President Maclaurin sitting at the desk presented by the Technology Club of New York

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WILLIAM BARTON ROGERS THE FOUNDER

Address delivered at a convocation of the students on the 110th Anniversary of his birth, December 7th, by James P. Munroe, '82

As you doubtless know, John Harvard left only £750 to the college in Cambridge, and the total gifts of Elihu Yale to the college in Connecticut amounted to only the petty sum, from our modern point of view, of about £600. Nevertheless, those two names will go down conspicuous through all human time. Yet neither of the men thus honored took any active or effective part in the founding of either Harvard University or Yale.

Our Founder, on the contrary, gave money, gave years of thought, time and energy, gave finally his very life, to the establishing and developing of this institution. Yet, with the exception of the name of this building and of certain professorships and scholarships, there is no memorial to that noble and distinguished and real founder of the Institute of Technology, William Barton Rogers.

It is not only fitting, therefore, it is tremendously important that on this 110th, and on every anniversary of President Rogers' birth, we who are his spiritual heirs, should get together and—not for his sake, but for our own—recall the man who not only created the Institute, who not only did more than almost any other individual to make modern higher education possible, but who bequeathed to us that most precious of legacies,—the legacy of the spirit of Technology.

The father of William Barton Rogers was an Irishman from Londonderry, his mother was a Scotchwoman from the same city, and they came to America after the Rebellion of 1798. They had four sons, of whom William was the second, and every one of those

sons made notable contributions to science, both pure and applied. Seldom have there been four brothers all so gifted, and they were among the last of those intellectual giants who were willing and were able to "take all Nature for their province." Since them, every man of science has been, perforce, a specialist; and it is really a phenomenon to find, in these days, a scholar so deeply learned in physics, in the law, in education and in many other branches, as is that distinguished and worthy successor to Professor Rogers, President Maclaurin.

Bred in the venerable Southern college of William and Mary, for many years a teacher there and at the University of Virginia, where he was also for some time the administrative head, state geologist of Virginia, and an international authority on geology, chemistry and physics, William Rogers, as far back as 1846, drew up, with his brother Henry, a plan for a new type of college in which young men should be rationally and thoroughly trained both in pure science and in its applications to the rapidly growing problems of engineering, chemistry, architecture and public health. In those days, when the only kind of higher education conceivable was the traditional one brought over from Oxford and Cambridge, this plan seemed the wildest sort of dream. Men of the type of the Rogers, however, do not idly speculate: they persistently seek every means of making their visions true. And, fortunately for us, circumstances combined to help William Rogers establish here in Boston, in 1865, the very type of school of which he had clearly seen the outlines nearly twenty years before.

The favoring circumstances were these: First, that he married a Boston woman of wealth and in heartiest sympathy with his ideals, Miss Emma Savage, daughter of the famous genealogist, James Savage; and, secondly, that for a number of years a group of enlightened manufacturers of Massachusetts had been striving to create some kind of technical institution in which might be trained the engineers, chemists, and others skilled in applied science whom they needed in their rapidly expanding industries. These men, wise in their own businesses, but inexperienced in matters of education, had been tentatively proposing projects, more or less fantastic, for what they called a "Conservatory of Arts and Sciences." They needed a far-seeing, experienced leader; and such a leader conspicuously appeared in the person of Professor Rogers, who had come to Boston in 1853, who possessed the wisdom needed

to prepare a clear scheme for what he called an Institute of Technology, who had the eloquence to plead its cause with the Massachusetts legislature and with men of wealth, and who had the indefatigable energy to work out all the myriad details and to overcome the million obstacles inseparable from such a task.

For nearly three years Mr. Rogers labored with committees of the legislature, with other public officials, and with many private citizens, until, in April, 1861, he secured a charter for an Institute of Technology, together with a grant of two thirds of one of the squares of the projected Back Bay lands (at that time twenty feet below high water). But the charter could not become effective until $100,000 should be raised; and that was a huge sum in those primitive days. Moreover, the opening Civil War turned men's minds and purses wholly away from educational projects. Therefore, notwithstanding stupendous effort on the part of Professor Rogers, it was only a few days before the expiration of the two years within which the money must be raised, that the enterprise was saved by a gift of $100,000 from Dr. William Walker. Nearly another two years of the hardest kind of work was required to organize the school, to find a temporary abiding place for it, and to draw up plans for a suitable permanent establishment. The School of Industrial Science was opened in 1865,—fifty years ago next February—in the Mercantile Library Building on Summer street (a few years later swept away in the great Boston fire), and it was not till the fall of 1866 that this Rogers Building was fully occupied by classes.

And they were such tiny classes! When the school opened it had only fifteen students, and when I entered, thirteen years later, there were less than 200, scarcely a tenth of the present registration. And what a huge task it was to create the Institute out of nothing during a period demoralized first by Civil War, and then by the panic of 1873, against every sort of opposition and intrigue, and in the face of friendly doubts that there ever could be demand enough for young men trained in this manner to make such an institution necessary!

Moreover, President Rogers and his colleagues had set themselves the task of hewing out new paths in education; and that, especially in conservative New England, is the most difficult of enterprises. Laboratory teaching was then practically unknown. The few who studied chemistry had never got beyond watching the

instructor perform crude experiments at arm's length from his pupils. In two or three strenuous years, however, Rogers and his associates not only created working, teaching laboratories of chemistry, physics, mining and metallurgy,—they evolved a whole new system of education; and they did this work so well that, today, not only the Institute, but practically every higher and every secondary institution in the civilized world is instructing its students in the better ways that Rogers demonstrated. As I have said elsewhere:

"The change has come about so gradually as to make it hard to realize that, whether in the primary school or in the university, the attitude of the teacher towards his pupil, of the pupil towards his work, of the public towards the means and ends of education, is enormously different from that of forty years ago. Then education was receptive, today it is creative; then the pupil was to be instructed, today he is to be developed; then the important element was the lesson learned, today it is the student learning."

But the path of the pioneer is always thick with thorns. What was it, therefore, that kept the Institute alive through those days of doubt and difficulty, through those almost continuous dark years from 1865 to 1881? It was kept alive by a board of trustees who, when there were no funds to pay the bills, put their hands in their own pockets; it was kept alive by a Faculty that, when there seemed nothing to be done except to close the Institute, voluntarily cut down their already far too meager salaries; above all, it was kept alive by Professor Rogers who, though at an age (seventy-four) when most men feel that they have earned the right to rest, though so long an invalid that only the most extraordinary care on the part of his devoted wife had saved him from death, reassumed, in 1878, the active burden of the presidency, which ill-health had compelled him to lay down eight years before, and, like an aged general rallying at the front, so inspired his forces that, three years later, he was able to deliver the Institute, comparatively strong and with its future well assured, into the young, vigorous hands of that magnificent successor in the presidency, General Francis Walker.

Let me tell you what some of those men of the early days did;—and these instances are merely typical. William Endicott, who died the other day, full of years and of honors, personally raised for Technology, as its early treasurer, by what may well be called door

to door begging, more than $600,000; and, when the banks refused to accept the notes of the Institute, endorsed them himself. Robert H. Richards, who has just retired from the teaching staff after nearly fifty years of devoted service, used, like many another member of that early Faculty, to work night and day, doing the labor of three ordinary men, in order to make the scanty resources of the Institute go to their very farthest limit. And President Rogers himself not only never took a cent of salary, not only expended, on the contrary, large sums on behalf of the Institute, but, for years, literally from a sick-bed from which it seemed as if he never could arise, he thought and talked and wrote Technology, doggedly maintaining, through all kinds of discouragement and temptation, its independence and its high ideals.

Moreover, old and ill as he was, he seized every opportunity to place his wisdom and his learning at the service of the community, always declaring it to be the paramount duty of educated men to use their special powers in helping in all ways possible their fellowmen.

How I wish you might have seen him; for he was a type of old-world gentleman wholly unknown to these modern, hurrying times. Soldierly in bearing, with a face of Roman purity and strength, his beautiful white hair worn long, he had a courtliness of manner that is now a lost art, he had a voice that, even in old age, was like a bell, and he possessed an extraordinary eloquence that made his presentation of the most abstruse scientific topic as compelling as an oration by Webster, Everett, or Clay. His eyes, deep set under shaggy white brows, were piercingly brilliant; and when he appeared, every gathering rose, instinctively, to do homage to such a splendid embodiment of noble intellect. I saw him only a few times, for he could mingle little with the student body; but I had the solemn privilege of witnessing the very act of laying down his life for the Institute he loved. Here on this platform it took place, on the day of my graduation, May 30, 1882. His successor, President Walker, introduced him to the large audience, in sentences so eloquent that it made one's heart ache to hear such eulogy. President Rogers rose to reply, said a few words, and, swaying for a moment, fell, instantly dead, still in the harness of his epoch-making task. A few days later he was buried, with simple services, from this same hall; and thirty-two years later, the atmosphere of the Institute which he foresaw in 1846, which, with so much toil

and anxiety he built up between 1858 and 1882, and for which, literally, he gave his life, is still electric with the Technology spirit that was his finest legacy: the spirit of hard work; the spirit of absolute honesty in research and in the applications of research; the spirit of devotion to the kind of education for which the Institute stands; the spirit of self-dedication to the public weal; the spirit of democracy, which makes Tech men real brothers here and throughout the world; and the spirit of self-forgetfulness which places the work to be performed far above the petty, personal advancement of the individual by whom that work is done.

I hope all of you will go out from the Institute good engineers, competent chemists, or skilful architects; but you will fail to be genuine Tech men, true sons of Rogers, if you do not also go out greedy for a man's work, determined to be absolutely honest and clean in everything you do, wholly willing to subordinate your little interests to the larger interests of the "team" with which you are called upon to "play the game," and always ready to serve your community, be it large or be it small, by answering every reasonable call of citizenship.

Industry, honesty, loyalty, service,—those were the qualities conspicuous in the life of William Barton Rogers, those are the qualities fundamental to Technology. This spirit of hard and purposeful industry, of absolute honesty, of personal and social loyalty, of service to one's fellow-men, is the undying legacy of President Rogers, cherished and augmented by his associates and successors, and transmitted to every Technology man who is ready to receive it, as a free and imperishable gift from this splendid institution, the beloved foster-mother of us all.

Proceedings of the National Academy

Beginning this month the National Academy of Sciences will start the publication of its monthly proceedings. The managing editors will be Professor E. B. Wilson of the Institute, and the chairman of the board, Professor A. A. Noyes, '86, also of the Institute. Professor Noyes is also a member of the editorial staff covering the field of physical and organic chemistry. The foreign secretary is George E. Hale, '90, of the Solar Observatory, Pasadena, California.

ON TO PITTSBURGH

The latch string is hanging out and every Pittsburgh Tech man is a host—General plans for meeting of Technology Clubs Associated

The whole-souled and thorough way in which the alumni of Pittsburgh are preparing to entertain the Technology Clubs Associated, Friday and Saturday, February 19 and 20, indicates that the third annual meeting of the associated clubs will be at least on a par with the very successful occasions that have preceded it.

When the plans for the All-Technology reunion in Boston were changed, postponing the event until another year, the opportunity was given to Pittsburgh, which had expected to entertain the associated clubs in 1916, to do so this year, and although the notice was short the Pittsburgh association accepted the opportunity with enthusiasm, and preparations are now practically complete for the entertainment of their guests.

In accepting this offer the Pittsburgh club realized that the conditions at this time militated against a large attendance if the plans of previous years were pursued. They felt that the convention would have to be made attractive to a large number of the alumni, and the most sensible procedure would be to make the entertainment of a simple order so that the expenses would be reduced to lowest terms. Although it is contemplated to make the cost of the different events very moderate indeed, this is not at all indicative of the hospitality that will be provided. It has been decided to make the banquet charge three dollars per plate and the course and class luncheons one dollar a plate. The smoker, which will take place on the 19th, will be free of charge.

Another characteristic of the meeting will be that it will be made of concrete value to the Institute in addition to the general benefits to be derived from such a social gathering of alumni. One way of doing this is to make the course luncheons, which will be held on Saturday noon, February 20, particularly interesting and useful. The committee in charge of this event plans to divide the attendance into six or seven groups, each containing men from one or two allied courses and to have Faculty representatives of each

department present, at each of these groups. In addition to this it is planned to do some preliminary work so that there will be in each group a local speaker who will express the alumni opinion as to the educational results accomplished by the course. The Pittsburgh club feels that the purpose of the Technology Clubs Associated should be largely to form a channel for the expression of alumni thought on Institute matters, and it is proposed to make this expression as wide and as helpful as possible at this time.

Another feature of the convention will be the great variety of entertainments that will be offered in order that each individual may receive the greatest benefit. Some of the visitors will find their most profitable recreation in following professional lines; others will find it most desirable to break completely away from their own field of work and make studies in other fields. The excursion committee has, therefore, decided to offer those attending the meeting their choice of a wide number of points of interest, and as Pittsburgh is a center of a great diversity of industries and also has many examples of scientific and artistic interest, it is believed that everybody may be sure of a profitable visit.

Another feature of the convocation, which will be generally endorsed, will be the effort of the committee to encourage the men coming to the meeting to bring their wives. Places will be provided for them at the banquet and on the excursions, and arrangements will be made so that they will be taken care of at practically no expense during the evening that the men will be at the smoker. It is intended that the ladies shall feel perfectly at home at the various functions. There will be no special tables for them but they will sit with their husbands as members of the convention. The committee realizes that this is a very decided innovation, but believe that it will work out in a most satisfactory manner. The wives of Pittsburgh men will be out in force.

It will be interesting to know that the arrangements are not being made by a committee of limited size, but as the club expresses it, they have a "right little, tight little, association" out in Pittsburgh, and intend that every member of it shall be, in part, responsible for the success of this meeting. Accordingly every member of it is a member of at least one of the sub-committees.

The scheme of organization includes a general committee composed of the chairmen and vice-chairmen of the various sub-committees and several members at large. Each sub-committee

is a complete unit having a secretary to keep records of its proceedings in order that they may be available for the meeting of the clubs next year. The plan of having every member of the club on one of the sub-committees is proving very effective, not only in taking care of the details of the coming meeting but also in interesting all the men in the success of the enterprise and in the Pittsburgh club.

The program for the meeting is as follows:

Friday morning, February 19, registration; Friday noon, luncheon by classes; Friday afternoon, excursions to optional points, probably in small groups; Friday evening, smoker at the University Club. Saturday morning, excursions; Saturday noon, course luncheons; Saturday afternoon, excursions; Saturday evening, banquet.

On Friday afternoon tea will be served informally at the Twentieth Century Club for the visiting ladies, and on Friday evening a theater party will probably be arranged.

Speakers for the banquet have not, as yet, been wholly decided upon. The business meeting of the associated clubs will be held during the course of the banquet.

Following is a list of committee chairmen, vice-chairmen and secretaries:

COMMITTEE CHAIRMEN, VICE-CHAIRMEN AND SECRETARIES

Registration: J. O. Handy, '88, 5723 Woodmont St.; W. F. Davidson, '01, 624 Farmers Bank Bldg.; M. A. Grossman, '11, Pgh. Testing Laboratories.

Finance: Geo. Faunce, '82, 1010 Benedum Trees Bldg.; H. D. Shute, '92, Care W. E. & M. Co., East Pittsburgh.

Accommodations and Transportation: T. H. Bakewell, '76, 5529 Fifth Ave.; W. B. Blake, '87, 1101 Penna. Station; Z. M. Briggs, '99, 1101 Penna. Station.

Hospitality: S. B. Ely, '92, 5122 Pembroke Place; W. E. Reed, '97, 1662 Frick Annex; Bradley Dewey, '09, East Liberty Y. M. C. A.

Class Luncheons: E. D. Barry, '95, care Universal Portland Cement Co., Frick Bldg.

Course Luncheons: E. B. Raymond, '90, care Pittsburgh Plate