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Students of Worcester Technical Institute

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*All students are members.
In recent years, the advancement made in the curriculum of the Tech; the improvements made in the grounds and buildings; and the increase made in the number of buildings,—has been almost phenomenal. The Trustees, by wise and judicious actions, have raised the standard of the Institute till it ranks among the leading technical schools of the country, and at all times, when necessary, they have not hesitated to make improvement. But with all this painstaking care and unselfish work, the Trustees seem to have omitted one vital point. This point, which could be made the axis of a new revolution in the prosperity of the Institute, is the subject of an article in this issue, and we respectfully request the Trustees and Faculty, as a whole and individually, to think seriously concerning this subject. We have no doubt that, if they decide to erect this new building, they will not only never regret their action, but will also live to see the great good done thereby to the Worcester Polytechnic Institute. A building such as is described in this issue would yield the Trustees a good return.

Again we must make football the subject of a few lines. At the close of the last game, the captain of the eleven resigned, and informed his men that he must cease playing for the remainder of this year. This is unfortunate, for such a break in the middle of the season cannot help but be demoralizing to a certain extent. It remains with the football enthusiasts of the Institute to determine how serious this demoralization shall be. The newly elected captain is enthusiastic in all that pertains to football, understands the game thoroughly, and can, with the aid of his associates on the field, bring victory to the college. We cannot urge too strongly upon the students the need of hearty support both in the matter of attendance at the games and of a second eleven during practice hours. To those who so faithfully aid the team, by practicing against it, we extend the thanks, respect and gratitude of every man in the Institute. No man deserves more than he who continues to turn out for practice, afternoon after afternoon, even though he realizes that he stands no show for the 'Varsity.
The Manager of the football eleven has decided that class football games will be a benefit to the Institute. He argues that, although they may to some extent harm the regular 'Varsity practice, yet the number of new players developed fully compensates this loss. Yet we would make a suggestion which, although it probably could not be used this year, it would be well for future managers to consider. Instead of having games between all the classes, let there be simply an annual Freshman-Sophomore game. Each class would thus put a team into the field two years, and would have its players fully developed by that time. Moreover, a majority of players usually comes from the two upper classes, and class games between them interfere more materially with first eleven practice. In all probability, the feeling between the Senior and Junior classes is too great for any such arrangement this year. Either class having the patriotism to take the initiative in this movement would be accused by the other of cowardice. Without doubt such a proceeding would be highly satisfactory to the lower classes, as they prefer to meet teams of nearer their own weight and experience. So much trouble has been caused lately by class practice that the Manager came very nearly prohibiting it during the hours after half-past four. The student body would surely support the enforcement of any such prohibition, for the team's showing lately has made the students feel that nothing should be done to retard its progress in the slightest degree.

A word of admonition to the Freshmen is needed it seems. Their enthusiasm is very great and consequently gratifying, but they should take heed lest it bring them into disfavor. We speak of the matter of class football practice. The upper class, on discovering that their practice reacted on the 'Varsity by taking its second eleven, immediately discontinued practice. Now it seems but just to ask that the lower class cease its work, else by continued practice it will outstrip its opponents, who are devoting all their energies to the support of the Institute team. The course '98 is pursuing is hardly creditable to them and we think this word of warning will cause a change. In future, '98, we shall expect to see your football men obtaining their practice in the ranks of the second eleven.

We would remind the students that the season of indoor athletic games is now at hand. It is time to think of what our Institute is to do. These winter sports make the school in which our athletes may secure training and experience for the Intercollegiate contest. There is also talk of a team race with some of the schools in this city. Should this event come off, we must maintain our reputation. We trust that our runners will now begin to sharpen their spikes.

The Seniors find themselves at a serious disadvantage in their work in mechanics this half, owing to their inability to procure copies of "Rankine's Applied Mechanics." The work is out of print and cannot be obtained in this country unless a new edition is published, which will probably not be done this year.

Professor Alden feels the need of the work, and the only resource left to the Seniors is borrowing, so that any of the graduates having books to lend will confer a favor on their unfortunate successors, by loaning the said work to them.

The subscriptions for the Football Association are coming in very slowly. The number received from Alumni is smaller than ever. This should not be so. Let the Manager feel, through the medium of
your subscription, that you are still in touch with the undergraduates and wish to aid them in their endeavors to do honor to their college.

The publishing of the report of the Manager of the baseball team must be delayed until the next issue. The report, which is most creditable to the Manager, is not yet in shape to go into this paper.

A DORMITORY FOR TECH.

Its Advantages Shown.

To the Editor of the WPI:

One of the first questions considered by a young man in choosing the institution in which he will spend the most important four years of his life, is concerning the conveniences which he can have for his daily comfort. This question is followed by one enquiring about the dormitories. If he finds that there are several institutions whose courses of study would suit his requirements, he is in doubt which is the best one for him to attend, and his choice is likely to be decided by something entirely foreign to the curriculum. He is very likely to attend the one which will offer him the best college home. Now, in this sense, what is meant by the word "home"? Is it a boarding house, in which the main object of the proprietor is the money to be derived from his rooms, and in which the real comfort of the roomer is a secondary consideration? Decidedly, it is not. Is it a place where the student will live, year in and year out, with only a few men as intimate friends? This can hardly interpret the word. Is it not rather a large, commodious building, suitable for students only, and divided up into small suites of rooms? Is it not rather a building where the student body lives as one large family; where friendships are formed which can never be forgotten; and where the student, from the first of his freshman year, receives that knowledge of college life and college feeling, which is necessary for his own education and for the prosperity of the Institution? In other words, is it not a modern college dormitory?

It is a well known fact that, with the exception of the scientific schools of some of the colleges, none of the leading technical schools have dormitories. Perhaps this is due to the fact, that the general impression is, that dormitories are old-fashioned and have no place in modern institutions. But if one stops to think, there is but little truth in this. Have the universities and colleges which always have had dormitories ever abolished them? Have these institutions ceased to erect new dormitories? Where a dormitory has once been tried has it ever proved a failure? The only answer to these questions is in the negative. Now that the attention has been called to the lack of dormitories among institutions of technology, one who is interested in the Worcester Tech, would begin to think of the advantages to be gained for it by the erection of a dormitory.

There are several technical schools whose courses of study are on an equality, and it is hardly necessary to state that among these is the Worcester Polytechnic Institute. It is also a fact, that none of these institutions have dormitories. Now if a commodious building were erected (and it will be shown it can be erected) suitable for this purpose, it stands to reason that it would be a great step in the advancement of Worcester Tech. One of the few drawbacks at the Tech for out-of-town men, is the lack of places where good rooms and board can be obtained at moderate prices. If there were a dormitory here, this great objection would be removed, and, with its removal, there is no doubt that the number of students at the Tech would materially increase.

If a dormitory were erected it would not be necessary to erect it on the Tech grounds, and thus occupy soil which will soon be occupied by engineering buildings. There is a plot of ground directly opposite the new Mechanical Laboratory which is admirably suited for the purpose. This ground is Dewey's field, and among the advantages which it possesses may be mentioned: first, its healthy location; second, the fact that a building could be erected which would face to the north and south and thus get both the morning and afternoon sun; third, its close proximity to the Tech; and fourth, its size. But it must have some disadvantages also. It will be said, that Dewey's field is the only athletic field the Tech has, and that with this field occupied the students would have no place for the practice of athletic sports. Is this field so well adapted for athletics that its place could not be filled? Is it so level that a better field could not be obtained for football? Is it so large that one of equal size could not be obtained for baseball? The answer to these questions is certainly in the negative, and, as the field is never used for other sports, it does seem that the usefulness of the field for athletics should not be a barrier to its fitness and adaptability for the location of a dormitory.

The reader will bear in mind that from the nature of this article any description of a pro-
posed building must be very incomplete, and that for this reason many points of a building have intentionally not been touched upon, which in a more extensive article would receive much attention. A dormitory which would answer part of the requirements of the Tech need not be an expensive building. A small one should be built and then, when its usefulness is determined, of which there is not the shadow of a doubt, there will be plenty of opportunities to erect a larger building. A dormitory, which would accommodate say 50 students, would be a very satisfactory beginning in this matter. Such an edifice could be constructed at a moderate cost, would soon pay for itself, and then give the Institute a revenue annually. If the plot of ground mentioned above were used, a very good plan to adopt would be a combination of the general plans of the dormitories at Leland Stanford, Jr., University and Harvard. The exterior would then be in the form of a quadrangle and the interior like one of the old dormitories of Harvard. The building should run north and south, in order to give the rooms both the morning and afternoon sun. If built in the shape of a quadrangle, it would be advisable to have the end on West Street taken away. This would leave the building somewhat similar in outline to figure number one.

According to this outline, if the main building ran from the north to the south, then one of the wings could be used as a dining-hall and the other could be made a gymnasium. It would be desirable, however, to have the dining-hall entirely shut off from the dormitory, to prevent all smell of cooking and to stop the noise which must necessarily accompany a large kitchen. In compliance with the above outline, the dormitory proper would be oblong in shape. One of the leading architects of the city, on being consulted by the writer, proposed the above plan, and offered an example of the interior, Holworthy one of the oldest dormitories at Harvard. To each entry there would be a hall about 7 ft. wide by 17 ft. long. Into this hall would open two suites of rooms, one on the right and one on the left. Each suite would contain a study, connected to two small bedrooms. In the halls would be placed the stairways leading to the floors above. Thus it is seen that, as there are three entrances on each floor, there would be accommodations for twelve students on every floor, and, if the building were four stories high, this would give a dormitory suitable for 48 students.

Such a building is excellent, for many reasons: in the first place, while not actually separated the students are deprived of each other's company to a large extent. As an illustration: Suppose that A had his room on the ground floor, on the left of the north entry, and suppose that B had his room on the third floor, to the right of the middle entry. Now, if A wished to visit B, he must go outside of the building, walk to the next entry, and then go up two flights of stairs. So it can plainly be seen, that A and B are quite separated from each other, although they are in the same building. The advantage of this is, that a student is not apt to visit his friends frequently and thus neglect his work, if he knows he must go outside of his building to do it. This plan has worked many years at Harvard, and it is mainly on this account that Holworthy is one of the buildings most sought for by the students of the college. Among the other advantages such a building has, may be mentioned: first, it receives direct light in all its rooms; second, it has thorough ventilation; third, it is easily heated in the winter, and can be kept cool in the summer; and fourth, it is easy to handle in case of fire.

One of the wings, as before mentioned, could be made into a dining-hall, and the other could be made a gymnasium, a hall for entertainments or something of that sort. Regarding the dining-hall, it can be said, that it would be of great service to the students. Here they could obtain board at much more moderate rates than anywhere else in the city. The hall might be conducted after the manner of Memorial Hall at Harvard, or it could be maintained according to the wishes of the students; i.e., somewhat similar to the Foxcroft Club. Of course the dining-hall should be shut off from the dormitory, but, as it would be on the quadrangle, it would be within easy reach of every student. It would also be advisable to make the hall large enough to suit the requirements of more students than would live in the dormitory. A dining-hall would also be of decided advantage to the Institute from an athletic standpoint; for, with a dining-hall, there would be no difficulty in providing that long-felt want, the training-table.

The quadrangle could be laid out suitable for the practice of track and field events. A good running-track could be made and ground could be laid out for the pole-vault, broad-jump, etc. Thus this quadrangle could be made a beautiful spot, and at the same time it would become a useful one; for, with such arrangements, the athletic team would not be compelled to go to the Oval for training purposes. With this journey to the Oval removed, the interest taken in track athletics at the Tech would rapidly increase, and with this increase of interest, the position of the Institute in the New England
Intercollegiate Athletic Association would be advanced materially.

According to approximate estimates made by one of the leading architects of the city, such a building as has been described, built entirely of brick, and modern in every detail, need not cost more than $35,000. Of course, this price does not include the dining-hall or gymnasium. On the supposition that the cost of the building would not exceed $35,000, and that it would accommodate 48 students, a reasonable price to charge each student would be $100 per year; i. e., $200 per year for each suite of rooms. This would give an income of $4800 a year, and it does seem that, after deducting the expenses of managing such a building, a very good net income should result for the Tech.

---

**W. P. I. vs. CAMBRIDGE Y. M. C. A.**

Saturday, Oct. 13, our football team lined up against the Cambridge Y. M. C. A. team at the Worcester Oval. Tech won after an interesting struggle. The supporters of the team were much pleased at the showing the team made, for regardless of the fact that several of the regular team were either laid off or playing out of position, the men played a more systematic game and with more snap than has been seen before this year. Quite a number of students were present, and their enthusiastic cheering did much toward making the men play a strong, quick game.

The Cambridge team had some very good individual players, but lacked decidedly in team work. Sanborn did most of the work for Cambridge, while Mayo excelled for Tech.

Following is the outline of the game:

Cambridge wins the toss, giving the ball to Worcester. Allen kicks off between bounds on the first try, but on second kick sends the ball down the field, and Cunningham tackles the man on the 25-yd. line. Sanborn takes the pig-skin at the centre of the field, and gains two yards through the centre. Sanborn fumbles the ball, but recovers it with a loss of two yards. With third down and six yards to gain, Sanborn is sent through the line, and gains twenty yards, where he is forced out of bounds by Morse. Cambridge continued to work Worcester's line for small gains, and by the aid of a 15-yd. run around W. P. I.'s right end, soon had the ball on Tech's 10-yd. line. Here Tech took a brace and fought desperately, but with the ball on the 2-yd. line, Sanborn made a touch-down and kicked the goal. Time, 11 minutes.

Cambridge Y. M. C. A., 6; W. P. I., 0.

Allen kicked off; the ball going low, striking Cambridge's centre and bounding back, was secured by Warren. Leland and Booth each gain five yards through the line. Tech gains steadily through the line, and with twenty yards given Tech for two off-side plays, the ball is on the 5-yd. line. Allen goes through Cambridge's right tackle, scores a touch-down and kicks the goal. Time, 3 minutes.

Cambridge Y. M. C. A., 6; W. P. I., 6.

Morse caught the ball on the kick-off by Cambridge, and gained 10 yards. Mayo makes a run of 25 yards around left end, and five yards through the line. Tech only gains two yards on three downs, and with three yards to make Booth is sent through Cambridge's left tackle, gaining eight yards. Allen gains twice through the line. Cambridge now holds for three downs, with the ball two feet from the goal line. Morse is sent over for a touch-down. Allen kicks goal. Time, 4 minutes.

W. P. I., 12; Cambridge Y. M. C. A., 6.

Morse again secures the ball, but fails to gain before tackled. Allen makes a run of 20 yards around right end, but before the teams line up the first half is ended.

**SECOND HALF.**

Cambridge kicks off, and Ware gets the ball on W. P. I.'s 40-yd. line. Mayo gains eight yards round the end; Booth make five yards through the line. Ware and Mayo each gain four. Morse gains twelve yards through the centre. Cunningham, Booth, and Leland gain three, seven, and six yards respectively. Morse makes small gain in centre. Mayo gains eight yards and Allen gains five, bringing the ball to the 5-yd. line. Allen takes the ball through the line, and scores a touch-down. Fails at goal.

W. P. I., 16; Y. M. C. A., 6.

Warren catches the ball on the 20-yd. line, and carries it to within ten yards of the centre of field. Mayo gains eight and Cunningham three yards.

Cambridge holds for four downs, and secures the pig-skin at the centre of the field. Sanborn makes gains of five and eight yards through Worcester's line. Steady gains by Cambridge, Sanborn doing most of the running, brought the ball to Worcester's 5-yd. line. W. P. I. holds twice, but Sanborn takes the ball, and scores a touch-down, from which he failed to kick goal. Time, 6 minutes.

W. P. I., 16; Y. M. C. A., 10.

Cambridge for the next few minutes plays the best game of the day, making twenty yards around each end, ten yards around left end, and several small gains through the line in rapid succession. Worcester holds for three downs and Sanborn tries to go around left end, but Mayo
makes a pretty tackle before the ball has been advanced. Worcester loses the ball on a fumble by Mayo. Time is called, and the game ends with Tech the victors.

The teams lined up as follows:

**CAMBRIDGE.**

<table>
<thead>
<tr>
<th>Cambridg</th>
<th>W. P. I.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eldridge,</td>
<td>r. end r.</td>
</tr>
<tr>
<td>T. Keehew,</td>
<td>r. tackle l.</td>
</tr>
<tr>
<td>A. Keehew,</td>
<td>r. guard l.</td>
</tr>
<tr>
<td>Wiseman,</td>
<td>centre</td>
</tr>
<tr>
<td>Roberts,</td>
<td>l. guard r.</td>
</tr>
<tr>
<td>Riordan,</td>
<td>l. tackle r.</td>
</tr>
<tr>
<td>C. Keehew,</td>
<td>l. end r.</td>
</tr>
<tr>
<td>Sanborn (Capt.),</td>
<td>I. half-back r.</td>
</tr>
<tr>
<td>Moore,</td>
<td>r. half-back l.</td>
</tr>
<tr>
<td>Jordan,</td>
<td>full-back</td>
</tr>
<tr>
<td>Morse,</td>
<td>quarter-back</td>
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</table>


**TECH RUNS UP THE SCORE.**

**Aggies Shut Out.**

"The students at the Worcester Polytechnic Institute, have at last succeeded in getting together a football team that is a credit to themselves and to the institution that they represent," is the way a leading Worcester paper spoke of the team after last Saturday's game, and who­ever saw the game Tech played against Amherst Aggie at the Oval, Oct. 21, cannot fail to see it in that light. The snap and life put into the work was something new for a Tech team, and the team work displayed was remarkable considering the slight practice the men get during the week. The tackling and interfering of the men was exceptionally good, but there was some fumbling of the ball.

A play which is seldom seen on a football field, and one which showed the excellent teamwork of the W. P. I. eleven, was the touchdown made by Morse after going through Aggie's centre. The ball was on Tech's 20-yd. line and Morse was sent into the line, the whole eleven, it seemed, shoving in after him. For 30-yds. the mass moved down the field, all Aggie's attempts to stop it being of no avail. Suddenly the mass parted, and the runner was left with a clear field, before any one could tell how it happened. Allen's long runs around the end and his fine punting did much to increase the size of the score.

The game was called at 3 o'clock in the presence of about 500 spectators. On the opening kick-off by Washburn, Morse caught the ball and advanced it 10 yds. before downed. Just as Morse was tackled he dropped the ball, which was secured by Aggie. Tech immediately held for four downs, secured the ball, and by steady gains, mostly through the line, rushed the ball up to Amherst's 20-yd. line. Here a mistaken signal caused a fumble, and Aggie secured the ball. After making a few short gains, Aggie lost the ball to Brigham by a fumble. Mayo made 12 yds. around Aggie's right end. Then Allen was sent around the other end and scored the first touch-down. Time, 6 minutes and 30 seconds. Allen failed to kick goal.

W. P. I., 4; Amherst Aggie, 0.

Washburn made a long kick, which was caught by Morse, who advanced it 10 yds. Mayo gained 8 yds. around left end, and Allen was given the ball to take around the other end. Flying interference and good blocking enabled Allen to run 70 yds. and score. Time, 3 minutes. Allen kicked goal.

Score: W. P. I., 10; Aggie, 0.

Again Morse caught the ball on the kick-off and gained a few yards. Tech advanced the ball to the centre of the field, where Aggie held well, and Allen punted. Booth broke through and tackled Marshall, where he caught the ball on the 25-yd. line. By hard playing Aggie forced the ball to the centre of the field. Marshall fumbled and Ware got the ball. Amherst braced and again forced Worcester to punt. Allen sent the ball far over the full-back's head, and it rolled over the goal line before it could be secured. Booth, who had rushed down the field in line shape, fell on the ball. The referee gave the decision as a touch-back and the ball was brought out to the 25-yd. line, where it was kicked off by Washburn. Allen secured the ball and made up 10 yds. Gains around the ends by Allen and Mayo, by Booth and Morse through the line, brought the ball to within 3 yds. of the goal. Mayo went around Aggie's right end for a touch-down. Time, 9 minutes, 30 seconds. Allen kicked goal.

Score: W. P. I., 16; Aggie, 0.

Morse secured the kick-off, and aided by good blocking advanced 15 yds. Without losing the ball Tech steadily forced it toward the Aggie goal, and Leland had soon scored. Allen failed at goal. Time, 3 minutes, 30 seconds.

Score: W. P. I., 20; Aggie, 0.

On Washburn's kick-off Warren advanced the ball 20 yds. Aggie held well and soon forced Tech to punt. Washburn failed to catch the punt and Leland fell on the ball. By hard and steady drives at Amherst's line, the ball was carried to the 10-yd. line. Allen carried the ball over with only five seconds left to play. Goal kicked.

Score: W. P. I., 26; Aggie, 0.

In the second half Toole took Washburn's place at full-back. Allen made a long kick, which was captured by Marshall. Brigham
tackled him before he could gain ground. Marsh then went around Tech's right end and advanced 15 yds., where he was tackled by Morse. On third down, with 10 yds. to gain, Toole went back and punted. Booth broke through and stopped the ball, which bounded back toward Aggie's goal. Allen secured the ball within 10 yds., where he emerged from the crowd, and with a clear field before him scored. Allen kicked goal. Time, 4 minutes.

Score: W. P. I., 32; Aggie, 0.

Allen caught the kick-off and made up to gain by Mayo, the signal was given for Morse to buck the centre. The ball gradually moved toward the Aggie goal 30 yds. had been covered, here Morse emerged from the crowd, and with a clear field before him scored. Allen kicked goal. Time, 1 minute, 30 seconds.

Score: W. P. I., 28; Aggie, 0.

Allen got the ball and gained a few yards. Allen took the ball around Aggie's left end and ran to the 15-yd. line, where he was forced out by Reed. The men were called back, however, on account of an off-side play by Nichols, and Tech was given 15 yds. Steady gains brought the ball to the 10-yd. line, from which it was taken over by Brigham. Allen kicked goal. Time, 6 minutes.

Score: W. P. I., 44; Aggie, 0.

This was the last touch-down of the game. When time was called, the ball was in Tech's possession, 20 yds. from her own goal.

The teams lined up as follows:—

<table>
<thead>
<tr>
<th>W. P. I.</th>
<th>Aggie</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ware (Capt,),</td>
<td>l. end r.</td>
</tr>
<tr>
<td>Booth,</td>
<td>l. tackle r.</td>
</tr>
<tr>
<td>Brigham,</td>
<td>l. guard r.</td>
</tr>
<tr>
<td>Riley,</td>
<td>centre</td>
</tr>
<tr>
<td>Harrington,</td>
<td>r. guard l.</td>
</tr>
<tr>
<td>Leland,</td>
<td>r. tackle l.</td>
</tr>
<tr>
<td>Harris,</td>
<td>r. end l.</td>
</tr>
<tr>
<td>Warren,</td>
<td>quarter-back</td>
</tr>
<tr>
<td>Allen,</td>
<td>l. half r.</td>
</tr>
<tr>
<td>Mayo,</td>
<td>r. half l.</td>
</tr>
<tr>
<td>Morse,</td>
<td>full-back</td>
</tr>
</tbody>
</table>

(The summary: score, W. P. I., 44; Aggie, 0.)

Touch-downs, Allen 3, Mayo 1, Leland 1, Booth 1, Morse 1, Brigham 1. Goals from touch-downs, Allen 6. Time, 25 minutes and 15-minute halves.

Referee, W. L. Morse, 1st half; H. L. Dadmun, 2nd half. Umpire, A. D. Butterfield, 1st half; W. L. Morse, 2nd half. Linesman, George C. Gordon.

WORK OF COAST SURVEY.

On Tuesday evening, Oct. 16, Dr. Mendenhall addressed over a hundred members of the Board of Trade, together with their friends, and kept them interested for an hour or more. The subject of his discourse was the work of the United States Coast and Geodetic Survey.

President Mendenhall was introduced by President A. M. Stone of the Board of Trade. Mr. Stone said that, although a newcomer to Worcester, Dr. Mendenhall scarcely needed an introduction to the members of the Board, as his fame had preceded him. Dr. Mendenhall modestly disclaimed the compliment and said that he had been welcomed so often and so generously since coming to Worcester that he could not help thinking it was a most hospitable community.

In opening his address, which, by the way, was as much devoid of technicalities as possible, Dr. Mendenhall spoke of the beginning of the work of coast survey about 100 years ago. "The necessity for such a survey was recognized as early as this, and the work has been kept up steadily ever since. Even before then the work of a careful and accurate survey of the public lands had begun, and was a matter of general interest. Among its chief supporters was Thomas Jefferson, one of the most scholarly men that this country has produced, who introduced a bill into Congress for the survey, and also tried to have the decimal system adopted. His plan provided that each section should be 10 miles on each side, but the bill was amended at first that each section should be 7 miles on a side or 49 miles square. Later it was again amended so that each section was 6 miles on a side.

"The work of the survey has not been confined to the coast, but has extended all over the country. One of its chief functions has been to correct and perfect former surveys which were found to be inaccurate. The survey prepares maps and charts of the coast, which are valuable, not only as an aid to the mariner, but also for the purpose of defence."

President Mendenhall then described the various principles and methods used in making maps or charts.

"One method," he said, "is making use of latitude and longitude to determine certain fixed points. Few people have any idea of the difficulties in the way of determining such points by latitude and longitude. It is a common belief that all bodies fall directly toward the centre of the earth, but this is not so, for the earth is not a sphere, so the plumb-bobs used in the work of surveying do not fall perfectly straight, and the deviation has to be taken into account. The pole itself is not a constant point and the equator oscillates at times. The determining of longitude is not as difficult, for in finding it, it is only necessary to take into account the difference of time between certain points. Formerly this was a matter of some difficulty, but the American method of ascertaining the difference of
time by telegraphy is now universally used, and renders the problem simple. It is worthy of note that this system was first used by the U. S. Coast and Geodetic Survey.

"There is no country where longitude can be so accurately determined as the United States, as the country is covered with a network of stations. But latitude and longitude are too expensive and dilatory a process for map and chart making in these days, so triangulation comes into play."

President Mendenhall then explained the principles of triangulation, and described the process of measuring a base-line for the purpose of ascertaining the length of the two other lines of a triangle. He then explained a diagram illustrating a survey made in Massachusetts 40 years ago by the coast survey, in which Mt. Wachusett was one point of the triangle and Mt. Tom, near Northampton, another.

President Mendenhall then described the next step in chart and map making. "Triangulation only gives certain fixed points, and then the work of the topographer comes into play. With the points fixed by triangulation as his base, he, with the aid of the plane-table, puts in every object between those points, resulting in a map giving every road, every church steeple, every hill or valley within the triangle, and so on until the series is complete.

"For the benefit of the mariner another science, that of hydrography, is invoked. By this the bottom of the sea is sounded and platted out, so that we know its hills and valleys. The tides are also studied, as is magnetism, with its effect on the compass. So is gravitation, and the variation of its force, and within a short time the United States Coast Survey hopes to be able to give the world some interesting information regarding the shape of the earth, as evidenced by these variations in gravitations. All these matters and some others are the work of the Coast and Geodetic Survey, and that they are of value is beyond question."

After the address, President Mendenhall was tendered an informal reception. Col. H. E. Smith, Ellery B. Crane, James Logan and A. W. Parmelee assisted, and nearly all availed themselves of the opportunity to greet President Mendenhall.

SIGMA ALPHA EPSILON RECEPTION.

The first week after Dr. Mendenhall's arrival was a very busy one for him. Monday night came the reception by the Trustees and the Faculty; Tuesday night he spoke before the Washburn Engineering Society; Wednesday evening he was present at a reception tendered by the Sigma Alpha Epsilon Fraternity; on Friday came the Y. M. C. A. reception, and Saturday evening he attended a dinner given at the Phi Gamma Delta Fraternity House.

The first reception in which the students took any part was that tendered by the Sigma Alpha Epsilon Fraternity, at its Chapter House at No. 4 John street. The "Sigs" have just become comfortably settled in their enlarged quarters, and this occasion served the double purpose of a reception to the President, and of an opening night for the Fraternity.

The parlors on the first floor were thrown open and prettily prepared for the reception. Palms and other decorations, furnished by florist Keyes, were placed in every conceivable nook and corner. One of the mantels was covered with prizes won in athletic contests by members of the Chapter. A table covered with an admirable collection of photographs of Institute scenes, athletic teams, of editors of the College Annual, etc., formed a centre of attraction to the visitors of the evening.

Dr. Mendenhall was assisted in receiving by Hon. and Mrs. Francis A. Harrington, and Professor and Mrs. U. Waldo Cutler. The ushers were George A. Denny, Thomas H. Coe, George S. Gibbs, James B. Mayo and William H. Cunningham. The receiving party stood in the front parlor, while in the back parlor, light refreshments were served.

The following were present:

His Honor Mayor Henry A. Marsh and wife; Hon. Stephen Salisbury, Mr. and Mrs. E. I. Comins, Mrs. M. A. Wellington, Mrs. Charles Baker and Miss Baker, Mr. and Mrs. H. E. Smith, Professor and Mrs. George I. Alden, Professor and Mrs. George E. Gladwin, Supt. Milton P. Higgins, Professor and Mrs. Alonzo S. Kimball, Professor and Mrs. Levi L. Conant, Professor Arthur Kendrick, Professor George H. Haynes, Professor William W. Bird, Professor Jennings, Mr. and Mrs. Joseph O. Phelon, Mr. and Mrs. Joseph Beals, Mr. and Mrs. Arthur L. Rice, Mr. George B. Viles, Mr. Clarence W. Eastman, Mr. Arthur D. Butterfield, Mr. Harry C. Hammond, Mr. Theodore H. Nye, Mr. Alexander W. Doe, Mr. Henry S. Favor, Mr. Henry J. Fuller, Mr. Walter E. Harpgood, Mr. Fred M. Martin, Mr. Alba H. Warren, and Mr. Isaac E. Elliot.

Y. M. C. A. RECEPTION.

The Freshmen Entertained.

The annual reception of the Y. M. C. A. to the Freshman class was held in the Laboratory Friday evening, Oct. 12. There was an attendance of about 150, chiefly students. The number of ladies being rather smaller than in preceding years. The event was a success in every respect, and it is to be regretted that there was so small an attendance from the upper classes, as the occasions when the whole school meet for a social time are few indeed, and should be appreciated.

The guests began to arrive about 7.30 and were received by Pres. Mendenhall, Mrs. M. P. Higgins and Mrs. A. S. Kimball. The time was spent until 9 o'clock in getting acquainted and a general social good time.

Soon after 9 o'clock Mr. Bryant, '95, Pres. of the Y. M. C. A., rapped for order and made a short address of welcome to the class of '98. He spoke of the work of the Association in the Institute, and the advantages accruing to a membership in it. He then called upon Pres. Mendenhall to say a few words. Pres. Mendenhall was given an enthusiastic reception when he arose, and, after thanking his hearers for their friendly greeting, he spoke in a happy vein of his interest in, and respect for the work of the Association and the opportunity afforded by the event for social intercourse among the students.

Mr. Bryant then announced a short musical programme. This consisted of a flute solo by R. H. Taylor, '95, with E. A. Copeland, '95, accompanist; a vocal solo by E. L. Burdick, '94, with Mr. Copeland accompanist; and a violin solo by W. S. B. Dana, '97, with Miss Edith Barton accompanist. The selections were all well rendered and generously applauded.

At the conclusion of this programme, Mr. Bryant announced that "something else" ye. remained. That "something else" proved to be a refreshment of ice cream and cake, which was served in the large model-room. Messrs. F. E. and W. E. Marshall catered.

Soon after refreshments, the guests began dropping off in couples, pairs, and twos, and although an effort was made to get enough men together to sing some college songs it was not successful, and by 10.30 most of the guests had departed. Everyone reported a delightful time, and thus the affair was a pronounced success.


A COMMUNICATION.

It has been deemed advisable by the Athletic Committee that the captaincy of the 'Varsity team should devolve upon someone else. We have seen, from experience in past seasons, how detrimental it has been to a team, to be obliged to change captains in the midst of the season. We sincerely hope that no serious result will follow from the recent change that has taken place, and there is no reason whatever why the team should not improve and come out at the top. Mr. Ware has accomplished a great deal towards producing a fine eleven, and he should be given all the credit that belongs to him.

Mr. Warren takes the helm at a very critical point in the season and it only remains for him to keep up the good work that is mapped out for the remainder of the season. Members of the first and second elevens, and students at large, give Mr. Ware's successor the same support that you gave him and the football record of 1894 will be far ahead of its predecessors.

HENRY D. TEMPLE,
Manager.

FINALS IN TENNIS.

Coburn Wins.

The final match in tennis for the Landsing Cup between Sanford, '95, winner of the tournament, and Coburn, '95, the present holder of the Landsing Cup, who has held it for the last two years, was played on Saturday, Oct. 13. Coburn was expected to win easily, and he fulfilled expectations, although Sanford put up a very stiff game and succeeded in winning one set.

The afternoon was a poor one for playing, as it was cold and rainy, but each man put up a clever game in spite of this. Both men played a lobbing game, but Coburn smashed Sanford's lobs to good advantage. Mr. Goodrich, '96, was referee.
The first set was taken by Coburn, Sanford getting but a single game. Sanford then braced and won the next set (6-4). But Coburn easily took the next two (6-3, 6-3), and thus won the match and holds the cup for the third successive year.

Y. M. C. A.

The Y. M. C. A. had a meeting Sunday, Oct. 14, in the Salisbury Laboratories, conducted by Robt. E. Lewis, General Secretary of the College Y. M. C. A. of Mass. and R. I. The speaker emphasized the urgent need of personal work on the part of active Y. M. C. A. men to counteract the tendency toward indifference in regard to religion among the majority of college men. After the meeting an informal conference was held with the officers and others in regard to methods of prosecuting the work more vigorously during the ensuing year.

The meeting was very interesting and all who heard Mr. Lewis will be pleased to hear him again when opportunity offers. The meeting Wednesday noon was conducted by J. A. LeClerc, '95. Subject, "Every day mercies."

BASEBALL MEETING.

A large number of students assembled in Chapel to elect the officers of the Baseball Association for the ensuing year. Manager Gordon read his report for the past year, and showed that the $153 deficit handed over by the previous managers has changed to a surplus of $44.50. Loud applause greeted this announcement, and a vote of thanks was extended the manager.

The following officers were then elected:—President, George C. Gordon, '95; Vice-Pres., Frederick J. Zaeder, '93; Secretary, Frank E. Knowles, '96; Manager, Thomas H. Coe, '96; Directors—Fred M. Martin, '95; R. Sanford Riley, '96; Herbert H. Morse, '97; Charles A. Booth, '98.

HIGH SCHOOL vs. W. P. I. ’98.

Last Saturday afternoon, Manager Albertson of the High School asked Captain Dimick of the '98 class-team, to line up against the High Schools, in order to give both teams practice for their coming struggles. At half-past one, the teams lined up on Salisbury's field, as follows:

**High School.**

Cavanaugh, r. end l. Brown
Rebboll ( Capt.), l. half r. (Capt.) Dimick
Albertson, r. half l. Smith
Jordan, full-back Ferry
Boyle, quarter-back Synyer

The High School won the toss and at the kick-off the ball was fumbled, but was downed by Hawley. There were several good individual plays on the part of the '98 men, but the team lacked unity and practice. On this account they lost the ball, and the High School scored a touch-down. Then the ball went to Tech, and at the kick-off it was fumbled by the High Schools and was downed with little gain. But again, owing to superior strength, weight and knowledge of the game of our opponents, the ball was rapidly forced to the other end of the field. The next kick-off was fumbled, and Moody fell on the ball, but it was soon lost on downs. Another touch-down was made in a comparatively short time.

There were no goals kicked. As the Tech men were desirous to go to the Oval to see the Varsity play, the game was called with a final score of 16 to 0 in favor of the High School.

On the whole, the '98 men ought not to feel discouraged with their work in the game, taking into consideration whom they had for opponents and the time they have spent in practice.

THE TECH PIN.

A committee having been appointed by the class of '98 to decide upon a class pin, reported in favor of following the example of the preceding classes and of adopting the regular Tech pin. This pin was designed by a W. P. I. man from the class of '91, and should be worn by every student in the Institute. And if he should wear one, why should he not wear it while an undergraduate, as well as when graduated?

The price in former years has been four dollars, and through the efforts of the committee the price has been reduced considerably. If a guarantee of 20 pins can be obtained, they can be had for the price of three dollars and a quarter. This will include a safety guard, the owner's name engraved upon the back, and the class number upon the face of the pin. It is hoped that every student will avail himself of this opportunity and obtain a pin that will distinguish him in after years as a graduate of the Institute. All those who are desirous of obtaining one of these pins should hand their names to Harrington, '98.

ALUMNI NOTES.

’94. L. R. Abbot, graduate student in electrical engineering at W. P. I.
J. C. Abbot with Abbot Worsted Co., Westford, Mass.
E. A. Bickford with Bickford & Bliss, Worcester.
W. E. Brooks is surveying with the Northwestern Railway System in Wisconsin.
M. C. Allen, graduate student in mechanical engineering at W. P. I.
C. M. Allen, graduate student in mechanical engineering at W. P. I.
C. A. Burt, teacher in Normal School, Trenton, N. J.
H. L. Cobb, graduate student in electrical engineering at W. P. I.
C. W. Eastman, instructor in modern languages at W. P. I.
W. J. Baldwin, draughtsman for Southgate & Southgate, patent lawyers, Worcester.
E. L. Burdick, graduate student in mechanical engineering at W. P. I.
C. N. Chambers, superintendent of woodworking dept., Throop Polytechnic Institute, Pasadena, Cal.
W. B. Fuller, teacher of drawing and manual training, Horton Academy, Wolfville, Nova Scotia.
G. W. Heald with the Deane Steam Pump Co., Holyoke, Mass.
H. C. Hammond, graduate student in electrical engineering at W. P. I.
L. A. Howland, graduate student in electrical engineering, W. P. I.
F. E. Killam with Yarmouth Duck Co., Yarmouth, Nova Scotia.
L. Killam with Sprague Elevator Co., Bloomfield, N. J.
H. B. McFarland, instructor in mathematics, Canaan Academy, Canaan, Conn.
T. H. Nye, graduate student in electrical engineering at W. P. I.
H. P. Linnell with F. S. Smith, Civil Engineer, North Adams, Mass.
C. F. Perry, instructor in drawing and manual training in Honolulu, H. I.
F. W. Sawyer, graduate student in electrical engineering at W. P. I.

W. A. Scott with J. W. Bishop & Co., Providence, R. I.
H. S. Whitney, student at Eastman Business College, Poughkeepsie, N. Y.
A. H. Wheeler, instructor in mathematics at Worcester High School.
E. W. Peck, student in electrical engineering, Yale University, New Haven, Conn.

'91. Herbert A. Warren, supt. of sewers, streets and water, St. Albans, Vt., with his family, spent a few days in town recently.

'92. William F. Burleigh has entered the employ of Norcross Bros. as draughtsman.

Several Tech graduates took the United States Patent Office examinations at Springfield last month. They have not yet been heard from.

TECHNICALITIES.

Rumors are about that Gilbert, '95, is to be appointed Professor in Electricity.

C. R. Harris has been elected football captain for '96 in the approaching class contests.

Student (making impassioned speech in debate in Civics): Now gentlemen! Take this question right to your own hearts.

Overheard in Thermo. Prof.: Does a pound of steam weigh any more than a pound of water? Student: Well, er—yes, I think it does. (Class collapses.)

The sticking of the front door of the Salisbury Laboratories causes much trouble to both instructors and students. A little planing would remove the nuisance.

What is to hinder the management from having the football field marked out? A slight outlay of time and expense would do the work and give a better chance for a clear field and practice in side-line plays.

"Shall I brain him?" cried the hazer, And the victim's courage fled,
"You can't: it is a freshman, Just hit it on the head.

—University Courier.

Her lips were uplifted, Her cheek on his breast, Her head touched the button, And he did the rest. —Ez.
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F. E. WELLINGTON, '95, Agent for W. P. I.
<table>
<thead>
<tr>
<th>MACULLAR &amp; SON, Spring and Summer, 1894.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Our exclusive Styles in Ready-to-Wear Clothing and Custom Woolens are now ready for your inspection. We are showing especially hobb-y garments for young men, in both sack and frock styles—all coats being cut long and of the prevailing fashion. Our new three-button cutaway in black worsted or vicuna is just right.</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>H. F. A. LANGE, Floral Decorator, 294 Main St., Worcester, Mass., Keeps constantly in Stock</th>
</tr>
</thead>
<tbody>
<tr>
<td>FANCY ROSES AND FINEST ASSORTMENT OF CUT FLOWERS, Which he will arrange in Designs of any kind. Decorating Parlors and Halls a Specialty.</td>
</tr>
</tbody>
</table>

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