Professor Porter has also continued in teaching Hydraulics. Professor Mott's withdrawal has led to the appointment of Professor Barrows, fresh from successful experience in practice, and with familiarity in teaching acquired at the University of Vermont, and previous service as Assistant at the Institute. Professor Russell has recently published an admirable book on Hydraulics, well adapted to Institute work. The ability displayed by him in this way stands to the credit of the department, and the hydraulic work under Professors Porter, Barrows and Russell is upon a strong basis. In Railroads also, the size of the classes has brought Professor C. B. Breed into the class work of teaching as well as control of the railroad field-work, and this has added material strength to this part of the work.

In the old days the Surveying was

satisfactorily successful with smaller classes under such experienced men as Professors Burton and Robbins, when the work could be handled close by. With larger classes, and with the necessity for going farther into the country, less effective work is possible, and it is expected that a Summer School of Surveying will be established at which practically all of the field work will be accomplished. Much of the preliminary work to this end is already done, and that a speedy and favorable outcome will result is confidently expected. This is today the greatest need of the Department. It is needed as much for the Railroad work of the Third Year as for the Surveying of the Second year and will also simplify the Hydraulic field work.

In 1890, and for several years later, through means furnished by Colonel A. A. Pope of Boston, well known for his interest in "Good Roads," additions were made to the Museum, Library and Laboratory, in the direction of Highway instruction, and a special Instructor was secured. Much of the course in Civil Engineering, in Railroads and otherwise, is and has been applicable to highway construction, but a special course in Highway Engineering is still maintained.

Several years ago it was found that the increase in entrance requirements released an appreciable amount of time

It includes a large tank for measuring the flow from orifices, a standpipe allowing about eighty feet of head, with weirs, nozzles, water wheels, and pumps. There are also in the department, floats and various forms of current meters, for determining the flow of streams. The laboratories of the Mechanical Department are regularly used by students of Civil Engineering for experiments in Steam, and in Applied Mechanics for testing materials, and are especially available for Thesis work. The observatory in the Middlesex Fells has already been referred to.

From time to time students have seen fit to take advanced work, post-graduate work, but until a year ago, only graduates from the Institute courses entered upon this work, and then at intervals. The course in Civil Engineering now seems developed to a point where a regular demand for the post-graduate work exists, both among our own graduates and students from other colleges. The Department at this time seems well equipped to give such work, and progress in this direction can not only be expected but also will be welcomed.

The library of Civil Engineering books was in 1886 of insignificant size, possibly two hundred books. In some respects the greatest monument to Professor Swain's labors here, is the splendid Library, the result largely of

Professor Allen. Furthermore, it is contemplated that the powers and the initiative of Professors Porter, Robbins, Spofford and Allen, dealing with work in Hydraulics, Surveying, Structures and Railroads, shall be somewhat greater than heretofore. The scheme seems somewhat more democratic than the former, and meets with favor among members of the department generally, and with the present personnel at least, is sure to work satisfactorily.

Such, then, appears to be the development of the department. In it Professors Henck, Vose, and Swain has each had his conspicuous and important part. To Professor Henck for his work at the beginning too much credit cannot be given; the writer who was a student under him still feels under a heavy burden of debt to him. Respect and admiration go out to him. For Professor Vose, personally, the writer has most pleasant remembrances although not associated in his work. For Professor Swain more than twenty years of association leave a feeling not only of high appreciation as teacher and engineer, but also of personal affection. His work here is not likely to be underestimated by those who knew him.

At first thought the departure of Professor Swain and Professor Mott have seemed an irreparable loss; but we look forward not backward. Professor Spofford and Professor Barrows, both former members of the Department, return to us after a well-rounded experience both in teaching and in practice, in the prime of life, ready and able to do splendid work for many years to come, not only in undergraduate but in advanced work especially.

Great credit is due to Professors Henck, Vose and Swain for the department which they have built up. To take up the burden laid down by them is no idle task, but with the support of a united and enthusiastic department Professor Porter, Professor Robbins, Professor Spofford and the writer assume the load without flinching; the standard of the department will not be allowed to drop.



INSTRUCTORS AND ASSISTANTS, 1909-10.

at the top, in the Fourth Year. The Department was well united in believing that an adequate course in Steam Engineering would add greatly to the strength of the Course in Civil Engineering. The course in Steam has from time to time been strengthened to the point where its sponsors believe it to be definitely better than the course given even to Mechanical Engineers twenty or twenty-five years ago. A pumping engine for the hydraulic or sanitary engineer, or the locomotive for the railroad engineer, should certainly not be beyond his ken. A course in Dynamo Electric Machinery leaves the student not without some knowledge of electricity, the importance of which is becoming daily more evident.

During Professor Swain's administration, not only has the work of the course developed, and the Department grown to its present size, five Professors, one Associate Professor, four Assistant Professors, two Instructors, and eight Assistants, a total of twenty; but there has been a physical development as well. During this time the hydraulic laboratory, now operated by the Mechanical Department, was installed from the Civil Engineering side.

his diligence and skill, a library of Civil Engineering without a superior in the United States; its standard must be maintained.

The collection of framed photographs in the hallways and the drawing rooms has a wide reputation. Other acquisitions less in evidence are albums of photographs of railroads, highways, bridges, canals, and various engineering works, gathered from all over the world, supplemented by a notable collection of lantern slides. A museum of less pretence nevertheless contains not a little of value, somewhat less accessible than desirable on account of restricted space.

Upon Professor Swain's retirement, a re-arrangement has been made of the work of the Department of Civil and Sanitary Engineering, and of the courses in Civil Engineering and of Sanitary Engineering. In Civil Engineering Professor Spofford represents the Course in all matters connected with Faculty or Students, and Professor Porter assumes the same relation to the Course in Sanitary Engineering. The Department of Civil and Sanitary Engineering in its general and administrative relations is represented by

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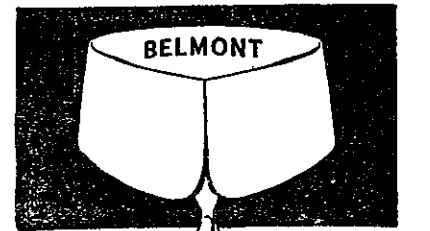
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