

ing upon the initiative and under the direction of Professor C. H. Peabody. In addition, new courses for advanced students are offered in many of the departments.

A New Research Laboratory

Through the liberality of a member of the Corporation it has been possible to make definite provision for the important extension of our advanced instruction and research work to the industrial applications of chemistry. By the establishment at the beginning of this year of the new Research Laboratory of Applied Chemistry as a division of the Chemical Department, special opportunities are offered for the execution, by salaried research assistants and by advanced students, of investigations of chemical problems of interest to the manufacturer. In a report submitted herewith, the Director of the Laboratory, Professor W. H. Walker, describes more fully its present work and its future prospects of development.

Development of the Buildings and Equipment

Some important additions have been made during the past summer to our laboratories and equipment.

Greatly needed space has been provided for the Laboratory of Steam Engineering by extending it into the old lunch room in the Pierce Building; and there has been installed in it a 500-kilowatt steam turbine, together with a condenser, pumps, and other accessories.

In the boiler and power plant there have been installed two new boilers, furnished at a greatly reduced price by the Babcock and Wilcox Boiler Company, for which assistance the Institute wishes to express its great indebtedness. The whole plant has, moreover, been rearranged and modernized under the direction of Professor E. F. Miller; and it is largely in consequence of his experience, good judgment, and devotion to the undertaking that the Institute now possesses a model plant which will serve not merely to furnish heat, light, and power to its buildings, but will enable its students to study in a more practical way the problems of steam engineering.

Additional room has also been assigned to the Laboratory of Analytical Chemistry, to enable the Department of Chemistry to provide for the increased number of students pursuing its subjects in the higher years.

A very valuable addition has been made to the instrumental equipment of the Department of Geology. A modern seismograph of the most improved form, purchased with aid of a gift from the estate of Caroline A. R. Whitney, has just been received by the department. It is hoped that provision can soon be made for setting it up in a suitable location in the suburbs, remote from the shocks of the city.

The Department of Economics has also received a most important addition to its equipment through the generous gift to the Institute of the private library of General Francis A. Walker, by his widow, Mrs. Exene Walker. This library consists of about 1500 volumes on economics, many of which are very rare and valuable. In appreciation of this gift and in further recognition of the distinguished services of our former president to this institution and to this branch of science, the Executive Committee has voted that the name Francis A. Walker Library of Economics be attached to the whole collection of works upon this subject possessed by the Institute.

Need of A New Site

In speaking of our buildings and equipment, I must not fail to emphasize the seriously crowded condition of our present quarters, even though it be a time-worn topic of college presidents. I wish specifically to call your attention to the following facts:—our limited space makes impossible any increase in the number of our students; it prevents development of our present work in any new direction, however desirable it may be; it prevents, through lack of classrooms, an extension of the plan of instruction in small sections, which as I have stated is so essential to efficient teaching; it involves (most strikingly in the case of the Chemical Department) a separation of different divisions of the departments, thus hindering a close association of the different instructors and proper correlation of their work; it makes necessary a crowding of students and apparatus in our laboratories which makes thoughtful and reliable work difficult; and it gives no opportunity for providing our instructing staff with adequate offices and private laboratories in which writing, calculations, and in-

vestigations can be properly carried on.

Though the physical condition of the Institute is, as I have indicated, one that makes impossible further growth or a development of its work in new directions, and one that does in some measure impair the efficiency of our present instruction, yet I should be sorry to give you the impression that the latter effect is of a very serious character. On the contrary, there has, I believe, never been a time when our teaching was so thorough or our system of education so generally effective; and this results from the fact that limitation of space is, after all, only a secondary factor in the whole problem. Equipment for lecture and laboratory work is another physical factor of at least equal significance; and on this side the Institute, taken as a whole, is extraordinarily well provided for. Far more important than either of these are, moreover, the character of the teacher, the spirit of the student, and methods of instruction, and the standards of scholarship and ideals of the institution; and in all these respects the Institute is steadily advancing.

Nevertheless, while recognizing the more vital importance of these considerations we must not permit our growth and development to be hampered by inadequate accommodations and unsuitable physical surroundings. The situation is, moreover, one that requires radical treatment; for the condition referred to is one which prevails throughout the whole Institute, and not merely in a few departments. In this respect our position is different from that of those universities which have developed upon the plan of making ample and permanent provisions for one department every few years, instead of making during the same period such provision as might be possible for all departments of the institution. Since time is a highly important factor in determining the growth and reputation of institutions and the value of the service which they render, I believe the plan of continuous all-sided development which we have followed was the wisest; but it should be realized that we are now facing the logical result of that plan, which has made it imperative that the whole Institute be now rebuilt upon a permanent basis and upon a new site better adapted to its needs. Though no definite action in this direction has been taken by your body, or by the Committee on the Site which you have appointed, yet I believe that, during the past year, through informal discussion and individual consideration of the matter, there has grown up not only among your own members but among all the other groups of men connected with the Institute,—the faculty, alumni, and undergraduate,—a sentiment so strong that it will be satisfied with nothing less than the creation of a new Institute on a new site. It has also, I believe, come to be recognized that the securing by private subscription of a moderate sum of money is an essential preliminary to the serious discussion of any plan of rebuilding and removal. This feeling was expressed by the action taken at the last stated meeting of the Corporation requesting the Committee on the Site to act also as a committee for obtaining funds for the development of the Institute. In my own opinion, this is not a matter that should be left to the initiative of the President or of other individuals. It can be adequately accomplished only through a well organized effort carried on jointly by representatives of the Corporation and Alumni.

Developments in the Conditions of Student Life

Through the opening of the new Technology Union in the building erected on Trinity Place during the past summer, a most important step has been taken in the development of the social life of our students.

The new Union was made possible mainly through the interest and efforts of the Committee on the Welfare of Students appointed by the Corporation last March, and through the generous donations of individual members of this body, which provided for a large part of the expense involved. That this assistance is highly appreciated by the students is shown by the following resolution which I present to you with much pleasure at the request of the Institute Committee, which is a large committee thoroughly representative of the whole student body:

"Whereas a new and magnificent Union has been provided for the use of the students of the Massachusetts Institute of Technology through the efforts of the Committee on Student Welfare of the Corporation and through the gifts of members of the Corporation and Alumni, and

Whereas, The management of this Union has been largely vested in the hands of the students, be it

RESOLVED by the student body of this institution that their heartfelt gratitude be extended to the said Committee and all others through whose generosity this important development of student life has been made possible, and be it also

RESOLVED that the students by their use of the Union will at all times demonstrate this appreciation, and be it further

RESOLVED that a copy of these resolutions be sent to the members of the Committee on Student Welfare of the Corporation, and to all other members of the Corporation and Alumni who have contributed funds for the erection and equipment of the Union."

The Union serves the purposes both of a club house and of a general eating place for students. On the first floor there is a large dining room, in which students who desire to do so may get all their meals, both week-days and Sundays; the kitchen being in the adjoining basement of the Pierce Building. On the second floor there is a smaller dining room available for the meeting of student societies; and a large social or living room, where students may gather in their spare time for reading and conversation and where evening entertainments may be held; also a small room known as the quiet room. In the mezzanine part, a coat room and students' post office, a lavatory, and three small rooms for offices for student organizations are provided. In an adjoining room is the office of The Tech, the students' newspaper.

The control of the Union has been placed in charge of a Committee of nine members, of whom a majority are undergraduate students elected by the Institute Committee. There have also been elected by the students three subcommittees to take charge of different sides of the Union's activities, namely, a House Committee, a Dining Room Committee, and an Entertainment Committee. The latter of these committees has arranged for the holding of lectures or musical or other entertainments regularly on every Friday evening.

The Point System

The admirable spirit of our students, manifested not only in connection with this Union, but in many other ways, is, I believe, one which can be matched at few, if any, other colleges. I can not refrain from mentioning to you a striking illustration of this. The Institute Committee has recently recommended, and the student-body put into practice, a plan known as the "point-system," which has been introduced in only one or two other colleges. The purpose of this plan is to restrict the number of different offices in the various student organizations which one individual may hold. To each office a certain number of "points" is attached, and no student can hold positions corresponding to more than a specified maximum of points. This hinders a few aggressive individuals from monopolizing the direction of student activities, whereby their own scholarship is sacrificed and the desirable participation in more moderate measure of a larger number of students is prevented.

The Development of Closer Relations

In order to enable the Institute to fulfill more effectively its educational mission, a determined effort must be made to establish closer relations with and among the different organizations

and groups of individuals that are in any way associated with the work of the Institute. While its success will, of course, depend primarily upon the character of the education it affords and upon the contributions to scientific progress it makes; yet no institution of learning, and least of all a school of applied science, can afford to become in any degree isolated. I believe that insufficient attention to this matter during the past ten years has been a serious obstacle in the way of our progress; and that there is no more important task before us in the immediate future than that of remedying this defect.

First of all, there should be close cooperation between the different groups within the Institute itself, this Corporation, its Executive and other Committees, the Alumni, the Faculty and instructors, and the undergraduates. There should be full discussion of new questions as they arise, not merely by the body which may have the final decision, but by all others who have any natural interest in them. The carrying on of an educational institution is in its very essence a co-operative undertaking; and full publicity and free discussion of its affairs is one of the prime conditions of its success.

As suggested in my previous report, members of this Corporation can, I believe, render great assistance to the Institute through a more direct participation in its work. This may be done in the case of such matters as specific improvements in the courses and methods of instruction, in the conditions of student life, in the equipment of the departments—in the case of any special matter in which a member may take a personal interest—through individual co-operation with the President, Dean, and professors in charge of departments. For the consideration of larger questions, the appointment of special committees seems the best method, members of the Faculty or Alumni who are especially interested in the matter under consideration being invited to attend. The Committee on the Promotion of Welfare of Students appointed by the Corporation at the March meeting has furnished a striking illustration of the effectiveness of this plan. To the interest and activity of that Committee, which had the benefit of the co-operation of the Dean, Bursar, and representatives of the alumni and student body, the establishment of the Technology Union is, as I have already stated, largely due.

It is also important that close relations be maintained between the students and the administrative officers of the Corporation and Faculty, so that the former's needs and interests may be well understood, their points of view appreciated, and their co-operation in promoting the aims of the Institute secured. Few greater mistakes could be made than that of failing to enlist the direct interest and support of the students in the solution of the general and educational problems which confront us. This has been made easier through the reorganization during the past year of the Institute Committee, by which it is made thoroughly representative of the student-body, as well as by the closer contact between students and administrative officers which the Technology Union has brought about. The President and Dean have also been greatly aided on this side by the appointment made last year by the Executive Committee of Mr. H. A. Rapelye of the class of 1908 to the new position of President's Assistant. His intimate knowledge of our student life has enabled him to advise and assist us effectively in many ways. He has among other things taken an important part in the arrangements connected with the new Technology Union, and is now organizing a Student Employment Office, through which this important work may be more effectively handled.

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