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The assistant editor takes up the management of this issue with no little trepidation but as there is no other one of the Board in town to undertake the work we must do it, and we crave the forbearance of our readers for any mistakes or oversights which they will probably find in this number.

In order to report more fully the occurrences of Commencement week, we have added four pages to our regular issue, and in order that we may present to our readers the splendid address of Professor Alden, four pages more, making a double number. We print this address because we have read it with a great deal of interest, and found in it a careful discussion of questions which have often occupied our mind. We know that every graduate and undergraduate of the Tech will read with delight this address on the aims and purpose of the Institute.

We have never been anxious to see the Tech broaden out into a university, but we are anxious to see every department, at present carried on, so strengthened and enlarged and more of a scientific nature added, that the Worcester Polytechnic Institute may stand in the very front rank of the scientific schools of the world.

Commencement week has come and gone. The corridors of Boynton Hall, the walks around the Institute grounds and the Laboratories have thronged with students, friends and Alumni, but now all is deserted and quiet, save at the Washburn Shops, where the grimy mechanics are “making up time.”

Words of parting have been said by many and it now becomes our duty to make our farewell address and say good-by to '92. But is that the right word—No, it would be wrong for us to say good-by. By the years spent here, years of the best and most active part of our life spent in the training and development of eye and hand and mind, by the friendships formed between students and between student and instructor, we cement a bond of attachment to the Institute which time and space can never annihilate. True, the time comes when each class must leave these walls and become scattered over the world in the varied pursuits of life. But only a different relationship is assumed—the step is only from student to Alumnus.

As students, the class of '92 have been an honor and credit to the Institute, by their efforts and with their stimulation life at the Tech has been made more valuable and pleasant in many ways. And now as they go forth to take their places with the ever-increasing body of Alumni, we bid them God-speed. May they never sever the ties which bind them to their Alma Mater, never forget the debt of gratitude they owe to her, and may they generously remember her as
time goes on and fortune and prosperity come to them, as we hope may in the near future.

This issue will reach the students as they are scattered over the country in their homes. The past year has been to most of them a year of steady work, and as they look back, it must be that a feeling of pleasure arises over the work accomplished and progress made.

To those who have made earnest endeavors, what seemed mountains in the way of their advancement have vanished into molehills, and the end of the year is reached in triumph. We wish to all a long, pleasant vacation, and hope that all may gather once more in the Fall refreshed and strengthened by the vacation, and prepared for another year of faithful study and earnest endeavor.

The year now closed has witnessed marked advances in all departments of activity at the Tech, and we will return next September to find more commodious shop accommodations, more valuable apparatus for our use, and increased and better facilities for instruction in many ways, but there is little probability that there will be any better or more improved facilities for athletics.

It is needless for us to dwell on the place which athletics does and should hold in American college life. The systematic development and training of the body should go hand-in-hand with that of the eye and mind. Neither is it necessary for us to repeat the old story of the Tech’s situation in this line. Every student, Alumnus and friend of the Institute knows that we are far behind the times. The words of one of the speakers at the recent Alumni banquet are ringing in our ears. We cannot quote them but the idea was that “Over five hundred young men are holding positions of trust and responsibility and are earning wages which their Tech education enabled them to hold and earn.” Should they not consider it their duty now to remember their Alma Mater. A little from each one would enable us to start a good gymnasium, and then we could soon take our rightful place among American colleges.

We are, personally, ashamed to see the Institute represented by such specimens of playing as our ball team gave us recently. We have never been anxious to see athletics in any form made over predominant in Institute life but we do believe that with the proper means for practice, the Tech should hold her own on the base-ball and foot-ball field of New England, and at the Inter-collegiate meet.

We must, however, take things as they are and not as they should be. There is promise of a successful foot-ball season. We hope that each student will come back with a resolve to vigorously support with all the means in his power our foot-ball team. Can we not retrieve our name and win honor in this sport? We believe that we can if the proper support is given.

We have with us, also, much excellent material for track and field athletics. Let us in the early fall find out just where this material is, perhaps by a field-day of handicap sports, in order that new men may be brought out. Then let us see to it that our men are trained as much as our means will allow, and there will be no reason why we should not vie at Springfield for first place with Amherst and Dartmouth.

And now just a word for the Socialists’ book. L’Exposé has appeared. It is gotten up prettily and tastefully. The binding and press-work are neat and effective, the illustrations excellent and the text interesting and well written. And the book is in every way a credit to its authors. Much time and pains have been consumed in its production, and we hope that every one of
the five hundred and one copies will find a ready purchaser. Much to our regret space in this issue has forbidden us to print at length the orations, poem and history of Class day, but in L'Exposé they can be found entire and in a lasting form.

**NEW FACULTY APPOINTMENTS.**

*Successor to Prof. Smith Chosen.*

Asst. Prof. U. W. Cutler has been appointed Professor of Modern Languages and will next year take the Seniors for two exercises weekly for three-fourths of the year in English Literature. The instruction in this course will be somewhat different from that hitherto given in this work.

Prof. William MacDonald, who for two years has been pursuing advanced studies at Harvard, and who previously taught six years in the University of Kansas, has just been elected Professor of History and Economics, and will enter upon his duties at the beginning of the next Institute year. He will instruct all the Seniors in Political Economy and Civil Government, giving to a considerable extent original lectures, and will have charge of the special historical studies of the course in Physical and Political Science. Prof. MacDonald is highly commended by Professors Channing, Marsh, and Taussig of Harvard, by Col. Thos. W. Higginson, of Cambridge, and especially by Pres. Snow of Kansas University who writes: "Mr. MacDonald is a man of great force of character and splendid abilities. We were sorry to lose him from our institution."

**ENTRANCE EXAMINATIONS.**

The examinations for admission to the Institute which occurred the first part of Commencement week were taken by 38 young men. Three candidates also took the examinations elsewhere—one each in New York, St. Louis and San Francisco.

**CLASS DAY EXERCISES.**

Owing to the great parade and demonstration of the Odd Fellows in connection with the dedication of their Home on Wednesday, the Class Day exercises occurred on Tuesday. The weather was delightful and warm, but about noon the heat increased and the appearance of the sky portended a thunder shower. Nevertheless a large audience, largely composed of ladies, gathered on the seats which had been erected in the little grove in the rear of the magnetic laboratory. A platform for the speakers of the day had been arranged north of the laboratory, and was draped with the class colors and set with palms and potted plants. Battery B band, stationed at the foot of the hill furnishes music, while a piano was on the platform for the accompaniment in singing the ode.

At 3 o'clock the class assembled in front of Boynton Hall, and marched down the path which their feet have trod so many times, and took their seats in front of the speakers' platform.

After selections by the band, Frederick W. Collier, President of the class, welcomed the audience in a few well chosen words.

Mr. Collier then introduced Mr. Frank B. Knight who delivered taking as his subject, "The Dawn of Industrialism in Europe," the

**Tree Oration.**

"The rise and fall of nation after nation has given attestation to the fact that each civilization has in turn been the possessor of an ever deepening current of human purpose which has borne on its bosom the best of each decaying age, and carried it on into the newer and better development of the next.

"History forms but the record of an age of contest. Life has throbbed with the conflicting clamors of nations and races. The martial hero has been the worshiped of all ages and peoples. But a clearer insight reveals the signs of a new age that shall be unconformable with the past. The age of militancy is tottering on the brink of dissolution; the age of industrialism is shedding its increasing light over the re-splendent, yet waning, glories of the militant organizations that glitter so brightly in the continental society of to-day.

"European society hangs upon the delusion that its safety lies in arms—in reality its greatest peril. The soldier's calling has become the bond of national unity, and its maintenance the burden which is crushing the life blood out of the nations of the old world. Its military systems are the common woe and curse of Europe. The military appropriations form the largest item of the yearly budget in times of peace.

"Greatly has industry suffered from the enforcement of the principle of inheritance in position and employment, instead of the principle of efficiency, the true rule of industrialism. It has not yet been learned that industry is a growth, and not an artificiality; a creature of contact, and not of class distinctions. Coercion and industrial progress are not synonyms.
"We have had every age but the age of labor. That the age of labor is dawning in continental life is not so clearly perceived as that militancy has attained a height at which longer maintenance must end in bankruptcy and war. Germany pleads her geographical position as reason for her armament. She cannot disarm until the other powers agree. A few years ago a proposal for a mutual disarmament was made, but as yet no state has dared to support so radical a policy. Arbitration is a matter of slow growth, and fierce hate animates the government of more than one continental state. It seems to require a long sight down the vistas of the future to the time when men shall say:

'War fails, try peace, put up the useless sword! And peace unweaponed conquers every wrong.'

"What concern is all this to us, who are leaving the doors of an American engineering school to enter upon a life-work probably largely to be lived in America? Vastly more are we to influence the course of continental events than we imagine. The eyes of Europe are upon America and her industrial progress. If a peaceful solution is to be found for the vexed problems of the old world, it will be largely influenced by the course of American industry. We are demonstrating that the progress of industry is coeval with the rise of representative government, representative in principle, not necessarily patterned after our own in detail. Yet, though our progress is noted so closely, not less closely is observed our treatment of industrial disturbances. And it is here that we must prove that we are an example of a more complete industrialism; it is here that, as educated men, we must measure our responsibility not merely by the immediate necessity but by the realization that upon American progress industrial, hangs also the fate of other nations and other peoples."

The Class History was read by George F. Freed. All the prominent events connected with the class since its first entrance to the Institute were narrated.

During Mr. Freed's reading the clouds had been gathering in the distance and low mutterings of distant thunder had been audible, but still it did not seem as if there would be an immediate outburst, and all were loath to leave their pleasant seats in the shady grove where a cool breeze was playing, for the close atmosphere of a hall.

After music by the band Mr. Michael J. Lyden was introduced to deliver the Class Oration on "Law." He had hardly commenced speaking, however, when it began to sprinkle, and as there seemed to be no other course, the audience adjourned to Boynton Hall just in time to escape quite a shower.

Chapel was crowded to overflowing. Probably never before in the history of the Tech have the faces of the benefactors of the Institute looked down from the walls upon such a sea of fair faces. After all were accommodated with seats as far as possible the exercises proceeded.

Class Oration.

"The study of any science reveals most conclusively the existence of certain well defined laws. In no other field is this fact more apparent than in the natural world. Here nothing is left to chance, nothing is abrupt. Upon the face of nature is written a law, and in her perfection is shown the fulfillment of that law.

"In the most delicate coloring of the fairest flowers that ever bloomed, in the strong, stern beauty of the mightiest oak that ever flourished are evidences of an all-pervading law. Yonder stands our class tree; about its roots the mother-earth has been tenderly deposited; through its fibres the life-current courses; it rears its slender arch as if to drink in the warm sunshine and the pure air. Its tiny twigs, the tracery of its half-formed leaves, illustrate the workings of a law universal in its application.

"Man, in addition to acknowledging the dictates of these laws of nature, must accede to the obligations imposed upon him by society. These obligations, without which no society could live, constitute the law. From its very origin, law must be the expression of public opinion. It cannot be peculiar to a single state or nation, but is the same everywhere."

"Law is a living force. All mankind is pervaded with its subtle influence. Its silent reign is manifested in the order maintained, in the confidence with which we transact our ordinary business, in the assurance we have of our personal security.

"The abuses which law suffered in the middle ages during the rise of the powerful nobles, contributed much to the disfavor in which it has since been held. When none could expect justice unless backed by ready hands and willing swords, law reached its lowest point and lived only in the volumes of the antiquarian. But law has recovered its influence until now, supported by just men and directed by wise minds, it more truly reflects the sentiments of the commons.

"Too often does law seek to enlarge its sphere. Too often have we seen it assume liberties to which it had no right, and the result was failure. With law proceeding in its proper channel, the benefits flowing from it are obvious. Peace and happiness are spread throughout the
land, evidences of prosperity are upon every side, the works of genius and talent are everywhere displayed, the liberties of freemen are inviolated!

"We have grounded in us a deep respect for law and the fundamental principles of our constitution. The liberty which cost so much has served to strengthen the devotion we cherish towards law. The result is that the United States stands pre-eminent among nations for her constant exertions in behalf of law and order. ‘Let us have peace’ was the last utterance of her great general. The spirit that impelled these words may serve to animate us until law is supreme, till battles and sieges are but remembrances."

Mr. Joe H. Wallace read the class poem which called forth many smiles, and a good round of applause.

The Class Ode was sung by the class, Mr. Richard H. Thompson, the author, accompanying on the organ and two members of the band on their cornets. With this the exercises concluded. Quite a number of those present took the opportunity of viewing the exhibit of the work of the different classes in free and mechanical drawing.

Lack of space has permitted only extracts from the orations to be printed.

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THE SENIOR RECEPTION.

Although many unexpected things happened to thwart the plans of the Seniors for their reception, yet it occurred on Tuesday evening, and was a splendid success, and '92 may well feel proud of the manner in which it made its exit from the Salisbury Laboratories.

The Mechanical Model room and the Drawing room opposite were handsomely decorated, the walls being draped and the posts entwined with the class colors, while pictures hanging on the walls and resting on easels, palms and potted plants, rugs and furniture all served to turn the rooms into places of beauty and comfort.

In the latter room were Prof. and Mrs. U. Waldo Cutler and Rev. and Mrs. C. M. Southgate, who received the guests as they arrived and were escorted thither by the ushers. The floor of the former room had been carefully waxed and afforded an opportunity for dancing to the music which was furnished by Bird's Orchestra of Marlboro, stationed at the end of the hall.

During the evening refreshments were served from the Physical Laboratory on the third floor. The Physical Lecture room was lighted up and was principally used for enjoying the refreshments.

A large number of invitations were sent out, and judging by the number who were present there must have been a general response. By nine o'clock the rooms were crowded with relatives and friends of the Seniors. Those who received were kept busy for a long time shaking hands with and welcoming the guests of the evening. It was a radical change which the building had undergone in every way. Instead of the noise, rumbling and blowing of the triple expansion engine, electrical machines, etc., was heard the tripping of the dancers as they kept time to the music, the hum of conversation, and the ripples of laughter provoked by some Senior, merry because his school-days were closing. Instead of the odor of H₂S and other chemicals, the air was perfumed with roses and flowers, and instead of students carrying armfuls of books and weary looking faces through the corridors, were seen the fair faces and gay dresses of the young ladies as they promenaded from room to room.

It had been hoped that the large flat roof could be lighted up and used, and it would have made a delightful annex to the reception, but it seemed best not to carry out this plan. The walks leading to the gates and around the buildings were illuminated with Japanese lanterns which gave a very pleasing effect to the grounds and afforded a pleasant walk in the warm summer air.

It is safe to say that all present thoroughly enjoyed the reception, and that it was the most successful affair in the social history of the Tech. It is to be hoped that coming classes will follow the example of '92, and endeavor to make still more pleasant and interesting the social life of the Institute. The rooms of the Laboratories are large and commodious, well suited for the purpose of social gatherings, and admit of easy and tasteful decoration. The past year has seen a remarkable stimulus given to such affairs and we hope to see the work carried on next year.

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THE ALUMNI ASSOCIATION.

Annual Meeting and Banquet at the Y. M. C. A. Building.

The nineteenth annual meeting of the W. P. I. Alumni Association was held on Wednesday evening, June 22nd, in the parlors of the Y. M. C. A. The business meeting was called to order at 6:45 o'clock by Pres. Charles G. Washburn. After the class of '91 had been formally admitted to membership in the association, the following list of officers for the ensuing year was unanimously chosen: Secretary, William L. Chase, '77; Treasurer, Edward K. Hill, '71;
Executive Committee, U. Waldo Cutler, '74, Charles G. Washburn, '75, H. W. Wyman, '82, L. W. Southgate, '85, and Frank Aborn, '72, the President of the recently organized Western Alumni Association of the W. P. I. At a subsequent meeting the executive committee re-elected Mr. Washburn, '73, President.

The appointment of the Alumni members of the '93 Examining Board was left with the President as was also the appointment of the Visiting Committee which will be announced later.

Several propositions were discussed for the disposition of the Thompson Memorial Fund, among them that the fund be invested and the income expended in the purchase of books and periodicals for the Institute Library. It was voted that notice be given, in accordance with one of the provisions of the fund, that such disposition of the fund will be considered at the next annual meeting, and that meanwhile the Executive Committee invite further contributions to the fund.

Several tributes were paid to the memory of Dr. Smith and the President instructed to select a second member of a committee of two to prepare resolutions to spread upon the records of the association and to send to the afflicted family.

At about 8 o'clock the meeting adjourned and after a short recess, Pres. Washburn and Dr. Fuller lead the way to Association Hall where was held

The Banquet.

At the head table were: President Charles G. Washburn, Dr. Homer T. Fuller, Waldo Lincoln, Prof. Gray of Rose Polytechnic Institute, Edwin H. Whitney, '71, Stephen Salisbury, Louis W. Southgate, '85, Prof. George I. Alden, Prof. Joseph Beals, '85, and Prof. George E. Gladwin. Seated at the other tables were the following members of the Association:

F. W. Bateman, '71 F. T. Fay, '78
F. O. Whitney, '71 A. B. Upham, '78
E. H. Whitney, '71 W. W. Fisk, '78
E. F. Toiman, '71 C. D. Parker, '79
G. H. Scott, '72 G. T. Briggs, '82
S. P. Davis, '72 A. B. Slater Jr., '81
P. T. Denny, '71 H. C. Hastings, '82
U. W. Cutler, '74 O. L. Owen, '82
C. G. Washburn, '75 F. A. Foster, '82
J. M. Russell, '75 H. W. Wyman, '82
G. A. Ross, '76 W. L. Ames, '82
E. P. Adams, '76 C. A. Earle, '82
J. C. Woodbury, '76 H. F. Klinege, '82
L. H. Bateman, '76 W. F. Cole, '83
G. H. White, '76 A. W. Burnham, '83
James Logan — claimed by both '76-'77
W. L. Chase, '77 J. N. Heald, '84
J. F. Wilson, '77 W. W. Estes, '84
A. B. Clemente, '77 W. W. Southgate, '85
F. S. Webber, '85 H. L. Houghton, '89
J. G. Aldrich, '85 W. S. Ball, '89
Ralph Woodward, '85 H. E. Austin, '90
Norman Marshall, '86 A. B. Larchar, '90
H. C. Hawks, '86 H. P. Crosby, '90
E. F. Miner, '87 P. B. Morgan, '90
R. P. Gleason, '87 L. E. Booth, '90
C. J. Sawyer, '87 F. W. Treadway, '90
W. W. Bird, '87 E. H. Rockwell, '90
W. H. Kirchner, '87 L. N. Farnum, '90
G. I. Rockwood, '88 Joseph Devlin, '90
G. E. Camp, '88 H. P. Eddy, '90
W. E. Hartwell, '89 J. A. Whittaker, '91
J. J. Dassen, '89 N. V. Flitts, '91
E. W. Desper, '89 G. W. Booth, '91
A. P. Allen, '89 F. C. Hodgman, '91
A. W. Gilbert, '89 H. L. Dadmun, '91
L. L. Rheutan, '89

and the following were present as guests:

F. E. Hammond, '92 G. H. Day, '92
M. L. Grimes, '92 E. L. Mundlin, '92
E. H. Flish, '92 A. H. Smith, '92
F. W. Collier, '92 C. E. Alderman, '92
H. W. Bracken, '92 R. N. Clark, '92
G. F. Freed, '92 G. D. Ball, '92
F. B. Knight, '92 M. J. Lyden, '92
J. H. Wallace, '92 A. A. Pelton, '92
W. H. Converse, '92 A. B. Moulton, '92
G. H. Miller, '92 L. C. Smith, '92
F. W. Eastman, '92 E. W. Howard, '92
William Nelson, '92 J. F. Bartlett, '92
H. M. Southgate, '92 H. N. Paige, '92

After prayer by Dr. Fuller, an elaborate menu was served by Caterer Rebboli. Cigars were then lighted. President Washburn as chairman of the evening, spoke a few words in regard to the Institute. He said: "It has been said that the Worcester Polytechnic is a local institution. I think that is so and as a resident of Worcester I take pride that it is so. But it is growing rapidly and as it grows the constituency changes more than ever, and the Institute is losing its local flexion. As it does so it occupies a more important relation to the institutions of learning of the country, a result that is surely progressive." He then quoted statistics to show that such was the case.

Mr. Stephen Salisbury was received with prolonged applause. He said it gave him great pleasure to address a body of men at whose reunions he had been present for the twentieth time. He also spoke of the rapid increase in numbers and the growing importance of the Alumni.

Dr. Fuller presented figures to demonstrate the progress of the Institute. Ten years ago the membership was 123. It is now 246. The present seniors entered 32 men in the apprentice class. The next apprentice class will number not far from 80 men. There has been a great increase in numbers since the new tuition law went into effect. The school has the right to own $2,000,000 of property, and at present has $800,000. The shop addition is to be constructed at once.
Waldo Lincoln, treasurer of the corporation, thought it would be an excellent idea were the Alumni to give $4,000, and thus to found a scholarship fund, since at present there are many young men who are obliged to stop going to school for lack of funds. Indeed, but for financial assistance extended towards several of the students, the roll would be appreciably decreased.

Prof. Alden was called upon and said he imagined there were many gathered about who remembered when lessons were brought to a close by that ever familiar “Time’s up.”

Prof. Gladwin was congratulating himself upon his escape from giving a toast, but found he had been shamefully imposed upon. He said that during his rambles about the Institute it had occurred to him that the Alumni should be made better acquainted with its surroundings. So, from the north side of Salisbury's pond he had taken a sketch of the wire works, the electric light works, the boat houses, Salisbury laboratories, with Boynton Hall in the background. The whole formed a sketch that might remind those present of old times and associations. This sketch he had had photo-engraved and copies printed from the plate. These copies were down stairs, and all those who desired them might have them.

President Washburn, on behalf of the Alumni, thanked Prof. Gladwin with much feeling for his thoughtfulness in this matter.

Mr. Thomas Gray, professor of mechanics at the Rose Polytechnic, spoke briefly.

Mr. Wm. L. Ames, instructor at the Rose Polytechnic and an Alumnus of the W. P. I., said the two institutions were linked together by very strong bonds, in that the same man, Prof. Thompson, had been the President of both. He spoke of the success of his students in base-ball and football, and said all needed now was another Mr. Salisbury to help on the school with material aid.

Dr. Fuller, in answer to a question to that effect, stated that the people of Worcester subscribed money enough to build Boynton Hall and to buy the land; also that John Boynton's fund is being used for scholarships.

James Logan said he often thought the Alumni should be able to do much for the Institute. There are at present five hundred men earning much better wages than they could hope to obtain were it not for the education received at the Tech. It would require but an extremely small sum from each to lay the foundations of a great fund. He hoped to see this in the near future. In conversation with an acquaintance of his who had graduated from the W. P. I., and had entered the employ of G. S. Morison, the famous bridge-builder of St. Louis, he was told the following story: Mr. Morison often had conversations with this young man, regarding the importance of different polytechnic institutes, but neither ever mentioned this in Worcester. One day a friend of Mr. Morison's had a long talk with the latter, concerning the advisability of sending his son to such an institution. Incidentally he asked Mr. Morison's advice upon the matter. The latter gave quite a list of what he considered the best schools of the kind. At the end he thought a while and said: “In addition to all these there is another one down in Worcester. I don't know much about it, but I do know this, that it turns out men.”

The advisability of appropriating enough to erect a monument over President Thompson, who is buried at Rural Cemetery, was next brought up, but was left over to the

Business Meeting.

After the banquet the business meeting was resumed in Association Hall, at 11:10 P. M. A report from the Visiting Committee on Mechanical Engineering was submitted by L. W. Southgate, '85.

Report from the committee on Drawing was made by W. W. Bird, '87, and from the committee on Chemistry by J. M. Russell, '76.


Owing to the occurrence of the World's Fair in Chicago next year, the proposition was made that the regular annual meeting of the association for 1893 be held in Chicago. It was also proposed that a special meeting be held there at that time. After considerable discussion on the subject it was finally voted to leave the decision in the hands of the Executive Committee. General sentiment was against the first proposition, but it is probable that some arrangements in connection with the World's Fair will be made by the committee.

A little after midnight the meeting adjourned and thus ended one of the most pleasant and profitable gatherings of the Alumni which has taken place for several years.

WASHINGTON ALUMNI.

Hold their Annual Reunion.

The annual meeting and dinner of the Washington Branch of the W. P. I. Alumni Association was held Wednesday evening, June 22nd, at Hotel Johnson, in Washington, D. C. The branch is in a thriving condition and this was
the largest meeting that has been held. During the last year several additions to the membership have been made and on the evening of the reunion the classes of '83, '86, '87, '89, and '90 were represented.

Mr. James H. Griffin, '85, was elected President and Mr. Louis H. Harriman, '89, Secretary and Treasurer for the ensuing year. The following resolutions were passed and sent to the WPI for publication:

Resolved: That in the death of Edward P. Smith we believe the Trustees of the Institute have lost the services of one whose conscientious devotion and unerring labor have made those services of inestimable value:
That the Faculty have lost an associate, the strength of whose individuality and the wisdom of whose counsel have been second to none:
That the students and Alumni have lost a teacher and friend the depth of whose sincerity the lapse of years but made the more manifest.

WESTERN ALUMNI

Hold their Annual Reunion also.

The Worcester Polytechnic Alumni Association of Cleveland, O., met to hold its first banquet to entertain Alumni guests of that vicinity June 20th, at the Hollendon Hotel, Cleveland, O. It adopted the following constitution:

"This association shall be called The Worcester Polytechnic Alumni Association of Cleveland, O.

The object of the association shall be the bringing together of the graduates of the Institute more closely for social recreation and for the advancement of this Institute's interests in this vicinity.

All graduates of the Institute and undergraduates who have attended at least one year, and residing in this vicinity, shall be eligible for membership.

Meetings shall be held semi-annually in June and December on such date and at such place as shall be selected by the Executive Committee.

The officers shall consist of a President, Vice-President, and Secretary and Treasurer chosen annually at the June meeting. The conduct of affairs of the association shall be vested in the board of officers, ex-officio, who shall constitute an Executive Committee. Necessary expenses shall be met by assessments, levied by Executive Committee and collected by the Treasurer.

This constitution may be altered and amended by a two-thirds vote of all the members.

The President may call a meeting at any time and shall call a meeting at the request of any two members."

The following officers were duly elected:

Frank Aborn, '72, President; John S. Oliver, '82, Vice-President; Jang Landsing, '87, Secretary and Treasurer.

The association passed resolutions of regret that it could not be present at the Worcester meeting, on the 22nd.

CLASS REUNIONS.

Sixteen Members of '72 at Belmont House.

For the fourth time since its graduation twenty years ago, the class of '72 held a reunion, Thursday evening. It held its first reunion after graduation in 1872, when the whole class numbering sixteen members, the full number of graduates, were present. Since then, once in five years, the class has gathered to talk over old days, class affairs, and to renew the bonds of friendship.

This year, the reunion was held at the Belmont House at the Lake. An excellent dinner was served by Landlord Fay and was enjoyed by all present. After the banquet, the class adjourned to one of the parlors and spent the evening in an informal manner. No regular toasts were responded to but all had an enjoyable time. In the absence of the president, the vice-president, Mr. O. Willis Rugg of this city, presided. The following gentlemen were present: Parkman T. Denny, Leicester, Mass.; S. P. Davis, Hartford, Conn.; J. L. Moore and M. B. Smith, Lowell, Mass.; C. Heald, Boston, Mass.; George Palmer, New York; Harding Jenkins, Barre, Mass.; George S. Scott, O. W. Rugg and A. W. Woods, Worcester.

The officers of the class are: President, Daniel P. Wright; Vice-Pres., O. W. Rugg; Secretary, P. T. Denny; Treasurer, Jonathan L. Moore.

First Reunion of '90 at the Bay State House.

The class of '90 held its first reunion at the Bay State House, Thursday evening, a large number of the class were present and a merry time was had. After a banquet, a business meeting was held and the following officers elected to serve for two years: Pres., Elmer C. Rice; Vice-Pres., Paul B. Morgan and Windsor T. White; Sec. and Treas., Alton L. Smith; Executive Committee, the officers and W. L. Smith, J. H. Devlin, C. K. Prince and L. N. Farnum. The following resolutions were passed on Prof. E. P. Smith's death:

Whereas: The Class of '90 of the Worcester Polytechnic Institute in common with the entire Alumni, deeply feel the loss of their late instructor, advisor and friend, Dr. Edward P. Smith, whose recent sudden demise casts a shadow over this their first reunion, and believ-
ing as they do, that in his death the institution has suffered an irreparable loss;

Resolved, that we hereby express our ever increasing appreciation of the benefit that we derived from his instruction and from contact with his strong and manly personality; and

Resolved, that we sincerely sympathize with his family in their bereavement; and

Resolved, that these resolutions be spread upon the records of the class, and that a copy of the same be sent to the family of our late instructor.

Francis W. Treadway,
Stanley H. Rood,
Louis E. Booth,

Committee for Class.

After the meeting a speech was made by each one present, with Elmer C. Rice acting as toastmaster. A barge was then hired and the class drove about the streets and succeeded in letting Worcester know that W. P. I., '90 was still alive and strong as ever. Boynton street was visited and all the professors remembered while Dr. Fuller was compelled to appear and make a speech.


Clarence G. Davenport and Frank B. Whipple, ex-members of the class, were present as its guests.

Members of '88 gather with '90 at the Bay State House.

The class of '88 also held a reunion at the Bay State House, but in an informal manner. There were present Messrs. G. E. Camp, Jersey City; F. D. Holdsworth, Warren; J. H. Jenkins, Lynn; R. L. Lovell, Lynn; G. M. Warren, Staunton, Va.; H. E. Rice, and G. I. Rockwood, Worcester. The banquet was held in the next room to the one occupied by '90, and through the closed folding doors many courtesies passed which only a Tech graduate understands.

READING OF THeses.

Portrait of the late Philip L. Moen presented to the Institute.

The Commencement exercises began Thursday morning with the reading by the seniors of their theses in the chapel. The examining committee consisted of Geo. F. Blake, Jr.; Chas. E. Alger, S. B., Springfield, Mass.; Wm. L. Ames, S. B., Terre Haute, Ind.; and Chas. D. Parker, S. B. These gentlemen were seated just in front of the platform and their questions were answered with promptness and intelligence.

Each member of the senior class had prepared a thesis; these papers were left with the committee. Abstracts of ten of these were read by the writers.

The following is a list of those who read, the titles of theses have been published in a former number the W P I:

Department of Chemistry.—Fred A. Morse. Department of Civil Engineering.—Frank B. Knight, Joe H. Wallace, Eugene L. Mundin, Arthur H. Smith.

Department of Mechanical Engineering.—Theodore E. Brayton, Jr., Frederick W. Collier, Elmer H. Fish, Erwin W. Howard, George H. Miller, Louis C. Smith.

Each thesis was illustrated by drawings prepared by the writer.

After the exercises a portrait of the late Philip L. Moen was presented to the school by the family of the deceased. The portrait, which is the work of Billings, the celebrated Boston artist, is a remarkably fine likeness, in an elegant frame; it makes a valuable addition to the property of the Institute.

DR. FULLER'S RECEPTION TO THE SENIORS.

From 4 until 6 o'clock Thursday afternoon, Dr. Fuller gave a reception to the senior class at his home on Boynton St. The guests were received by President and Mrs. Fuller, Prof. and Mrs. Alonzo S. Kimball and Mrs. Milton P. Higgins. Harry Sinclair, '93, and Edward W. Vaill, Jr., '93, acted as ushers. Among the guests outside of the class were Gen. A. W. Greely, Stephen Salisbury, Waldo Lincoln, Mr. and Mrs. G. Henry Whitcomb, Wm. H. Bartlett, Dr. John G. Wight, John A. Shaw and wife, Rev. and Mrs. C. M. Southgate, Rev. Dr. W. V. W. Davis. The rooms were profusely decorated with flowers. Light refreshments were served. The reception was a successful social gathering which would serve to leave pleasant memories in the minds of student and professor of the last days of college life.

THE GRADUATING EXERCISES.

Association Hall was filled with relatives and friends of the class on Thursday evening. The hall presented a very pleasant sight. The galleries extending around the sides were draped with the crimson and black, '92 colors, while the stage was handsomely decorated with potted plants. The Elberon Orchestral Club, stationed
in the gallery on the right of the platform, furnished music between the addresses and remarks and was a pleasant change from the old custom.

Upon the platform were seated Gen. A. W. Greely, the orator of the evening, Waldo Lincoln, Secretary of the Trustees, who presided over the exercises, President Fuller, Prof. G. I. Alden, Prof. G. E. Gladwin, Prof. M. P. Higgins, Prof. J. E. Sinclair, Prof. A. S. Kimball, Prof. U. W. Cutler, Prof. L. P. Kinnicutt, Prof. G. H. White, Prof. G. D. Moore, Prof. L. L. Conant, C. H. Morgan, C. G. Washburn, Stephen Salisbury, G. H. Whitcomb, Rev. C. H. Pendleton, Mayor F. A. Harrington, W. H. Bartlett, Judge T. L. Nelson, Prof. J. A. Shaw, Rev. C. M. Southgate, C. E. Stevens.

At 8 o'clock, the Senior class, led by the chief usher, entered and took seats in front of the platform, while the orchestra was playing. Rev. C. M. Southgate then offered prayer, and after a cornet solo with accompaniment, Mr. Lincoln introduced Gen. Greely somewhat as follows:—"Within recent years no event has so thrilled the civilized world as the heroic rescue which occurred eight years ago yesterday of that gallant band of men who only for the cause of science endured the horrors and privations of three Arctic winters. By their efforts America was placed in the van of the nations that have added to the world's knowledge by exploration. The story of their researches and rescue should be of interest to every scientific student as well as to every citizen. It is your pleasure to hear and my pleasure to introduce to you the hero of that party, Gen. A. W. Greely."

Gen. Greely, who is a rather large, fine looking man with gray hair and a heavy, brown beard, was cordially received by the audience and spoke for nearly an hour. His address was very interesting but lack of space forbids our printing it at length and we can only give a fragmentary report.

**General Greely's Address.**

**Mr. President, Members of the Faculty and Gentlemen of the Graduating Class:**—

"It is certainly a departure from the commonplace for the Board of Trustees to ask a professional soldier to address you, and I should feel out of place did I not know that my predecessor of a year since was a soldier par excellence. If Gen. Walker no longer wears the regulation uniform, he none the less guards the soldierly instincts deep in his heart during these piping times of peace, which in a measure must seem to him at times out of joint."

The speaker then treated further of the soldier and the qualities which characterize the successful typical soldier after which he said:

"It gives me a thrill of pleasure to face so many young, vigorous, educated men who find pride in having learned well to do manual labor. The dignity of labor no manly man ever questions, any more than he questions its necessity. But your training is to the end that you may largely or entirely do the higher kind of work, that whereby the noblest faculties God has given us are called into play.

"The manifold advantages of technical education to New England are beginning to receive their due and proper acknowledgment, and in bringing about this result no school has done more than the Worcester Polytechnic Institute.

"Furnished with tools and devices of the latest pattern, directed by theoretical and practical instructors of the highest standard, fostered by trustees of national reputation, you have surely commenced well your education. But do you realize the responsibility such splendid advantages entail, the burden of application, thought and labor essential in the years to come, that your perfected education and ultimate results may do credit to this institution? I have said your education is here commenced, for it is difficult to persuade young men that their graduation from college does not mean that their education is completed. The diploma only signifies that the training of one's faculties has reached such a stage of development that the individual is capable of pursuing his education alone. Here, you have had others, if not to see for you, to indicate where and how you should turn in order to solve any given problems, or indeed to select such for solution as involve principles worthy of earnest attention. Here you have acquired the habit of looking at things, but have you so wisely looked and thought, and pondered, that from this day forth you will commence to really see things so that they will enter into your daily life and toil? If so, you have indeed done well.

"To do work of the highest order necessitates an increasing study of natural laws, and thus seeing cause and effect you speedily learn how to deal with them. It is indeed true that it is beyond the power of mankind to control a single force of nature, but the story of accomplished progress marks how successfully man's intelligence and ingenuity have so used these forces as to bring about specific ends of enormous benefit to his well-being."

After stating that the power of seeing is given to man in varying degrees of efficiency and that the importance of perspicuity as a factor of accomplishment varies according to the subject under discussion, Gen. Greely illustrated his
point by the wonderful results obtained by the Lady Franklin Bay expedition in the discovery of botanical specimens in Grinnell Land hitherto unknown. He also spoke of the difficulty of making certain physical experiments in the Arctic regions and the devices resorted to to accomplish them. After showing the importance of nature as an educational and recuperative force and the difficulty of many people coming into contact with nature on account of the proportion of population centered in cities, he said that association with the study of nature has a threefold effect—physical, mental and moral.

The duties of citizenship were treated somewhat at length but the following words deserve especial notice.

"Man's education is true, only so far as it fits him for a complete life. The power and energy of manhood attain their fullest fruition only through conjoined practice and science. These foundations of success you have successfully laid, and the present extraordinary prosperity of this country makes the prospect fair for your material future.

"But merely to do is not all of true life. The man of to-day owes more than ever a debt to his fellow-man—socially as a neighbor, politically as a citizen, religiously as a Christian, and sympathetically as a human being. The man who enjoys all the security, comfort and luxury of modern civilization without putting his shoulder to the wheel of progress is in effect a thief.

"It should not be necessary to say aught to you as to the urgent need of patriotism, of love of country, of pride in American citizenship."

Gen. Greely also spoke of the stimulus given to an observing person by the varying phases of nature—of storm, of rain, of trees, of flowers, and spoke of the impressions made upon him by the beauty of nature's simple productions after his return from his long sojourn in the land of perpetual snow and ice. After describing his difficult and laborious ascent of the central mount of Grinnell Land hitherto never trodden by the foot of man, and the feeling of victory when from the summit he looked out over the northern lands, he concluded with these words:

"Doubtless some of this class have come to this day through weary, monotonous months of toil, with much the same effort, suffering and determination as marked my journey, and to such it must be a foretaste of paradise now to look out on the fair prospect of the unknown future.

"It must be with a certain degree of impatience that your strong, exuberant natures have tolerated the exercises of to-day, so eager are you to enter out into the future and conquer the career awaiting you. Even the most polished and wisest of discourses would lose force before such an audience, which, weary of scholastic utterances, craves true eloquence in its very essence as defined by the master Demosthenes, 'Action, action, always action.'

"Thoroughly drilled and disciplined soldiers, when moving into fierce action, obey unconsciously the last word of command. So perhaps some word here uttered, or, better yet, some thought, now incited, may not be without its fitting influence in the busy future, that future in which kith and kin, friends and the world demand that you quit yourselves like men. Then

'Haply from you the toiler, bent
Above his forge or plough, may gain
A manlier spirit of content,
And feel that life's wisest spent
Where the strong, working hand makes
Strong the working brain.'"

After the applause which followed the address, Michael J. Lyden was introduced, and in behalf of the class delivered the following

Valedictory.

LADIES AND GENTLEMEN:—Once again have the portals of Boynton Hall swung back to permit the departure of another class. Years have come and gone; the ranks of the Alumni have been rapidly increased, yet the Institute continues in her important work, never more prosperous than now, never more sanguine for the future. She depends upon the success of her graduates to demonstrate the advantages of her peculiar line of study. You have gathered here this evening to participate in the formalities incident to the close of another year. We bid you welcome, welcome to this hall, welcome to the last exercises of the Class of '92.

CITIZENS OF WORCESTER:—You have witnessed the graduation of many classes, but probably none has been able to lay such claim to your attention as this. The Institute is far from being local, its students come from all sections, yet the majority of this class have their homes in your city. It is therefore in the dual capacity of friends and relatives that we appear before you. Most heartily do we thank you for your kindly sympathy, your hospitality, your benevolence, whenever the Institute's needs have been concerned. You extend to us advantages that cannot be surpassed. The grounds, the laboratories, the varied resources stand fitting testimonials of Worcester's esteem for learning. We hope the ensuing year will see yet more proofs of your liberality. The several departments which are hampered
for want of apparatus will certainly not appeal to you in vain for aid. The Institute is worthy of that aid. The value of the work becomes more apparent as time passes. Her light thrown abroad and reflected back in the deeds of her graduates, adds renewed lustre to an already assured fame. She strives to inculcate in us a reverence for that nation whose freedom and enlightenment have made it possible for her to attain her present proud eminence. Should the day come when the institutions, the liberties of America are in peril, among the first of our country's defenders to gather around her standards will surely be the graduates of the Worcester Polytechnic Institute.

GENTLEMEN OF THE BOARD OF TRUSTEES:—Though no radical changes have been introduced during the past year yet evidences are abundant of a more systematic arrangement, a concentration as it were of the forces at command. The Institute must branch out still further to keep pace with the rapid advancement of other colleges. Her growth can not stop here. It must either go on or life must cease. You have chosen to stimulate that growth. The development may be read in the now crowded condition of the buildings. All this attests not only the welfare of the school but also the wisdom of those to whom that welfare is due. The discussions made regarding a four years' course suggest a step in the right direction. Should that course be adopted, it would tend towards more thoroughness since the difficulty, at present, is to retain what has been learned. The time may not be far distant when the funds at your disposal will cause the different departments to be more fully equipped, all on a par with each other, not one subordinate but all coordinate each to each.

GENTLEMEN OF THE FACULTY:—You must derive much satisfaction in seeing students grow under your care and in following their progress after graduation. Your opportunities for gaining the merit of each enable you to foretell with some degree of accuracy, their future careers. Upon many occasions has your timely advice been of great assistance to the student. It is pleasing to note that the Faculty and Undergraduates have arrived at a more cordial understanding. There will always be more or less friction between governors and governed. The desire of one party should be to respect and examine the position of the other. This has been done. You have manifested a willingness to investigate differences of opinion, and towards this graduating class have extended many courtesies.

Only a short while ago and from your midst, one was taken who has been an honored member of the Institute for twenty years. Not you alone but the undergraduates as well suffered a great loss in the death of Professor Smith. He was a man with a strongly defined personality, one whose helpful influence was communicated to all brought into contact with him. He took a delight in devoting his time and the treasures of a well-cultured mind to improving the studies of his class-room. He sought to plant in the breasts of his students a love for literature and political science. His indomitable will, his high standard of life will always exercise a beneficent effect upon those who were fortunate enough to receive his instruction.

UNDERGRADUATES:—This time, this place, these surroundings have conferred upon the graduating class certain privileges. Sanctioned by custom, we are empowered to offer you words of advice. Far be it from me to deviate in the slightest from this requirement of revered tradition. There are many things that might with profit be touched upon but time forbids. One very important element has been introduced into Institute life. The Greek Letter Society and the social organization of the seniors have given a salutary impulse to college feeling. Such societies if properly conducted will never prove detrimental to intellectual advancement. Support those already formed. They will teach you to regard your associates in another, a better, a clearer light. The students' attitude towards athletics has been finally decided. The enthusiasm evinced this season will do much to brightened the outlook for next Fall. I would urge you to exert yourselves in this matter and thus maintain the reputation of the Institute.

CLASSMATES:—It is a pleasant and a sad duty that summons us here to-night. Pleasant, because we are to receive the rewards of diligence; sad, because the time has come when we must part.

It is hard to realize that our acquaintance must soon end; that we are about to sever the tie which has bound us for so long, that the one word remaining for me to utter is "farewell." During these three years there has sprung up between us something more fervent, more enduring than the ordinary relations of man to man. Thrilled by the noble influence of student life, we have felt for one another a brother's interest; held together by the bond of friendship, we have passed through Boynton Hall, and now we separate. This, perhaps, is the last day we shall ever meet again as a class. True, our reunions may prevent us from losing sight of each other, but, for many, attendance at those gatherings will be impossible. Some go to seek fortune in the South, others journey toward
the West. A final good-by, and the dim distance conceals us from view. Despite the lapse of years, deep-shrined in the hearts of all will live memories of '92.

The lessons, the principles learned during our course, impress themselves most vividly upon our minds. Those lessons of industry, of thoroughness, of independence. Independence in thought and action, independence in daring to voice our own honest opinions. This is first. In its wake follow as contingent results, a nobler purpose, a more exalted manhood. Enter upon your new lives secure in your own convictions. March on to the future with a firm determination to surmount all obstacles. Though victory may not crown your effort, let the work you do in the world redound to your own credit and the honor of your Alma Mater.

Remarks of Dr. Fuller.

President Fuller, after the valedictory addressed the class saying: "I congratulate you, young gentlemen of the graduating class, on reaching this goal of your ambition. This is the day anticipated by some of you for many years, the day for which you hoped, for which you have striven and now in which you may rejoice. If life be divided into three spans, like the arches of a bridge, you have crossed one of them, the middle arch is before you, then you may go gently down on the other side. This is simply the measure of life by time. The simile is too tame for your impulses and desires. You would rather think of the transition as a leap from the narrow channel of prescribed work into the open broad expanse of unlimited opportunity and untrammeled endeavor."

He referred to the deaths of Prof. Smith and Harry Yates, and to the traits of character in both worthy of emulation. The parting thought which he wished to leave with the class was the power of intelligence to bind men together. "The tendency of the times is toward disintegration. It is easy to tear down but hard to build up." By the welding of copper by the use of silver he illustrated the binding force of the educated man upon the diverse elements of society. Dr. Fuller concluded his address by presenting the class to the Trustees, "that you may receive from their hands the usual tokens of their approval."

Mr. Lincoln then read the names of the members of the class and one by one they went to the platform and received their diplomas.

The seventy-five dollar prizes awarded to "six of the most meritorious students who have faithfully, industriously and with distinguished attainments completed the full course," were granted to Frank B. Knight, Edward L. Smith, Louis C. Smith, Arthur H. Smith, Elmer H. Fish, and Fred W. Eastman.

The exercises concluded with the benediction by Rev. C. M. Southgate.

The ushers were: William C. Howe, '93, chief usher; William H. Parker, '93; Charles A. Burt, '94; Victor N. Cushman, '94; Frank F. Phinney, '94; J. Leonard Merrick, '95.

NINETY-TWO'S COMMENCEMENT BANQUET.

Soon after the diplomas were awarded at the Y. M. C. A. building, members of '92 began to assemble from all directions, at Grange Hall. There was a spirit of triumph and joy in the air which did not wane while the morning hours crept on.

Singing, dancing and other demonstrations of hilarity were kept up until the announcement was made that a feast was prepared in the hall below.

After doing justice to Rebboli's bountiful repast, Pres't Collier rapped the assembly to order and called upon Messrs. H. W. Bracken, F. A. Morse, G. H. Miller, A. H. Smith, F. E. Hammond, J. H. Wallace, G. F. Freed and M. J. Lyden to respond to toasts of a very varied nature.

After the speaking the class reorganized with the following officers, to serve for two years: Pres't, M. J. Lyden; Vice-Pres't, G. H. Miller; Secretary, J. F. Bartlett, Treasurer, L. C. Smith.

A very lively scene ensued when, with Mr. F. A. Morse as auctioneer, '92's personal effects were sold to the highest bidder.

After financial settlements had been made, the march was taken and cheers of mutual congratulation given between '88, '90 and '92, at the "Bay State." After cheers for their old friends and admirers on Professor's row, the party disbanded just before dawn.

L'EXPOSÉ.

A Record of the Socialists and of '92.

L'Exposé, the class book published by the Socialists of '92, has appeared during the past week. Between its red covers may be found plenty of material for the thoughtful reader to ponder over. The doings of the class of '92 since their advent into the Tech are dwelt upon at length. There are also many pages devoted to the Faculty, the instructors, the undergraduates and a generous sprinkling of "grinds" for everybody. The successful manner in which the Socialists have carried their work through to its completion is deserving of the thanks of all undergraduates to whom has been left this lasting tribute by the class of '92. Let us
dwell for a few minutes on the athletic history of the class as found in L'Exposé:—Fish early distinguished himself by winning the 120-yards hurdle, the running high jump and the standing broad jump, at the first field-day after '92's entrance as prep., since then he has year by year, added to his laurels, having won in all over twenty prizes since entering the Institute. E. L. Smith is a crack runner, this year he easily won the two cross-country runs in which he was a contestant, he has also done remarkably well in track events and but for his unfortunate accident would undoubtedly have won the two-mile run at the Intercollegiate Sports this year. Morse, Southgate, and Wallace have also won honors in the field and on the track.

Southgate is the Tech champion at tennis. In August of '90 he won the tournament of the Crescent Tennis Club, he also won the County Tournament of the Worcester County Tennis Club, since then he has added many victories to his record and at present is the possessor of the Lansing cup. Cully has also distinguished himself at tennis.

As to societies, a social branch in which the Institute is somewhat lacking, '92 has done its share in their formation. In November, 1891, the Pi Iota chapter of the Phi Gamma Delta Society was founded with six members from '92. The Historical Society now so prominent at the Tech, was organized by members of '92, in February, 1891.

'92 vs. '92.

The Seniors' Last Appearance on the Ball-Field.

Last Wednesday morning the well-kept ball ground, in the rear of the Washburn Shops, was the scene of a close and exciting ball game played by two nines from the senior class. The game, although well advertised, did not prove to be a drawing card, but the small audience that did witness it were carried away by the sharp playing of both nines. Pelton had the honor of holding the captaincy of one nine while Moulton held a like office on the other team. Both men displayed great skill in the arrangement of their teams. The pitching of Brayton was a noticeable feature. The sharp playing of A. H. Smith and Eastman often drew well deserved applause from the grandstand. After the game became monotonous and the ball had been lost in the grass several times, the scorer was called upon for his report, but at his own request he was given ten minutes to add the individual scores. He then reported that Pelton's team had won, the score being 24 to 22. The losing side promptly treated the victors to ice-cream.

THE SOCIALISTS.

Fourteen of '92 Initiated.

There was a meeting of the Socialists of '92, last Friday evening, at the Lincoln House. After the transaction of the necessary business arising at the close of the half year, fourteen members of the class of '93 were ushered in, and after being informed of the objects of the society, were duly made charter members. After the election of officers for the ensuing half year, the party adjourned to Rebboli's. After lunch had been served, Mr. J. H. Wallace was elected toastmaster and called for the following toasts: "The Ladies," Mr. Lyden; "Socialism," Mr. Southgate; "The Faculty," Mr. Marshall; "'92 and '93 at War and at Peace," Mr. Howe; "The work of Couples," Mr. Hammond. The party then returned to the Lincoln House and spent an hour in singing college songs and other enjoyments.

PERSONAL.

'93. Walter J. Denny sailed from Boston, June 25th, on the Cephalonia for Europe. He will be accompanied also by his brother, George Denny, '95.

'95. George P. Davis sailed from New York, June 29th, on the City of Chester and will spend his vacation abroad.

'88. J. Brace Chittenden, who has for some time been holding the Kirkland Fellowship from Harvard, has recently been promoted to the W. H. Parker Fellowship in Mathematics. This is the highest honor a student can attain in America as it requires also the approval of the American Academy of Arts and Sciences.

MEETING OF THE W. M. E.

In response to invitations sent out, an audience of about 75 composed chiefly of Alumni of the Institute gathered at the rooms of the Board of Trade, No. 11 Foster Street, on the afternoon of Commencement day to listen to an address by Prof. George I. Alden, on "The Institute" before the Washburn Mechanical Engineering Society. Before the meeting commenced an informal reception was held.

President Elmer H. Fish, '92, after stating the objects of the society and welcoming those present introduced Prof. Alden who proceeded to deliver the address which we print in full below. Some anxiety was expressed because there had been trouble in securing a speaker for the day but the society should congratulate itself that this trouble happened because all present heard an able and interesting address and one of especial interest to every student and Alumnus of the Tech.
THE INSTITUTE.

Address delivered before the W. M. E., June 23d, 1892,
by Prof. George L. Aiken.

I am fortunate to-day in speaking to a body, each member of which has had some personal and active part in making the history of our Institute. But some of you are more familiar with the early, some with the later, periods of this development; and whether the points I shall briefly touch upon are familiar, recalling old scenes and experiences, or something new and since your day in the Institute, your interest and sympathy with your Alma Mater, so often shown in the past, will help to make up for my imperfect treatment of so great a subject.

In my own view, the Institute was highly favored at the outset with plans for its future, the drift of which was unmistakable, and the details for which, in some respects at least, were definite.

The objects sought by the founders, and particularly by the early trustees, who were of course obliged to consider fundamental plans, are set forth with great distinctness in nearly all the utterances of the patrons of the Institute in its early years, whether Trustees, or gentlemen of eminence selected to speak on its public occasions. I realize the difficulty of doing anything like full justice to the views and services of the few men whose names I may mention in this brief allusion to their work. I trust I may do no one injustice. Telling only a part shall not reduce the whole.

Mr. John Boynton, who made the first gift of money for the foundation of the Institute, expressed: first, his desire to benefit his fellowmen by using his money for the endowment of a school for Worcester County. It is not strange that Worcester County looked large enough to absorb the benefits which could be realized from the expenditure of his moderate fortune. Nor is it strange that a free school seemed to him to offer the most benefit to the County. To this benevolent purpose he added his general idea of the means by which this purpose might be accomplished. That idea is expressed in the words "Industrial Science," which formed a part of the original name of the Institute. This was always a misleading term to many minds. But Mr. Boynton has left clearly on record the fact that he did not propose to confine his school, even if only his original name and gifts had been associated with it, to a labor school or a trade school. He clearly states that it shall teach subjects not usually taught in the public schools, and then he enumerates nearly every branch of learning found to-day in the curriculum of the Institute. He gives peculiar emphasis to the idea that these subjects are to be taught to the end that the benefits of the school shall not be confined to the theories of science, but as far as possible shall extend to the practical application of its principles which will be the greatest advantage in the affairs of life. In the early days of the school the question was sometimes raised, whether we should not limit the course in mathematics to the completion of Trigonometry. Had this been done the trustees would have been false, utterly false to the trust imposed upon them by the acceptance of Mr. Boynton's gift, and no trustee so far as I know ever contemplated such a limitation of the curriculum.

Mr. Ichabod Washburn, at a much earlier date than that of Mr. Boynton's gift, had conceived a plan for a school having some special features, and expressed his desire and purpose to carry out that plan. Mr. Washburn's aim was more clearly defined and more specific than Mr. Boynton's, and the means by which he proposed to secure his special ends were clearly apprehended. Mr. Washburn knew by practical experience the way to secure the particular result he had in mind. He was a master in all that pertained to the machine shop, as well as an inventor and a self-made mechanical engineer. Besides this, he was the great organizer of an immense industry, he accumulated wealth, and had used it wisely and liberally in many directions.

His plans had so many features in common with those of Mr. Boynton that he was induced to unite his experiment, as it was for a long time called, with that of Mr. Boynton. But Mr. Washburn did not leave merely an outline of his plans. He established a department, as it were, and arranged the details of its working with such masterly wisdom and skill, that while many have since tried to follow the general purpose and method which he instituted, none have so fully comprehended the means of reaching the end he sought. At the present time almost every school of science admits the necessity of a machine shop of some sort, and has one; but his shop, following the plan which he left, is by general consent the most practical, economical and efficient department of its kind to be found. Mr. Washburn was far in advance of his day in his conception of the need of practical training, and his knowledge as to the possibilities and means of such training. But he, by emphasizing that feature of education never intended to exclude any other essentials of scientific or professional training, or of the most liberal education. He proposed to add his particular department to the Institute and not to subtract anything from it. I never read the opening sentence of his communication to the Trustees,
Dec. 2nd, 1865, without feeling that there is in it something that rises to a point of sublimity in its simple statement of the great truths which he realized. I venture to quote the passage:

"Gentlemen: I have long been satisfied that a course of instruction might be adopted in the education of apprentices to mechanical employments, whereby moral and intellectual training might be united with the processes by which the arts of mechanism, as well as skill in the use and adaptation of tools and machinery are taught, so as to elevate our mechanics as a class in the scale of intelligence and influence, and add to their personal independence and happiness, while it renders them better and more useful citizens, and so more like our Divine Master, whose youth combined the conversations of the learned with the duties of a mechanic’s son, and whose ideas and teachings now underlie the civilization of the world."

These familiar facts clearly show that while the aim of both Mr. Boynton and Mr. Washburn was specifically toward including the practical applications of science, and in the most concrete and efficient manner, neither of these men proposed or desired to exclude any element of liberal training which might properly become a part of the Institute curriculum. On the other hand, Mr. Boynton, as I have above remarked, enumerates nearly or quite all the studies which have up to this day been introduced in other technical and scientific schools. And Mr. Washburn suggests, in the passage just quoted, combining the conversations of the learned with the duties of the mechanic.

Turning now from the expressed ideas and purposes of these founders of the Institute, let us consider to whom were intrusted the consummation of the plans. While the Board of Trustees selected was composed wholly of men prominent for ability in their various callings, the Board was principally represented in its specific acts and public utterances by its first President, the late Stephen Salisbury, Dr. Seth Sweetser, and by our honored Senator, Geo. F. Hoar, while Mr. David Whitcomb, as its first treasurer, brought to the services of the school his unsurpassed ability as a financier, gave money to secure the enlargement of the shop, and on retiring from the treasurership made a handsome addition to the endowment funds of the Institute. Add to this the well-known fact that Mr. Whitcomb’s residence in Worcester was the sole reason why Mr. Boynton selected Worcester for the location of the school he proposed to establish, and the conclusion is irresistible that Worcester is indebted to Mr. Whitcomb for even more than his distinguished services and liberal donations.

Dr. Sweetser undoubtedly assisted Mr. Boynton and Mr. Washburn in formulating their plans, and his far-seeing wisdom made him of great service to the Institute in many ways. Though he was most thoroughly philosophical and scholarly in his modes of thought and expression, though an overseer of Harvard College, and officially identified with other literary institutions, Dr. Sweetser entered most heartily into the plans of the Institute as set forth in the letters of gift of Messrs. Boynton and Washburn. In a commencement address he said of the founders of the Institute, "Their purpose briefly stated is this: to give that amount of instruction in the principles and applications of science which will elevate the characters and increase the efficiency of that large and important class of our citizens who are carrying on the great productive industries of the land." This is but one of the many statements from various sources of the fact that the Institute was designated to train men for positions of power in the productive industries. But this acquisition of power was to come through education, as another terse statement from the address of Dr. Sweetser shows. He says the design of the founders of this school may be stated in a few words:—"the promotion of the welfare of society by extending the benefits of education."

Twenty years ago there was a question raised in some quarters whether training in science and modern languages constituted an education, and particularly whether it could be said to be in any sense a liberal education, or any substitute for the so-called liberal education of the college. There was also another term, culture, which was thought by many to be the exclusive possession of college graduates, or of a particular training. Did the Trustees of the Institute expect that the training they were planning for its students would constitute an education, and be the equivalent of a college training? There is a passage in one of Dr. Sweetser’s addresses where the word culture is used in such a relation as to indicate that his idea of culture was not restricted to any one line of mental discipline, or any one class of studies. He says, "The variety as well as extent of culture renders the selection (of a course in education) as difficult as it is indispensable."

But we are not limited to inferences from fragmentary quotations like the above for proof that the idea of making the training of the Institute the equivalent in educational value of a college course, was in the minds of the trustees. Senator Hoar, in a public address delivered in the early years of the Institute, devoted the substance of his address to the claim that the Institute was designed to be and was the
substantial equivalent, as an educational factor, of a college: that its graduates were entitled to be called gentlemen in the original and derivative sense of that word.

If you were present at our last Commencement exercises, you recall the emphasis with which President Walker claimed the equality of the education given by the Massachusetts Institute, over which he presides, with that given at Harvard College. In doing this he only repeated in substance and for that Institution, what Senator Hoar had claimed many years before for our Institute.

I have now called attention to the views of two of the founders and two of the trustees of the Institute. Mr. Salisbury, the first president of the trustees, held the position of founder and trustee as well as president. His large and timely donations to the funds of the Institute as soon as its establishment was proposed, entitle him to the honor of being one of its founders. His hearty approval of its plans, his personal devotion of valuable time, his many scholarly addresses, full of wisdom, wit and grace, and the high standard of moral and personal rectitude which, as president of the board, his administration inspired in all connected with the Institute, all greatly aided in the firm establishment of the plans of the trustees, and showed that he held a place second to none on the board in his appreciation of the work which the board inaugurated.

Twenty-four school years have passed away. The name of Mr. Boynton, as the original founder of the Institute, is carved in stone upon the front of Boynton Hall, and will there remain to perpetuate his memory. Mr. Washburn has left many monuments of his wisdom and philanthropy outside of the Washburn shops, and in connection with his work for the Institute he has the proud distinction of leaving one of his lineal descendants to carry on in the board the work he so early in the history of the scheme was compelled to lay down.

Dr. Sweetser's greatest monument at the Institute is that immortal persistence of true wisdom which so leaven the purposes into which it enters, as to give them perennial grandeur and perpetually increasing power.

Senator Hoar is still in vigorous health to continue his invaluable services upon the board of trustees as one of the two living members of the original board, Mr. C. H. Morgan being the other. Great as were the personal services and liberal as were the donations of Mr. Whitcomb in the interests of the Institute, he was equally generous in other directions. He is succeeded as a trustee by his son, who brings to the service abilities not less commanding than those his sire possessed.

The services of Mr. Salisbury, so varied, so helpful, so kindly remembered, are enough to perpetuate his memory and his usefulness. His mantle has fallen upon his son, to whom already the Institute owes the means of its recent progress, and who has shown a wisdom and sincerity which, added to his generosity, makes him in many respects the foremost of the benefactors of the Institute.

I turn now to the Institute itself, to examine the outcome of the plans upon which so much labor and thought and money have been bestowed. The elms which from year to year have been dedicated by class tree orators, cast their grateful shade upon the students who toil on foot or wheel up the Institute hill. They show a goodly growth, as if they had been planted in a deep soil. They spread their graceful branches as if growing in an atmosphere of learning and culture. They look very much like elms of the same age in any college town.

The original shop has been once enlarged, and is receiving at present a second addition. The Salisbury Laboratories impress the visitor with the great increase in the Institute facilities and are typical of the solid and rapid growth of the sciences which the laboratories were designed to promote.

These things you have all observed. How about the matters not so plainly visible? How about the comparative standing of the Institute in the department from which its students graduate?

A Worcester gentleman said to me the other day, quite confidentially, "Now how is it really about the studies here and at the Massachusetts Institute of Technology? For example, if my son enters the department of Mechanical Engineering here, what will he get as compared with what he would get at Boston?" I think that question ought to be answered, and for two reasons. First, that we may ascertain whether a certain prevailing tradition to the effect that we are a sort of labor school with a little study sprinkled in is true or not true? whether the classification suggested by President Walker of the Massachusetts Institute of Technology, in which he puts that school in one class and our Institute in another, has a basis of fact? And second, that question ought to be answered to show whether the Institute has been developing along the lines and toward the standards set for it by those who planned it. Has its career been progress? Has there been in its history the evolution of the original plans?

More than a year ago there was made at the Institute, as a basis for the consideration of some minor changes in the courses of study, a careful comparison of the hours devoted to study, recitations, lectures, and practice in the engi-
neering courses in our Institute and in the corresponding courses in the Massachusetts Institute of Technology. Before giving you the results of this comparison, I desire to say that in our Institute the time devoted to studies and practice is substantially the same in all departments, except about 800 extra hours of practice which the students in mechanical engineering have in the apprentice half year. Therefore the results of this comparison of the departments of Mechanical Engineering, which I give because I have the figures, so far as number of hours is concerned, represent any other department in the Worcester Institute by simply subtracting 800 hours from the practice time. While the Massachusetts Institute has more departments than the Worcester Institute, this does not affect the comparison of departments common to the two institutions.

The figures given below compare the total number of hours devoted to each subject for the whole course, and are made on the basis of two hours of study for each prepared exercise. These figures were made for the Massachusetts Institute from the very complete system of tabulation given in the Massachusetts Institute catalogue of 1890–91, and are believed to be correct. In making the comparison the time devoted to the preparation of a graduating thesis is not included in either school, but is assumed to be the same in each.

The whole number of subjects included in both courses is thirty-five. Thirty of these subjects are common to both courses. Of the five not common to the two courses, two, viz., mineralogy and geology, are in our course and not in the Massachusetts Institute course; and three, viz., surveying, heating and ventilation, and military drill, are in the Massachusetts Institute course and not in ours. As there are too many subjects to permit the results of comparison being given here in detail, I have grouped kindred subjects under their appropriate general headings, as follows:

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<tr>
<td>1</td>
<td>Mathematics, pure and applied</td>
<td>590 hours</td>
<td>595 hours</td>
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<td>2</td>
<td>Physics and Chemistry</td>
<td>360 &quot;</td>
<td>458 &quot;</td>
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<td>3</td>
<td>Modern Languages, Literature, History and Political Science</td>
<td>450 &quot;</td>
<td>527 &quot;</td>
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<td>4</td>
<td>Drawing, Machine Design, Thermodynamics, and Engineering Laboratory Work</td>
<td>811 &quot;</td>
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<td>5</td>
<td>Studies not common</td>
<td>75 &quot;</td>
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| Totals, not including shop practice                   | 2286 "      | 2249 "          |
| Shop Practice                                         | 382 "       | 2156 "          |
| Military Drill                                        | 99 "        | 99 "            |
| Grand Totals                                         | 2758 "      | 4405 "          |

An analysis of these figures shows:

First. That leaving out shop practice, the Massachusetts Institute has only 37 hours more in the remainder of its course in Mechanical Engineering than has the Worcester Institute.

Second. That of the studies not common to the two courses, there is little to choose, either in respect to the subjects themselves or the time devoted to them.

Third. That while the Worcester Institute has less hours devoted to the studies in group number four, that deficiency is nearly made up by the excess of time devoted in our Institute to language, literature and the sciences. In other words, the Worcester Institute has in the departments compared more exercises which are on the side of breadth and culture, than has the Massachusetts Institute.

Fourth. That when shop practice is included in the comparison, the Worcester Institute has 2156 hours against 382 hours of shop practice, and 90 hours of military drill at the Massachusetts Institute.

Fifth. When we consider the character of our shop work, and remember that it includes practice in designing machinery, the running and care of engines and steam boilers, and that all the practice, except the first few weeks of apprenticeship year, is on actual work in a well organized machine shop where engineering problems are being actually worked out, and where the student becomes practically familiar with the best machine shop methods and practice, a knowledge of which is at the very foundation of mechanical engineering, it can hardly fail to be apparent that the 1684 hours of shop practice which the Worcester Institute has, and which the Massachusetts Institute has not, must at least be equivalent in educational value to the 37 hours devoted to other subjects which the Massachusetts Institute has, and the Worcester Institute has not.

For my own part, I am not anxious to have our Institute included in any particular classification, whatever the basis of that classification. I like its individuality, and believe it deserves in some respects to stand alone.

It is not altogether strange that the prominence of its practical side and the impressions derived from its original name, should have been the source of traditions which have lodged in men's minds and passed down the years.

These traditions ought not longer to pass unchallenged by the facts. I am sure President Walker of the Massachusetts Institute, who has always manifested the most kindly interest in our Institute, simply misapprehended the facts in the views which he expressed in his address at our last Commencement.
It seems to me, however, that his ideas as then publicly stated did injustice to the wise founders and trustees of the Institute, and also did violence to the historic and the existing facts. Furthermore, it was unfair to you, gentlemen of the alumni, and I am sure you ought to have before you the means of assuring yourselves in regard to the matter. While the above comparison of figures speaks for the relative position of the Institute in the departments which it has established, I submit that the showing also indicates that the development of the Institute has been along the lines laid down by those who originally planned its work. The close application of the sciences taught has been a prominent aim of the Institute, and yet this has not crowded out from the curriculum, nor crowded into too small a space in it, any branch of science or any liberal courses for the culture and discipline of the mind, which have found a place in parallel courses in other technical schools.

Our present course of study is an improvement upon that which has been outlined in this paper. It includes greatly increased opportunity for the study of electricity, for which the Institute has facilities unsurpassed by any of our engineering schools. A plan for a four years' course is under consideration by the trustees, which, if adopted, will give more time for the work now laid out for the three and a half years of the mechanical course. The question of adding post-graduate courses, to be recognized by additional degrees, is under consideration. A new shop is being built to accommodate the large number of students already in the Institute.

Gentlemen of the Alumni, with the present and immediately prospective plans for the growth of the Institute, you will not, I am sure, be slow to recognize and defend its rightful claims as an educational institution, nor to demand of those responsible for its success results commensurate with its opportunities.

This is a day of organizations. The number and variety of interests, industrial, social, political, and educational, which must be sustained in order to keep the balance of our intricate civilization, is so great that their various relations must be intimate. It is no longer the neighborhood, or the town, or the State even, that has its own mutual interests to which it may confine its attention. As has been said, "All important questions are becoming international." The individual who isolates himself loses both opportunity and power for the most efficient activity. Particularly is this true of an institution of learning. The force that has, in a few years, revolutionized educational systems all over the world, is the demands of an advancing civilization for men with power to maintain its advance. The one constant quantity in education is the cultivation of the moral and religious nature, so that the individual shall be certain to use his talents, abilities and attainments for the good of himself and his fellows. Then we want the graduate of the school, whatever his calling, to be a magazine of potential energy, possessed with a transformer that will give 90 per cent. efficiency at short notice, when kinetic energy or work is required.

The successful school in any line of work must meet or anticipate the demands of the age. To do this it must know these demands. Our Institute must come into touch with the men who originate and control the great industrial and productive interests of the country, which require the applications of engineering and chemistry, as well as with the great teachers of these sciences; and the time is rapidly approaching when the teachers will have to know these applications, and test and correct their theories by them.

Our Institute has a body of Alumni scattered over the country from Maine to California, engaged in the precise work for which the Institute was designed to fit them. It would be an interesting and perhaps appropriate line of remark to call attention specifically to the variety and magnitude of the enterprises in which the Alumni are engaged. My time and lack of preparation forbids. While our annual catalogue gives the nominal positions they hold, it gives to me but a faint idea of their real achievements compared with that which I get from an interview and a personal observation of their work on the spot where it is done. I need only to allude to the matter to awaken the suggestion that one of the best ways for our Institute to keep in contact with the outside engineering world is to keep in close relation with its graduates. I have also been impressed with the idea that the Alumni, as individuals and as a body, need more channels through which to bring out for their mutual benefit the results of their special research, their original solutions of practical problems, and their experience in works of great magnitude and difficulty.

The Washburn Mechanical Engineering Society of the W. P. I., which has been organized during the past year, and in which we desire to interest you, has in it some possibilities in these directions. As it involves the co-operation of Institute and Alumni, its plan ought to include such mutual benefits as to make the efforts of each body helpful to both, as well as to the general good in which both are interested. By
the Institute, I mean in this connection, all those who spend their time and effort on the Institute hill; and this number, as you know, is mostly the students (the faculty being so few as to be comparatively insignificant in point of numbers).

The mutual benefits, as I would state them in a few words, are these: The students can receive the benefit of the experience of the Alumni, as well as the advantage of formulating their own ideas and problems, and taking part in the discussion of papers and topics in the meetings. The Alumni, by putting their work in form, can find through the Society a channel for its publication, and thus a means of a wider reputation among their own body and other like organizations. While there is no provision in the constitution of the Society for the regular publication of its transactions, I am convinced from the communications already received, and from what I am constantly learning of the possibilities of securing valuable contributions from Alumni as well as students, that some systematic way for the publication of these papers will have to be provided. If this Society, with its headquarters at the Institute, can assist its members in editing for publication such material as they may be willing to furnish, it will be a service willingly rendered. The incidental advantages to both students and Alumni of earlier acquaintance with each other, of helpful business relations, of more social enjoyment, and a closer bond of union between its classes as their number increases, will be appreciated. But after all I feel that these considerations will be lost in the one thought and purpose of every member that he has through this organization another opportunity for usefulness in a cause which has had in its establishment the devoted services of some of the best and ablest men of a past generation, and which is still wisely guided and liberally sustained by its present Board of Trustees.

There is one more thought in regard to the Institute which appeals to any and to all who have an opportunity to co-operate in its work. It is moving forward on the great lines of human progress. Where it ought to go, you want to go. The pioneer work done in the past is valuable now, not simply as a memory, but as an open door. For still another generation there will be in its development that peculiar impulse and inspiration which comes from successful effort in new and widening fields. We hope the Washburn Mechanical Engineering Society may become, through your assistance, worthy of its name, and of its association with the broader work of the Institute.

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