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WORCESTER, MASS.

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THE WPI


THE WPI.
Published on the 15th of each Month, during the School Year, and devoted to the Interests of the Worcester Polytechnic Institute.

BOARD OF EDITORS.
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Terms: One Year, $1.00. Single Copies, 15 Cents.

Remittances should be made to the Business Manager. Exchanges should be addressed: The W P I, Worcester Polytechnic Institute, Worcester, Mass. Communications with regard to all other matters should be directed to the Editor-in-Chief.

Entered at the Post-Office at Worcester, Mass., as second-class matter.

CHAS. HAMILTON, PRINTER, 311 MAIN ST., WORCESTER, MASS.

THE WPI has been called an organ of reform, whether or not this appellation has been in any way merited, it nevertheless cannot be expected that the W P I will be blind to see wherein improvement should be made, or that it will withhold criticism where criticism is needed, and it cannot go to press this month without expressing its belief that criticism is urgently needed, and that a large opportunity is open for reform.

We assume in what follows that we have the support and sympathy of all honorable and thoughtful fellow-students.

At 9.45, five mornings in the week, we assemble in chapel, for what purpose? Throwing aside for the time being the individual religious sentiments that may accompany our exercises there, it must be admitted that we assemble for the purpose of worship, and in right and proper recognition of the Divine. Chapel exercises are wholly for devotion and for the advancement of Institute work through the announcements and remarks for which time may give opportunity. Now we are not discussing whether the individual regard for the worship there participated in shall require a man to behave in a fitting manner; that is a strictly personal matter, but it is right and we feel amply justified in demanding that a respect for the feelings of others and the instincts of a gentleman shall regulate conduct if no higher motive exists. Fellow-students, is it too much to ask of each other that, in the spirit of the educated man towards which ideal we are striving, we shall show a decent degree of regard and respect for each other? Can there be anything manly in disturbing the singing and other chapel exercises by actions that would be contemptible in a grammar-school pupil? We think not.

We believe that every student here will agree with us. We grant it may be due to thoughtlessness, but if that be it, we must express a hope that a little more of the divine quality of thoughtfulness will be manifested.

Now, Fellow Techs, this article is not written by the Faculty, nor is it written with even their knowledge. No suggestion has come from them. The disgust felt by the student body is enough to demand that it shall meet with expression through its paper.
We admit that the hymns are not always the most modern, the music may not always be the most pleasing, we do feel new books would be very acceptable, and we know that of the hymns we dosing, some are vastly to be preferred to others, but, be that as it may, let us be gentlemen, at least, and show a little regard for our fellows if we do not appreciate the service itself, and when it comes to disturbances in prayer, we can only believe it is done, in sheer thoughtlessness. There is truth in the remark we have heard many of the students make, "Better no chapel services, than the miserable exercises we have had two or three times lately." We hope too that the future will witness more variety in the services themselves.

It is our privilege this month to announce much that is in the highest degree indicative of progress in Institute affairs. The development of the Department of Mechanical Engineering will be read by all with great interest, and we feel sure with approval. To one familiar with the past of the Institute, this is another marked step in the upward and outward reach that is steadily widening the scope of its work. It indeed "marks an era in the progress of the Institute." Our columns also indicate the continued gain in the work of our Electrical Department, and the extension of the resources of the Washburn Shops. The new mineralogical collections will greatly increase the efficiency of that line of research, and the Institute is to be congratulated upon the possession of some of the rare specimens they embrace. Perhaps the strangest indication of the progress of the W. P. I. is the recent action of the Trustees, noted in another column, through which it is to be hoped the Institute will be placed on a much wider financial basis, and we feel assured that the Legislature will grant the increase in the property-holding power which is to be applied for.

Every Alumnus will feel a thrill of pleasure when he reads of the healthy interest in foot-ball that this year is being revived. We have not won, but we feel a genuine satisfaction in the revival of the Tech's old pastime, and we are gratified not alone that foot-ball is awakening our enthusiasm, but we look upon it as the harbinger of a live and enduring athleticism that shall be carried on into base ball and the Inter-collegiate sports of the spring. There is latent material enough, but we want the training and vim that shall make it tell most kinetically.

We make no apologies for the full reports of foot-ball, we are glad to give it much space. We believe in Athletics as a measure of developing true man-hood, and not that alone, for we recognize wisely administered athletics as of incalculable benefit in advertising and bringing before the public the College and its other and deeper work.

In another column, full announcement of the Song Contest is given. The Institute, as far as our knowledge extends, has never had a song distinctly its own. The only thing of the kind we have at present is the Faculty song. This is of course nothing but a lively, meaningless jumble, and is not at all suitable for all occasions. We want something corre-
spounding to "Fair Harvard," and "Here's to good old Yale." A song that the Tech may be proud of wherever it is sung, a song which shall bring up old associations and carry the thoughts of the singer back to days of Alma Mater. We think there is talent in the Institute, and we know there has been. We devoutly hope this will develop the undeveloped, and incite to activity the smouldering genius of the Tech poets who have long ago left the busy, whirling environment of Tech Hill. Alumnus, you cannot better serve your Alma Mater than by this tribute to her praise. Let your genius burn, and let the songs flow in.

The Board is not rich, would that it were, and you should have a better reward for your pains, but greater reward could not be offered than that of having composed the song that shall laud the virtues and beauties of your Foster Mother in the days and years to come, even when we are forgotten. It has been said "the lyrics and coins of a people live." We believe the Tech Song and the Institute Pin shall survive many a changing era of the Institute's life. And so we appeal to you that earnestly, thoughtfully you strive to secure the poem that shall live as long as she lives.

Do not pass this over lightly. It is of as much concern to the graduate as to the undergraduate. Remember, it is open to all. The decision will be impartial. We have no interest but that of our College at heart, and in her name we would enlist your activities for her honor.

The attendance at Mr. Walker's address, and the interest and pleasure with which it was received, lead us to make a suggestion to the Faculty. Why not have a lecture or an address upon some subject, by an authority in that subject, a regular thing on Monday mornings? There are innumerable men in Worcester who could and would address us for an hour or so. Since we are attendants of one of the leading educational institutions in the city, we ought now and then listen to the ideas of the leading thinkers of the city. The range of subjects is innumerable. Some would appeal to one set of students, others to another. Literature, Art, Politics, Finances, the Industrial World about us, all these subjects could be interestingly spoken upon by men right here in Worcester. Members of our own Faculty might speak of subjects pertinent to their special studies, and find ready hearers. Such addresses as these would not only be a source of pleasure and instruction to many students, a means of broadening them mentally and of giving them the enthusiasm and mental stimulus which comes from contact with thinking men, but it would also add materially to the opportunities offered by the Institute. Please talk this over at the next Faculty meeting and see if it is not both feasible and advisable.

What a pity it would be, yes! what a shameful disregard of honor, if one of our eleven, having shown fever heat of excitement, when the foot-ball team was organized, to become a member of the first eleven, having succeeded and practised in an assigned position, and, having been depended upon by Capt. Southgate to do a certain thing at a given sig-
nal should on a day on which the game was to occur, fail to make his appearance at the place designated at the time when he knew he was expected, yes absolutely needed by his captain and by his schoolmates; and should give as a reason that he "knew we couldn't win, and so I thought I'd go to the Musee." What a strain would our regard for him have if he afterward showed up and contentedly watched a man new to his position undertake to do that which he himself alone could do. We hope we have not any such men on our team. We have heard of such cases, however, on certain teams in this vicinity.

Too much cannot be said in condemnation of such men, when we consider the earnest work of our manager, our captain and most of our first and second elevens, as well as the enthusiasm of the school. Go right in boys, each man do his best, and we shall be proud of him, whether we win or whether we lose.

CHANGES IN THE MECHANICAL COURSE.

For some time Professor Alden has had under consideration the improvement of the Mechanical Course by more work in his department, especially in the distinctive work of the Mechanical Engineer. After much thought and study a plan was laid before the Faculty and met with their approval. Through the kindness of Prof. Alden we print the revised outline of work and briefly indicate the changes it entails. The plan as adopted is given below, and will with possibly some minor changes be substituted in the next catalogue for the outline on page 24 of the catalogue of 1891.

We will not make a direct comparison of the old and new plan, but a comparison with the page of the catalogue above referred to will make more plain to our readers, the exact changes.

Revised Outline of Studies.

**Mechanical Engineering.**

The figures indicate hours per week for each study.

**APPRENTICE HALF-YEAR.**

(January to June.)

<table>
<thead>
<tr>
<th>Study</th>
<th>Hours</th>
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<tbody>
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<td>Algebra, 3</td>
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<tr>
<td>Free Drawing, 4</td>
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<td>Shop, 36</td>
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**FIRST TERM.**

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<td>Physics, 3</td>
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<td>Descriptive Geometry, 1</td>
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**SECOND TERM.**

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<td>Practice, 10</td>
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<td>Summer Practice, 168</td>
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**JUNIOR YEAR.**

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**MIDDLE YEAR.**

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**SENIOR YEAR.**

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This revised outline will go into full operation with the next Apprentice class, though some changes for which it provides may be made for the present Junior and Middle classes. It will be seen that the three essential points gained are, first, the completion of pure mathematics before the spring recess of middle year, so that the study of Theoretical Mechanics may be taken up five hours per week for about seven weeks in the last part of middle year; second, the transfer of a part of the free hand drawing of the present course, to mechanical drawing, and the introduction of more machine design in the time thus gained; and third, the completion of the language studies, at the middle of the Senior year, giving more time for engineering studies and Laboratory practice during the last half of senior year. These changes give valuable time to students, in which to utilize the facilities pro-
vided in the Salisbury Laboratories, and put the course of study upon a much improved basis as regards the efficiency of the department. The adoption of this improved plan of study marks an era in the progress of the Institute.

NOTES FROM THE PHYSICAL LABORATORY.

A Thomson-Houston dynamo, capable of running six arc lights, has been added to Prof. Kimball's equipment for electrical work. The machine is of the type so familiar to all electricians and has the automatic regulator of the company. It is mainly the gift of Mr. Salisbury although the firm gave a heavy discount.

Since last June, Prof. Kimball has also added to his apparatus two Sir Wm. Thompson multi-cellular voltmeters capable of measuring from 40 to 120 volts and from 100 to 400 volts respectively, a vertical voltmeter with a capacity up to 4000 volts and a Weston milli-voltmeter which may be used to determine pressures as low as 1000 volts. These instruments were greatly needed and will materially aid the progress of the students in electricity.

Messrs. Bradford and Rice who are pursuing an advanced course in electricity have designed and are building a dynamo, which is to have a capacity of 40 incandescent lamps and give a potential of 110 volts. It is to be run directly from the gas engine, and the jack shaft and other dynamos will be moved into the north room. The gas engine is thought to be capable of running only 20 lamps.

Messrs. Clough and Davis, who will be remembered as taking the Electrical Course last year, are now filling important positions. Mr. Clough is superintendent of the room for the assembling of railway motors at the Thompson-Houston Company's works in Lynn and finds his experience as a polo team manager of great service to him not only in securing positions but after he has secured them. Mr. Davis is in the experimental laboratory of the Westinghouse Company's works at Pittsburg. He has the testing of new types of machines and their alteration for improvement as his duty. He is regarded as a hustler by his employers. He has succeeded in his work in getting into circuit with a 1000 volt machine: but he is still alive.

SPECIAL ANNOUNCEMENT!

SONG CONTEST.

To all members of the W. P. I., the Alumni, and all past students:

The Board of Editors of the W P I believe that there is needed at the Institute a College Song, which shall be the distinctive song of the W. P. I. Therefore the Board offers

A Prize of $5.00.

For the best poem of that nature, consisting of not less than three stanzas, with a chorus.

COMPETITION

To be open to all past or present members of the Institute.

FEBRUARY FIRST

Is the date when all poems must be in, and the contest will close. Judges will be announced later. As soon as the words of the song shall have been decided upon, a similar prize for the

MUSIC

To go with them will probably follow. The Board reserves the right to publish any and all contributions received.
A COMMUNICATION.

THE ENGINEERING RECORD

Editorial Rooms,

New York, Oct. 20, 1891.

THE EDITOR OF THE W P I:

SIR—The copy of The W P I, just received, I have read with great interest as many of the articles are on subjects about which I have often thought of writing to you.

The letter from Mr. Risteen certainly ought to be framed and kept in your sanctuary. As a member of the second Board of Editors of The W P I, I know something of the trouble and vexation attending the first two years of its existence, but no one not acquainted with the facts of the case can appreciate the genuine hard work which Messrs. Risteen and Chittenden cheerfully gave for what I believe is now everywhere acknowledged to be a pleasant visitor to professors, alumni and undergraduates.

With regard to the second part of the letter, contributions on technical subjects, I think that every alumnus will agree with me that a page or so of technical matter, descriptive of novelties in the practice of our graduates, will be very welcome. There is a paper published in the Troy school, which is widely circulated among engineers simply on account of the excellent series of contributions from its graduates. For example, I saw an article by Mr. Waddell on the education of the bridge engineer, in a recent number, that was excellent, and the contribution last winter by Mr. Collingwood, the well known Secretary of the Am. Soc. C. E., on "Foundations," is the only complete monograph on this interesting and difficult branch of engineering in our language. Now, if Mr. Kendrick would let us occasionally hear from the Northern Pacific R. R., or if Mr. Donovan, Mr. Barlow, and many others who are well known in railway work, would contribute articles on the interesting construction carried out by them, we would all be pleased. Some of our chemists could well spare time for occasional notes and from a slight knowledge of the extremely high pressure under which many mechanical engineering firms conduct their designing departments, I am sure that many of our friends of the glue pot and monkey wrench can spare time to give us letters. Of course, personally, I would like to see all such material appear first in the columns of The Engineering Record, but then, the editorial shears can easily convey the principal portions of such contributions from The W P I to the aforesaid paper. If The W P I would print for example an illustrated description of the Alden engine now in course of construction, I can safely predict that the article would be copied, in part at least, in fully half the leading American, English, and German technical journals. This would be a most excellent thing for the school.

Another very pleasant item was to the effect that Prof. White was to have an assistant. Every member of the '88 civils will remember the difficulties under which they worked. Stuffed in a closet, without ventilation, how those heads ached after five hours of drafting! The unfailing good temper of our over-worked professor under such conditions is a marvel to me, especially as I have had a slight experience in projecting facts into un receptive heads. It is to be sincerely hoped that some good friend of the school will send Prof. White off to Europe for a year to buy apparatus and enjoy himself, for he has certainly raised his department from an insignificant to a very high position by the hardest kind of drudgery with, until the last year, insufficient facilities.

The instruction in hydraulics and graphics is an innovation that will certainly be acceptable to the students. Our country is just waking up to the fact that we are living among municipal works that are a century behind those of Europe. Worcester is fortunate in having one of the best municipal engineers in the United States for City Engineer, and every student of civil engineering in the Institute should visit the precipitation works designed by Mr. Allen, which are undoubtedly among the best managed and most economically and scientifically laid out in existence. A careful study of hydraulics is absolutely essential to an understanding of sewerage and water-works engineering, and the proposed course will do much toward filling a very evident gap in the curriculum. I shall never forget the tedious evenings spent in endeavoring to acquire a knowledge of this subject in another country, the long sentences in an unfamiliar language, which necessitated holding on to the
subject with the point of a pencil while the elusive "principal verb" was chased over possibly half a page with another pencil. The first two-hour round with "William Tell" is not to be compared with that brain-

destroying toil.

Graphics cannot fail to be a most fascinating study. The truly wonderful saving of time which a familiarity with the scope of graphical analysis ensures, more than repays the study, and if an acquaintance with the slide rule is also added, the student is able to check off the algebraical work of days in a very short time. I would especially call the attention of the civils to this rule, which is invaluable to everyone who has many computations to make.

But I think that your editorial might lead an outsider to believe that steam engineering and thermo-dynamics were not essential to a civil engineer. Of course, a choice must be made between studies, and the change is certainly a good one, nevertheless the conscientious civil engineer will go over both these subjects within a few years after graduating. The steam engine is at the bottom of all our work, and the study of the principles on which its action depends, and the various modifications it receives for special uses will occupy the leisure hours of many civils after their sheepskins have been received.

The member of the class of '88 who wrote the letter on "English at the W. P. I." is unknown to me. While at the Institute there was but one of my classmates whom I would have selected as guilty of suggesting Buckle's "History of Civilization" as a study, and I know he did not write that letter. Buckle is all right when you are old enough to feel obliged to wear a silk hat and have a razor toy with your face every day, but as a steady diet is it not a trifle too mature for even a Senior? I was much amused to read in the New York papers a few days ago, a series of articles, pro and con, on the course in languages at the West Point Military Academy, where the instruction is much like ours. The advocates of the course as it is, seemed to have the best of the arguments on every point. They summarized their position about as follows:

The course does not aim to give a speaking knowledge of any language. That can be acquired later, but every officer should certainly be able to read the technical publications in French and German. The drill in English composition, instead of being too long, is too short. Since most of the cadets are without the advantages of a college education. Every officer is required to make reports and he should certainly be able to use his native language fluently in their preparation. A brief glance at the reports of army engineers will show that improvements can be made in this respect.

Now these arguments will, I think, apply to the Polytechnic Institute in every way. Many things might be changed for the better. For instance, a very noted Scotch physicist to whom I once related my difficulty in memorizing the Constitution of this great and glorious country remarked that such work was "bally rot." Yet he signed a paper not many years ago advising all students looking forward to scientific work to thoroughly ground themselves in the ancient classics, and one of his most noted books is stated by Greek scholars to show remarkable knowledge of textual criticism of Aristotle.

You will pardon my referring to my personal knowledge on this subject, but from a connection with the two leading technical papers in this country. I have been forced to see that many of our most famous engineers have next to no knowledge of the English language.

Now there is a vast difference between writing an essay and a technical article. Every one cannot write a magazine story but every graduate of a technical school ought to be able to describe a new machine or novel engineering undertaking in a clear manner. As a matter of fact, there are very few who can; at least that has been my experience. Generally they send in a long string of unconnected figures with a request to "fix it up," or else fill sheet after sheet of foolscap with big words and wonderful figures of speech. Sometimes enough waste paper is pruned off these effusions to half fill the basket over which the office cat reigns, and, in such cases, the contributor usually complains that the best part of his article was omitted. Occasionally some famous engineer refuses to allow this supervision and the result is interesting. For instance, not many months
ago, a very flowery paper appeared in the transactions of one of our national societies. Each quotation was duly credited at the bottom of the page and one, of absolutely no merit or originality, was attributed to "The Author." Now any editor would have saved the writer from such an exhibition of conceit if possible, but in the case in question this could not be done.

A good course in English will remedy this tendency to "high flown" or shiftless composition and the hard work it involves is more than repaid by the case in which reports can be made out in the future, when no time can be wasted from the busy moments of an extensive practice, to study the style of the document. In these days of well-educated stenographers, it is possible for the careless dictation of a busy engineer to reach the person or company addressed in clear and concise sentences, but the credit in such case does not belong to the employer but to the employee.

Yours very truly,

JOHN M. GOODELL, '88,
Assoc. Am. Soc. C. E.

INSTITUTE HAPPENINGS
From Oct. 15 to Nov. 10.


Oct. 22. Second eleven defeated Dalzell, 10 to 0.


Oct. 30. Stagg arrives and coaches football team.

Oct. 31. Mineral collection arrives. Holy Cross and Tech play a tie game, 10 to 10, on Worcester Oval.

Nov. 5. Second Eleven defeats Dalzell, 4 to 0.

Nov. 6. Stagg again coaches.


Nov. 8. Y. M. C. A. public meeting in Chapel.

Nov. 9. Tennis Association meeting.

The Y. M. C. A. will hold its meetings at noon in Room 3. The subjects are:

Tuesday, Nov. 17. Special meeting.


Wednesday, Dec. 9. Solomon's Advice to Young Men, Prov. 3.

Every student is invited to be present.

WE PLAY FOOT-BALL!

Although we do not win, each game shows improvement.

This month we have to record the playing of several games of foot-ball; a fact interesting alike to our students, our alumni, and, we hope, our Faculty. To say that the progress made in the game this fall has been small, would be to say one had not closely followed the play of our team, and did not realize the neglected condition of this pastime at the beginning of the current school year. We need not enlarge upon this portion of W. P. I. history. It is only too well known. However, to take up the foot-ball of the past four weeks,—as we review the progress made we cannot but feel well repaid for our (humble) mite contributed toward the support of the team and can only say, "Well done, you have merited the Institute's applause."


The first game of the month was played at Worcester Oval, Lake View, on Saturday, Oct. 17, and for opponents we found the Cambridge Training School eleven, fresh from three victories, one of them over the Harvard, '92, team. They showed up very strong, especially clever work being
done by Whittemore and Moore, two of the backs. As Moore is thinking of entering our Institute in January, his work was eagerly watched by all Techs, and he fully met expectations.

This game resulted in a defeat to the tune of 10 to 6.

The visitors scored their points by brilliant runs by Whittemore and Moore, Whittemore scoring a touchdown after a spirited run of 35 yards. Moore kicked the goal. During the first half some good work was done by Bartlett in downing opposing halfbacks about as soon as they got under way. Moore and Richards were both responsible for the second touchdown for Cambridge, the latter doing splendid blocking. Lincoln played full the last half. The entire half was replete with brilliant work by both sides, Richards, Gass, Whittemore and Moore carrying honors for Cambridge, and Chase and Hopkins for the Techs.

The W. P. I. score was made within 10 minutes of the end and was due to muscular force rather than science. Superior weight was beginning to tell and the ball slowly neared the Cambridge goal until Hopkins finally rushed it over, and Southgate kicked goal.

The teams were:

<table>
<thead>
<tr>
<th>W. P. I.</th>
<th>Position</th>
<th>Training School</th>
</tr>
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<tbody>
<tr>
<td>Stoddard</td>
<td>left end</td>
<td>Donovan</td>
</tr>
<tr>
<td>Bartlett</td>
<td>left tackle</td>
<td>Richards</td>
</tr>
<tr>
<td>Rogers</td>
<td>left guard</td>
<td>Scottson</td>
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<td>Stephens</td>
<td>centre</td>
<td>Wiseman</td>
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<tr>
<td>Butterfield</td>
<td>right guard</td>
<td>Pullen</td>
</tr>
<tr>
<td>Alderman</td>
<td>right tackle</td>
<td>Vaughan</td>
</tr>
<tr>
<td>Hopkins</td>
<td>right end</td>
<td>Gass</td>
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<tr>
<td>Chase</td>
<td>quarter</td>
<td>Manning</td>
</tr>
<tr>
<td>Rollins</td>
<td>left half</td>
<td>Eaton</td>
</tr>
<tr>
<td>Southgate</td>
<td>right half</td>
<td>Whittemore</td>
</tr>
<tr>
<td>Cushman</td>
<td>full</td>
<td>Moore</td>
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<tr>
<td>Lincoln</td>
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Our next page in foot-ball history takes us to Cambridge, where we line up against the Harvard freshmen, comprising some very promising players.

This was on Wednesday, Oct. 21, on the 1:20 train of that date might be seen the W. P. I. foot-ball eleven, two or three substitutes, the press, and a single member of the Institute to do the cheering. However, as this said member takes naturally to noise we were well provided for.

On reaching Cambridge the game was soon started, and the teams were as follows:

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<tbody>
<tr>
<td>Wadsworth</td>
<td>l. e.</td>
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<tr>
<td>Eddy</td>
<td>l. t.</td>
</tr>
<tr>
<td>Wardner</td>
<td>l. g.</td>
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<tr>
<td>Raven</td>
<td>e.</td>
</tr>
<tr>
<td>Murchie</td>
<td>r. g.</td>
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<tr>
<td>Alice</td>
<td>r. t.</td>
</tr>
<tr>
<td>Richardson</td>
<td>r. e.</td>
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<tr>
<td>Rollins</td>
<td></td>
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<tr>
<td>Whitman</td>
<td>q.</td>
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<tr>
<td>McNear</td>
<td>r. h.</td>
</tr>
<tr>
<td>Jackson</td>
<td>l. h.</td>
</tr>
<tr>
<td>Raymond</td>
<td>f.</td>
</tr>
<tr>
<td>Southgate</td>
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Our game this time was strong and energetic, intermingled with some very bad fumbling, particularly by Bartlett, who was not used to playing back of the line and did not do his usual good work.

The V was used to good advantage in the first half but was very easily stopped in the second, and should have been discarded earlier. A bad decision in this game, by Referee Tucker, probably lost the game to our boys, inasmuch as it not only lost Allen a pretty touchdown but discouraged the team a good deal. The play was a close one, however, and very difficult to judge on the spur of the moment.

The play opened sharp at 6.25, and Harvard had the ball. Raymond and McNear, who is already practising with the Varsity and giving good promise, selected the right end and scored on touchdown in exactly 6 minutes of play. Whitman kicked the goal.

Then on the third down Allen sailed down the field for 40 yards, and soon after carried it over, from which Southgate punted out to try for goal, but Alderman purposely tumbled and fell on it, saving us much ground. W. P. I., 4; Harvard, 6. Worcester soon got the ball again, but after unsuccessful wedges, it again returned to Harvard for alleged holding by Stoddard.

Then on fine work by Jackson and Raymond another touchdown for Harvard, and the goal made it Harvard, '95, 10. W. P. I., 4. Again our wedges proved futile, and Allen, the reliable, again loomed up in good style scoring another touchdown, and our scoring ended: with the score 10 all, after a pretty kick by Southgate. The wedges were tried again and again in the second half but not successfully, and Capt. Southgate would have done better to have used his backs a little more.
Jackson, Raymond, and McNear did some more good running and blocking and put in another touchdown, after which Whitman sent the score up to 16–10 in Harvard's favor by a goal kick.

Allen made several good gains during the remainder of the game, but was not blocked to any extent and consequently did not score. Allen also made some fine tackles, and his playing was commented on by several of the bystanders. The ball finally got so close to the Harvard goal as to have been almost sure for another score, but luck was against us; Capt. Southgate made a try for a goal from the field and failing, lost the ball, and several yards beside. Then our team seemed to be beaten and it was easy work for Harvard to complete the victory with another touchdown made this time by Jackson after a good run. Score 20–10.

The umpire of this game was Mr. J. A. Saxe, the old Harvard half-back, and the referee, Mr. C. A. Tucker of the W. P. I.

Amherst Agricultural, 36; W. P. I., 10.

Not contented with their excellent showing against the Amherst eleven, the Amherst Aggies, old rivals of the Tech, came to town Saturday, Oct. 24, and gave the W. P. I. eleven a good lesson in team work.

This team was a shade heavier than ours, but that alone was not what won the game. We were simply out-played and out-witted by the sturdy Agriculturists.

The game was at the Oval as usual, and at 3.30 sharp the following men faced each other.

Amherst. W. P. I.
Rogers, r. e. Rollins.
Allen, Capt. Temple.
Graham, r. t. Lincoln.
Boardman, r. g. Stephens.
Southgate, r. g. Burdick.
Borden, c. Rogers.
Crane, l. g. Butterfield.
Henderson, l. t. Alderman.
Parker, l. e. Hopkins.

Amherst opened up the game with a gain of 25 yards on a V and passing to Perry, who circled the end. This was big encouragement and soon after, he took 40 yards more, and a little later, successfully carried it over the line. Perry stock went up. Willard kicked goal and they had us 6 to 0.

Worcester gained 40 yards on a punt soon after getting the ball, and were still 20 yards ahead when they recaptured the ball.

Hugh M. then bored a hole in the centre and was rewarded with 10 yards. Then we lost the ball on four downs. Graham and Clark now bucked the centre with a total gain of 22 yards, when again the sphere changed hands, only to return to Amherst with no gain to Worcester.

Perry was a gainer again for 20 yards this time, and then we had the ball once more by excellent and gritty work in stopping the V's continually used by our opponents. Bartlett fumbled, however, and the ball was lost. Chase made a good tackle of Lehnert and then Aggie gained five yards by off-side play by the Techs, the same offense and penalty being soon repeated. Clark and Perry then enlisted in a little silent maneuver and the latter carried over the second touchdown. Willard failed to score his two points. Aggies, 10. Techs, 0.

Then Bartlett went at the centre and cleverly passed to Allen who cleared the space to the goal line with our first touchdown. Captain Hugh missed his goal. Aggies, 10. Techs, 4.

Perry and Clark now tried their luck but Chase and Rollins got through the line and down they went, losing each time. Then Allen and Southgate made good gains, but the ball then stopped and changed hands. Clark made a good run of 25 yards, and Davis added 20 yards more. This put it where Clark easily rushed it over and another goal was kicked by Willard. Score, Aggies 16. Techs, 4. This ended the first half.

We gained 5 yards on our opening V in the second half but Stephens was injured and replaced by Lincoln; Parker who had just arrived was also substituted for Henderson. Southgate punted low and before Davis could return it Rollins and Allen downed him. Where was George W. then? But Perry took that ground back again, and then Parker made the best play of the game around the right end, landing the ball close to goal, and Clark finished the well started touchdown. Willard again missed his goal.

On a fumble, Rollins got the ball and ran the length of the field but the ball was
down when he got it and it did not count. Clark then gained 20 yards at the centre and another touchdown soon resulted, followed by a goal by Willard. Score, Aggies, 26; W. P. I., 4.

Then Bartlett and Butterfield made good gains, that of the latter being 25 yards. Had he been blocked, a touchdown could easily have resulted. Soon Rollins went through with a rush and gave us another chance to yell, which opportunity we immediately improved. Southgate kicked his goal, and brought our score up to 10.

Then Amherst worked the criss-cross trick and Parker circled the right end, gaining 25 yards. He was finely blocked. Davis helped out by carrying it over and another kick sent up the score to 32 for Amherst. Our boys still played with vim, and many a man went down in a Tech embrace, Rollins and Lincoln distinguishing themselves.

The Aggies had just time to make another down and it was again Perry who did it. Willard missed his mark this time and the game was over.

Amherst, 36; W. P. I., 10.

An Amherst man refereed the game and F. A. Morse, W. P. I., '92, umpired.

W. P. I., 10; Holy Cross, 10.

Saturday, Nov. 1, we played a cross between a foot-ball game and a match of kicking with the Holy Cross team, comprising eleven men and a referee. This was in justice a victory for the W. P. I., but the man whom Holy Cross selected for referee, Mr. A. A. McCauley, did not understand the game of foot-ball at all, and so decided all questionable and several unquestionable points in favor of H. C. C.

Our boys played in splendid form and showed much improvement in blocking and tackling.

The Holy Cross team put up a rough game throughout and it was only by Mr. Morse's careful observance that much slugging was prevented.

Allen and Chase did the best work for the W. P. I., but the most commendable thing was Capt. Southgate's excellent control of his temper. It did seem as though he must give way and go mad at some of the robberies committed by Mr. McCauley, but all his kicks were gentlemanly and simply pleadings for a fair showing.

The teams lined up:—

<table>
<thead>
<tr>
<th>W. P. I.</th>
<th>Holy Cross</th>
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<tbody>
<tr>
<td>Stoddard</td>
<td>1. e.</td>
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<tr>
<td>Bartlett</td>
<td>1. t.</td>
</tr>
<tr>
<td>Proctor</td>
<td>1. g.</td>
</tr>
<tr>
<td>Rogers</td>
<td>1.</td>
</tr>
<tr>
<td>Butterfield</td>
<td>r. g.</td>
</tr>
<tr>
<td>Southgate</td>
<td>r. e.</td>
</tr>
<tr>
<td>Chase</td>
<td>q.</td>
</tr>
<tr>
<td>Allen</td>
<td>l. h. Capt. J. C. O'Donnell</td>
</tr>
<tr>
<td>Capt. Southgate</td>
<td>r. h.</td>
</tr>
<tr>
<td>Lincoln</td>
<td>f.</td>
</tr>
<tr>
<td>Tucker</td>
<td>J. J. O'Donnell</td>
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</table>

Holy Cross used weight and gained considerable through bucks at the centre, although soon the Tech boys began to stop their V's and they had to begin end work.

J. C. O'Donnell was good for a gain every time around the right, and he scored the first touchdown, from which no goal resulted.

Much off-side play followed and some very bad decisions by the referee. Lincoln, Allen, Chase and Southgate all made good gains, while the O'Donnells and Kelly were also successful. Bartlett's tackling was good for sore eyes. Alderman got through the line with the ball but was "called back."

The second half saw Tucker in Lincoln's place, and W. P. I. V's gained ground. Tucker played with good dash, but fumbled badly at times.

Allen made the pretty run of the game on a V start, and followed it up with another. The two netted 45 yards and carried the ball over the line for a touchdown. Tucker kicked the goal and Tech was ahead.

H. C. C. immediately began a series of bucks at the centre which were telling in effect and soon Captain O'Donnell scored the second touchdown, and his brother kicked a goal.

Then a desperate five minutes play occurred in which the Tech team covered itself with glory, dirt and gore. Allen, Southgate and little Chase all gained ground until within 20 yards of goal when Allen made two of his now famous dives for the right end, and dodging J. J. O'Donnell planted the ball squarely between the posts, and tying the score at 10 all.

Then all nerves were strained to the highest tension. Both sides awaited the result of Tucker's kick, but the approach-
ing darkness, the excitement of the moment, and the great responsibility unnerved him; the ball went too low, and the score remained a tie, 10—10.

**Brown University, 32; W. P. I., 6.**

Next came the Brown University game, a striking contrast, in that but few ungentlemanly actions occurred and general good fellowship prevailed.

In this game Allen, '94, fairly outdid himself and made the grandstand ring with applause. He was worked continually and sure for gain at every trial. Three jackets were necessary to keep him covered during the game, the first two being torn off in the mêlée.

The Tech V was ineffectual in this game and at times gained nothing at all. Chase, Southgate and Butterfield did some excellent blocking during this game and materially aided '94's little cyclone in his dashes. Bartlett played his usual splendid line game, and Tucker punted beautifully and blocked well, besides making several good gains.

The visitors showed up strongly at the centre where we were weakened, and Brown, E. Casey, Turner, Drawbridge, Estes and Tenney all played excellent foot-ball, the last three especially. Most of their gains came through the centre.

The line-up of the elevens was as follows:

<table>
<thead>
<tr>
<th>W. P. I.</th>
<th>Brown</th>
</tr>
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<tbody>
<tr>
<td>Rollins</td>
<td>l. e.</td>
</tr>
<tr>
<td>Bartlett</td>
<td>l. t.</td>
</tr>
<tr>
<td>Proctor</td>
<td>l. g.</td>
</tr>
<tr>
<td>Rogers</td>
<td>c.</td>
</tr>
<tr>
<td>Boyden</td>
<td>r. g.</td>
</tr>
<tr>
<td>Alderman</td>
<td>r. t.</td>
</tr>
<tr>
<td>Butterfield</td>
<td>r. e.</td>
</tr>
<tr>
<td>Chase</td>
<td>q.</td>
</tr>
<tr>
<td>Allen</td>
<td>l. h.</td>
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<tr>
<td>Lincoln</td>
<td></td>
</tr>
<tr>
<td>Capt. Southgate</td>
<td>r. h.</td>
</tr>
<tr>
<td>Tucker</td>
<td>f.</td>
</tr>
</tbody>
</table>

Brown opened the game with a snap that showed confidence and, in three minutes time, had scored, Tenney making a touchdown. Drawbridge kicked the goal.

Allen and Tucker made gains but Drawbridge gained back again, and after several changes in the ball's possessors Tenney passed to Brown, who ran 40 yards to the goal line scoring another four points. Chase prevented a good chance for a kick and spoiled a goal.

Then ineffectual Tech V's resulted and Tucker made 20 yards on a pretty punt. This seemed to be out of Lindsay's line for 'Tuck's' punts were never returned.

The Tech centre now loomed up as weak, for although Rogers was a tower of strength, the two guards were not enough to help him out. This left a hole through which Brown men took turns in going. Lindsay finally scored and Drawbridge again missed his mark.

Allen and Southgate now made several good runs, one of Allen's gaining 35 yards. Tucker's punt also gained a like amount. Brown finally got through the Tech line and took 35 yards when tackled by Tucker. Then time was up.

The second half opened with a rush. A V shot forward, Allen came out to the right with the ball, gaining five yards. Then Southgate bucked the centre giving Allen a rest preparatory to his great exhibition of twisting and dodging through the Brown team, in which he ran from the centre of the field to within three yards of goal before he was finally overtaken by Estes. The clever blocking of Southgate and Chase aided him much and was a decided novelty and treat to Tech spectators. Tucker kicked his goal and again we had a chance to applaud.

Then Tenney and Casey sent the ball the other way and Estes got through the line scoring a touchdown for Brown. Drawbridge kicked goal. Allen again sent the ball towards Brown's goal, but E. Casey got away from all the boys and, running two-thirds of the length of the field alone, scored another touchdown. Again a good kick by Drawbridge.

Allen, the reliable, was again sent around the right end and gained 25 yards. But Tenney, Casey and Estes soon gained it back and much more. Tenney's interference with Casey alone prevented a touchdown. Allen was again needed and he this time cleared 35 yards before being overhauled, again well blocked.

Tucker saved another touchdown by a magnificent tackle of Tenney, and Straight took Tenney's place, Chase going to Brown's place soon after.

Allen again took a gain out of the cen-
tre, was exhausted, and Lincoln came in. Straight made a mad run through the line scoring a touchdown, and another goal resulted. This ended the scoring.


SECOND ELEVEN GAMES.

The second eleven, so-called, has had to win all the victories for the Institute this fall. Just what the second eleven is, is rather hard to say. Some evenings it has consisted of 15 or 16 players to oppose the first eleven, at other times it has had to be reinforced by " 'Varsity!" players in order to make up the full number. There has been no definite organization, anyone getting a suit and wishing to play, having been allowed to do so. Cushman, '94, was captain the first part of the season, but he being crowded for time, resigned, and now Andrews, '93, is in his place. But two regular games have been played, both with Dalzell School eleven. The first one Oct. 23, score 10 to 0, the second, Nov. 5, score 4 to 0, both victories for the Tech. The latter game was especially interesting, "Andy's" rat-like scuds keeping up the excitement.

More games would have been played outside of the Institute, but that Capt. Southgate has wanted the second eleven to play the first every evening when possible. The Dalzell is a first-class team considering the size of the school and the weight of the players, and the games between it and our second eleven are a mutual benefit.

THE SHOP.

Important Changes.

The management of the shops has profited by the experience of last year, and has already begun to arrange accommodations for a still larger Prep. class. The changes are the most important made in the wood-room for years. In the first place, one half the lumber room in the ell has been partitioned off and is to be used for machinery. In here are to be placed the Daniels planer, an edging saw, with 16-ft. carriage, for edging long lumber, and a large railway cutting-off saw. The brick wall between the foundry-room and main room is to be taken down, and the glass partition separating the bench-room is to be moved to within about 10 ft. of the lumber-room door. The tool-room has been taken out and will be reset in front of and including a portion of the foundry-room. All the machinery of the old bench-room is to be moved to that end of the shop nearest the Labs., besides the mortiser, borer, saws and tenoner. A new bench is to be put in where the tool-room was, another in place of the old jig-saws which have also been changed to the outer room, and a section of eight benches will be built across the middle. Starting from the corner where the Daniels planer now is, and running parallel with the wall, three rows of eight lathes each will be set up, besides the Georgia and "O. M." lathes. There will be twelve new lathes in all, three of them 24-inch. A new 18-inch shaper and a jig-saw have also been purchased. These alterations will greatly increase the facilities of the wood-room, and a Prep. class of 70 can easily be accommodated next spring.

COMMUNICATION.

Mr. Editor:

Knowing your paper to be the exponent of true reform, I have thought it the most effective means to bring about a certain change which I have very much at heart.

While some of our professors are studying the problem,—The Purification of the Worcester Sewage,—and while there is a club in existence at the Institute, whose avowed object is the examination of samples of sewage, we have on the Institute property at the Shop, a system of water-closets which is certainly not a credit to the Institute. Water-closet! did I say? I would they were water-closets; then the necessity of this article would be done away with. Surely every reader must know to what I refer. It is a matter which concerns all of us who are mechanics. I would not for a moment cast any blame in regard to their condition upon the engineer who takes care of them. They are kept as neat and clean as possible under the circumstances. But the fact is that no water ever passes through those closets in a stream except the engineer gets a painful at the sink and pours it through. I think I do not exaggerate. And yet this nuisance has been allowed to continue. Several of the men in the shop have spoken to me about this, but naturally no one likes to be
the first to make any complaint. Of course the odor which pervades the whole region of the sink-room is what must be expected. I wonder if it is very expensive to put in the modern flush closets. I suppose it is the duty of every one of us to promote the interests of our own health. These closets are positively unhealthy, to say nothing of the disgrace of having them upon the Institute property. This is why I have felt it my duty to approach this matter. I might go much farther with this subject, but "A word to the wise is sufficient." We all know the condition of things. If these remarks should be in any way influential in bringing about the desired reform, I am sure the voices of all the mechanics and also the journeymen in the shop, would go up in one long loud Amen.

Mechanic.

THE WASHINGTON CHAIR.

Since the term's beginning something entirely out of the ordinary has been instituted. It appears on the platform in the chapel in the shape of a chair, a perfect work of art in itself. It has been allowed to remain there since last Commencement Day when it was brought out to grace the occasion. Its periodic function is to serve as a seat for the President of the Trustees during the reading of the abstracts from the theses. The President, however, prefers a seat higher than this one and consequently hardly ever sits in it. Heretofore, immediately after its duty had been performed it was relegated to the tower, but contrary to the established custom this time it has still served to adorn the platform where it is hoped it will continue to be kept.

The chair was made in the shops of E. W. Vaill, a former entering chair manufacturer, now retired, and was placed on exhibition at the Centennial in Philadelphia. Its design was to represent historical features commemorative of the Revolutionary days. During the exhibition it received bestowals of praise and admiration both as to its appropriate construction and as a work of art, and particular mention was made of its fine elaborate carving.

Returned to this city and in the following year given to the Institute. Under the back of the chair hangs a silver pendant with the inscription: "Presented to The Worcester Co. Free Institute of Industrial Science by E. W. Vaill, Manufacturer of Folding Chairs, 15 Union St., Worcester, Mass., July 10, 1877."

The whole embodies features pertaining to the Revolutionary period and the faithfulness of execution is remarkable. On the front legs is the representation of two minute-men ready with gun in hand and powder-horn slung over the shoulder. The rear supports of the chair are old-fashioned muskets complete even to the match-locks and ramrods. Surmounting the back of the chair the bold and fearless American eagle stands,—an artistic piece of carving. The cross-bar near the top has the figures 1776-1876 and at the junctions of muskets with the cross-bar are the medallions of two Revolutionary generals. On the heart-shaped back is the picture of the immortal George Washington surrounded by an embossed surface of blue adorned with gilded stars. These particular parts have no doubt all been noted, but the high degree of fine workmanship displayed in its construction and embellishment needs to be appreciated to fully realize the superior excellence of the chair. The Institute has done well to treasure this work of art and preserve it from injury.

MEETINGS OF THE TRUSTEES.

Two meetings of our Board of Trustees have been held this month. From the Telegram of Oct. 18, we quote.

"The regular quarterly meeting of the trustees of the Worcester Polytechnic Institute was held at the rooms of the American Antiquarian society at 4.30 yesterday afternoon. Hon. P. Emory Aldrich presided, and there was a full attendance of the trustees.

It was voted to adopt a new hour-plan recommended by the Faculty, to expend $4,000 for additional machinery and equipments for the shop and to authorize the purchase by the faculty of a collection of geological and mineralogical specimens.

Certain questions relating to the fundamental policy of the institution, proposed by the faculty, were referred to a special committee consisting of Hon. P. Emory Aldrich, Hon. George F. Hoar and Charles H. Morgan. These questions will be con-
sidered and reported upon at a subsequent meeting of the trustees.

The board voted to petition the legislature for permission to hold a larger amount of property than at present. The corporation is now legally entitled to hold $1,000,000 worth of property, and it will ask the legislature to raise the limit to $2,000,000.

The trustees expressed themselves as highly pleased at the condition of the institution, which was never in a more prosperous state."

The same paper on Nov. 8, printed the following:

"The trustees of the Polytechnic Institute held a meeting yesterday afternoon, with all of the board present except Rev. Dr. Daniel Merriman, who is abroad, and Mayor Francis A. Harrington, who was unable to be present, owing to official duties. Judge P. Emory Aldrich, president of the board, presided, and read an exhaustive paper on the relations of the Washburn shops to the Institute, holding that it has no independent existence, but is simply a department of the institution. The paper called up considerable discussion.

The shops committee was instructed to look up the patents on elevators and report at a future meeting.

The trustees have agreed upon an interchange of courtesies, permitting the students of Clark University to attend lectures at the Institute, a similar privilege having been extended to the Institute's professors and students by the University."

Y. M. C. A.

Those who assembled in Boynton Hall, Sunday afternoon, Nov. 8th, enjoyed an intellectual treat.

The Y. M. C. A. opened its observance of the week of prayer for young men by holding a special meeting in the chapel. President Heard presided and Mr. Marshall very kindly assisted in the music with a violin. Prof. G. I. Alden offered prayer.

T. E. Brayton, Jr., and L. C. Smith gave very interesting reports of what they saw and learned at the Y. M. C. A. convention held in Brockton in October. The needs of more personal work and more Bible study were especially emphasized.

Rev. Dr. McCullagh of Plymouth Church delivered a splendid address to young men, and held the closest attention of all present. He showed the wonderful power of the young men of ancient and modern times, and the necessity of a manly, Christian character in the young man of to-day.

Rev. Charles H. Pendleton, one of the trustees of the Institute, by his bright, pithy remarks, proved that he had not forgotten his college days and that he understood the characteristics of the student's life.

It is to be regretted that more of the students did not avail themselves of the privileges of the hour.

UNIVERSITY EXTENSION.

An Outline of the Plan as now Being Carried Out by Many Colleges.

To a few, this term may be entirely new, or least not clearly understood. By it is meant the idea of extending the work of a university so that those who have not sufficient means to obtain a college education, may, by attending a course of lectures, gain considerable benefit. The plan is to establish centers in different parts of every State. On certain evenings of each week, lectures will be delivered in these centers upon various subjects and by professors of colleges, academies or universities. The subjects are to be scientific but not technical. That is, they are to be such as may be readily comprehended by a man of average ability. For instance, five lectures may be held each week. One may be upon English Literature, another upon Art, while the others may treat of either Astronomy, History, Zoology, Mathematics, or perhaps Electricity. It is intended to present a wide range of subjects so that the variety may attract more persons than would otherwise attend the course. If such a course can be carried out successfully, nothing so valuable as an educational means has been attempted in a long while. The project is not a novel one to be sure, but yet if entered upon with vigor by a majority of our colleges, it will possess a sort of novelty which may succeed by its attractiveness. Not very much has been accomplished in this State so far, but in Rhode Island many centers are springing up. The one in Newport was organized with a membership of forty-two. The first lecture of the course was delivered Oct. 6. The subject was Constitutional
History. At Mt. Pleasant, President Andrews, of Brown University, delivered the first lecture of the course on English History. There was an attendance of over one hundred.

In Providence, courses upon the following subjects have been outlined: Botany, Zoölogy, Astronomy, English Literature, Art and Architecture. Centres have also been established in Pawtucket, North Attleboro, Attleboro, Wickford, and Central Falls.

A very large attendance has been the rule in each of these places. Naturally there would be. The question which arises is: Can this attendance be kept up? It may be of interest to the students here to learn that about ten or fifteen years ago, a series of lectures were delivered in Mechanics Hall before members of the Mechanics Association, by the various professors of the Tech. Professor Kimball gave lectures treating of machinery; the other professors spoke on Art, Mathematics, etc. Now if it were possible for such a course to succeed one would imagine that no better field than this could be found. The lecturers were well qualified by experience and education to fully uphold their end of the work; the audience was composed almost entirely of the artisan class, and all could be said to have at least a common school education; the topics were directly in their line of work and the community was a manufacturing one. Everything was in favor of the plan and success seemed certain. But the experiment was so far from being a success that nothing like it has been attempted in this city since that time.

Professor Kimball was very fortunate in his subject, and succeeded in finishing his series of lectures, although, as he says, the attendance dwindled at an alarming rate. To illustrate the different phases of his topic, he had recourse to experiments on machinery which had been set up for the purpose. This occupied the attention of his listeners and helped him in his work, so much so that were it to have been dispensed with, the professor fears he would have had the pleasure of talking machinery to empty benches.

The other professors never finished their courses, at least, never completed in the way anticipated. Mathematics started off “swimmingly.” Attendance reached the tide-water mark first evening, the prospects were bright, but ——. The work, of course was practical, it was all work. There was no machinery there with which to illustrate the problems and enliven the work. So attendance dropped, that is, the class began to have previous engagements and graduated before the instructor had time to make out the diplomas. The other classes fared almost as badly. Still some may affirm, and with much truth, that the times were not ripe for such a course, that the idea was premature. That may be so, yet it must be remembered that this was about the time when the lyceum flourished. The country, town, and city lyceum with its program of practical and theoretical subjects, which were listened to with the most conscientious regularity. But, if it may be said, listened to in much the same manner hundreds of persons listen to our musical festival simply because it is “the thing,” merely to obey the inexorable laws of fashion.

Perhaps this might come as near the true reason of the failure of that course of lectures, and perhaps of the failure, if there be failure, of the proposed extension idea, as can be found. It is rather too much to require men who work in a shop for ten hours each day to willingly give up two hours in the evening for more such practical work. And this is so, even though much benefit may be derived from such extra work. This is the age of amusements; the public craves for excitement; it wants to be tickled, and in the nature of things it is a matter of necessity that the demands of the sovereign people be complied with. For proof of this, witness the number of farce-comedies upon the stage, and most of all regard the so-called wit and humor brought into every political campaign.

We sincerely hope this scheme of university extension may be carried out, but we greatly fear it will in many cases fail of lasting success.

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A CORRECTION.

Through an oversight in proof-reading, our last number stated that the Alden Engine was furnished with a ball governor; it should have been Ball governor.
TAKE MOMENTS.

Upon request of many of the Seniors, the following poem has been reprinted. The moral is excellent. We think we have heard it before.

The shades of night were falling fast,
As through the drawing-room there passed
A crowd of Seniors: each one bore
Bowser's Mechanics, saying o'er
"Take moments!"

Their brows were sad; their eyes beneath
Flashed like the "Witch of Agnesi's" teeth,
And like a "cart-wheel dollar" rung
The accents of the song they sung,
"Take moments!"

Is there no earthly way to do
Those little sums of crank and screw?
Around the spectral problems shone,
And from their lips escaped a groan,
"Take moments!"

"Now try this one," the old man said,
And down it came on the Senior's head.
"I cannot do it," he replied.
The "Prof." in tones of thunder cried,
"Take moments!!!"

"O stay," the maiden said, "and rest
Your o'erwrought brain upon my breast."
"I will," the Senior cried with haste,
"And with my arm around your waist,
'Take moments!'"

"Beware of ∑ X and ∑ Y,
When you around the fulcrum pry."
This was the "Prof's." last warning word
And from the Seniors' round was heard,
"Take moments!"

At break of day, as heavenward,
The pious Techs the stairway trod,
A sound came on the startled air,
And then they heard a Senior swear,
"Take moments!"

And in the twilight cold and gray,
A rigid body there he lay,
While in a trajectory line,
A voice slid from a plane incline,
"Take moments!"

It may be of interest to know that this poem appeared in the November issue of the then W T I, six years ago.

THAT HOLY CROSS GAME.

Although that game was played two weeks ago, it does not appear to be settled yet. Before the game was started the manager of the Holy Cross team wished to arrange another meeting of the two elevens, either Nov. 14 or Thanksgiving Day. But he was told that it would be impossible to gather the men Thanksgiving, while for Nov. 14 a game with the Brown Freshmen was being arranged.

In regard to this, matters were thought to be definitely settled between the two colleges, but it seems that there was an accidental or intentional misunderstanding on the part of the Holy Cross men. The next Wednesday the following letter reached the Institute after having been published that morning in the daily papers:

WORCESTER, MASS., Nov. 3d, 1891.

MR. C. H. SMITH:

Dear Sir:—Noticing in the various papers that the "Tech" Foot Ball Eleven lay their failure to win to the decisions of the referee in last Saturday's game and to prove that such is not the case, we, the Holy Cross Foot Ball Eleven, do hereby challenge the "Techs" to play a game Saturday, Nov. 14th, or Thanksgiving Day, at the Grove St. grounds. The winner to take the entire gate receipts and loser to pay all expenses. The two teams to comprise only students attending the competing institutions. The referee and umpire to be appointed by a disinterested party. This offer remains open until Monday, Nov. 9th.

Signed / JOHN P. PHELAN, Manager,

Holy Cross Foot Ball Eleven.

There is at least one correction to be made in the above epistle. Notwithstanding the fact that all the papers agree with most remarkable unanimity with laying the failure of the Techs to win upon the unique decisions of the Holy Cross man who was made referee, yet the Techs do not take this view of the matter. They simply say that they lost the game owing to their inability to overcome the handicap of twelve men to eleven.

However, the interesting part of the letter begins with the last will and testament: "we —— do hereby." "The winner to take the entire gate receipts and loser to pay all expenses." This is from a college where professionalism is ignored. But how natural it sounds. Something after the style of "One hundred dollars a side at Agricultural Park." "One mile run—for gate receipts."
“Hundred yards dash for $2.00 and championship of .”

We do not know whether this clause has received the sanction of the better class at Holy Cross or not, but it certainly should receive the condemnation of all who would see amateurism and professionalism separated by as distinct a line as can possibly be made. Imagine Harvard challenging Yale and making such terms. College football would go down with a crash.

The Holy Cross Foot Ball Eleven and its manager should at once see the hopelessness of ever arranging college games upon such a basis.

ELECTRICAL ENGINEERING.

Edited by the Tech Elect

One of the questions discussed by electricians at their recent meeting in Franklin, was “What is the best course of training for men who are intending to become electrical engineers?” American electricians took little part in the debate, and since the conditions of apprenticeship are so different in Europe and England from those which are found in America, the discussion has little value for us, except as indicating the subjects which should be included in such a course. It seems to be well settled that these are Physics, Mathematics and Mechanics. What is said here, of course refers only to the technical side of the engineer's training. It is to be taken for granted that any engineer to-day needs as broad and liberal an education as a lawyer. The relation of the three subjects specified above to electrical engineering, as well as the broader question “What is an engineer?” may be deferred for the present.

Questions are often asked whose answer involves a comparison between the relative value of a knowledge of mathematical electricity and what our friends over the water call “workshop practice,” and the answers vary as the speaker happens to be a mathematician or a mechanic.

No one is competent to answer such a question who cannot look at it on both sides, and when a man of this sort gives his opinion he is very apt to say, “They cannot be compared, both are absolutely necessary; they are like the two paddles of a side-wheel steamer, disable either, and you will go round and round without progress.”

The man who asserts that a thorough knowledge of books and large experience with measuring instruments is all the technical training an electrical engineer needs, makes as bad a mistake as one who says, “An intelligent mechanic can pick up enough electricity in a few months to make a skilled electrician of him.” Both men would speak without knowledge. The first course might make a “paper engineer” who would be useless for practical work, the second would train a good “wire puller” who might safely be made dynamo tender for a company that was heavily insured against accidents. It is doubtful whether a man can become a good engineer in mechanics or electricity who is not a fairly skilful workman.

There is no question that a certain appreciation of mechanical values comes to a man as the result of the actual use of tools which he can obtain in no other way, and much stress should be placed on this part of our engineer's training. It is, however, only a part of his training and no degree of skill can supply the lack of a thorough knowledge of mathematics and electrical theory.

A. S. Kimball.

STATE CONVENTION OF Y. M. C. A.

The 26th Annual Convention of the Rhode Island and Massachusetts Y. M. C. A. was held in Brockton, Oct. 23-25, with 610 delegates.

Friday evening, President Merrill E. Gates of Amherst College delivered an address on “The Strength of Young Men.” W. E. Chalmers of Brown University, gave an account of the College Deputation work, and James McConaughy of Mt. Hermon, gave a talk on “Ways of Interesting Young Men in Bible Study.”

At the College Conference, Saturday evening, about fifty delegates were present, representing Harvard, Brown, Amherst, Williams, French Protestant College, Boston University, Mass. Institute of Technology, Andover, Mt. Hermon, Taber Academy and the W. P. I. Rev. S. M. Sayford, the College Evangelist, presided.

John C. Campbell of Williams College read a paper, “How can the Colleges ob-
tain Permanent Results from College Deputation Work." He spoke of the new ideas which were in this way carried from college to college, and the tie which bound the colleges nearer together. There are two things necessary to permanent results, the right kind of delegates, and the right attitude of the visited Association.

The subject "Ways in which the College Men can assist Local Associations," was discussed by F. N. Robinson of Harvard University. He spoke in his paper of the great help which college Associations can give in leading and aiding in religious meetings, in social work, and especially in the education of classes of the different local associations near the college. He illustrated this by stating the work on these lines done by Harvard during the past year.

An informal discussion of College Association work followed the papers.

The Sunday services opened with a consecration service led by Mr. George H. Shaw of Middleboro. The delegates addressed the different churches at the regular services. Rev. S. M. Sayford gave his "Confidential talk to Young Men" in the afternoon to a large audience.

The farewell meeting was a most impressive service, consisting of a large number of short speeches.

Mr. George C. Stebbins was present and conducted the singing.

Note.—Our Y. M. C. A. sent two delegates to this convention, Mr. T. E. Brayton and Mr. L. C. Smith, both of '92.—Ed.

THE YORK AND HILLSIDE COLLECTIONS.

The Institute has just secured two valuable additions to its cabinets. The first is a collection of about 3,000 geological and mineralogical specimens purchased of William F. York of Nashua, N. H. It comprises especially fine crystals of quartz, amethyst, stilbite, tetrahedrite, chalcopyrite, copper, pyrite, staurolite, natrolite, chlorite, and Amazon stone. It has the finest native bismuth crystal known in the country, and the best and largest specimens of chiastolite ever obtained—nearly 200 in all, 60 of which are polished. There are beautiful and rich pieces of native gold in quartz, of pure plumose silver, and of native metallic copper and antimony, good crystals of hematite, magnetite, siderite and other iron and zinc ores, superior calcites, fluorites and selenites and some fine garnets, beryls, and tourmalines. Perhaps the most attractive part of the collection to the unpracticed eye is the great variety of mica crystals, of Mexican onyx, and of granites and marbles from almost every quarry in the eastern United States. Mr. York’s occupation of stone cutter gave him exceptional opportunities for selection, and he devoted his leisure hours to polishing with his own hand many of the finest of these specimens. He also travelled quite widely and brought from Nova Scotia, Canada, New York, Virginia and North Carolina treasures for his museum. He explored very thoroughly the northern part of Worcester County and had a strong wish that the fruits of his life-love might abide unscattered in this city. His minerals educated him, bringing many strangers to the parlor which was lined with the cases which held them, and leading to correspondence with mineralogists and museum curators throughout America and England. These specimens will afford fine material for lecture-room illustration, though the Institute had already a good beginning of a cabinet of crystals and ores. The best of the new specimens will be put in glass cases in Room No. 16, where students and visitors can have ready access to them.

The Hillside collection was made by Mr. John B. Gough and though not large—several hundred specimens—contains valuable fossils, ores of lead and iron, crystals of tin and copper ores from Cornwall, England, rare crystals of uranium, mesosite, rubellite, and green tourmaline, and some handsome chaledonies and agates. The chief use of this collection will, however, be in the abundant material it affords for test work,—many of the specimens affording under the blow-pipe two or more metals.

To classify, label and arrange all these will be the work of some weeks and perhaps months, but the Middle Class divisions in Mineralogy will have the benefit of them without delay for permanent arrangement.

We would state for the benefit of all our correspondents that the name of this paper is the W P I (without the dots). Pronounce it if you can.
OUR WELLESLEY NEIGHBORS.

For the last three years, it has been the custom of the Senior class at Wellesley to publish the college annual called the Legend. The most recent number of this book, the one edited by the class of '91, was especially obnoxious to the college authorities on account of severe grinds which it was alleged the book contained. As a result, without any explanation therefore, the Academic Council has forbidden this year's Senior class to publish the annual Legend. This action of the Faculty excited much criticism and severe comments on the part of the students.

Of course the college paper, the Wellesley Prelude, which, by the way, furnishes this year's president of the New England Intercollegiate Press Association, sympathized with the undergraduates and would have come out strongly in their behalf, were such a thing as freedom of the press in existence at Wellesley.

But if encouragement for this year's annual were not to be allowed, congratulations for that of last surely would be in order, and so the Prelude for October 31, contained a half-column article in praise of the Legend of 1891, and wishing subsequent numbers a repetition of its success. The girls had given a partial vent to their feelings; but it would not do to countenance such an expression of opinion. President Helen Shafer discovered the article in question; the entire edition was ordered back to the printers and the obnoxious editorial was blotted out. Moreover, the students were kindly advised to send no items to the newspapers without first showing them to her.

But probably before the edict was given out, the exchange copies were mailed, for the one upon our table contains the following:

The Prelude is very glad to make known to the Wellesley World the success of Ninety-One's Legend. For the first time in the history of our college annual, the entire edition was sold, and that too, before the close of the college year. The book was sold at exactly half the cost of publishing it, and yet all its expenses were paid. Although the Annual has been a feature of our college life, for only three years, yet it is hoped that it has become an established feature. The merit of each number, and the eagerness with which it is welcomed, justify this hope, and gives evidence that the influence and success of our Wellesley Annual are assured. Most heartily and gladly does the Prelude congratulate Ninety-One upon the success of the Legend, the success which it so richly deserves.

HARPASTUM.

In our Ancient History we learn that the youth of both Greece and Rome were very fond of all kinds of athletics. Among all the varieties of sports with which these youth engaged themselves, was one called Harpastum, derived from the Greek word meaning to seize. It was played with an inflated bladder or skin, called folis, and in many respects resembled the game of football of to-day. Hence the origin of this most exciting game dates as far back as the days when Greece and Rome were in their glory. It is beyond all doubt that the Romans introduced Harpastum, or football, into Great Britain, though the game probably contained only the barest outlines of the modern game.

In the early times, Shrove Tuesday was considered the great foot-ball day of the year, and on that festival day, everybody played the game. It is even stated by good authority that both sexes took a hand in the sport on this occasion. This is almost beyond the power of our imagination, however. At this time, there was no code of rules for the game but the only object was to drive the ball through the opponent's goal by fair or foul means. Foot-ball was not so much played by the gentry or aristocracy of England, as was cricket, because it was too rough and James I. even forbade the heir apparent to indulge in the game. As the game became really too rough to play, and many serious accidents happened, Shrove Tuesday gradually died out about 1830.

For about thirty years following this date, foot-ball was only practiced at the great public schools, where they had two distinct forms of play. One where hands and feet were used and the other where the feet alone were permissible as a mode of propulsion of the ball. The Rugby game allowed the hands and feet to come into play and resembled the old Roman Harpastum and the rough play of Shrove Tuesday. Harrow and Winchester colleges were the main supporters of the game where only
the feet touched the ball, while Eton had two ways of playing the game; one called "At the wall," and the other "In the field." The latter was a mixture of both styles of play. It soon became apparent that a code of rules to govern the game was an absolute necessity. The fact was first recognized by the supporters of the real game of foot-ball, i.e., where only the feet touched the ball. Accordingly, in 1863, the Foot-Ball Association was formed and drew up a short code of about thirteen rules. A few of the main points of difference between the Association and Rugby game may be of interest. In the Association game a round ball is used and it must not be touched by the hands of any player except the goal-keeper. In scoring a goal, the ball must pass under the horizontal bar of the goal instead of over it as in the Rugby game. In 1871, the Rugby Foot-Ball Union was instituted. This body drew up a code of rules no less than sixty in number. The ball to be used is egg-shaped and play is permissible with both hands and feet. At first the Rugby game was played with fifteen men on a side. Ten of these were in the rush line, two played half-back, one three-quarters back and two full-back. The game is now played with only eleven on either side.

Such is the history of this most exciting game. But what do you think a Roman youth would say if he could see a game of Harpastum as it is now played? What would have been his remark if he had seen the wild chase that Allen gave the Aggies (Oct. 24), or the goat-like plunges that Southgate made at their centre? As he turns from the game and considers how many changes his old Harpastum has gone through, we can hear him saying to himself, "O' tempora, O' mores."

CAMERA CLUB.

The Prize Lens. Annual Exhibit, Etc.

The Camera Club contest for the prize lens, has at last been decided, and Higgins, '93, is the successful man. This lens which by the way, with the shutter, is worth in the neighborhood of $60, was offered early last Spring by the Bausch and Lomb Optical Co., of Rochester, N. Y. The understanding was that each member of the Club should be allowed the use of the lens a certain length of time, and the one taking the best picture, should have it.

The judges, Dr. Kimball, Instructor Phelon, and F. Flodin from the city, decided the contest Monday evening, Nov. 2. Each member of the Club had had the use of the lens for a week, but only six entered the competition. They were Messrs. Fitts, '91, Bracken, '92, and Vaill, Kent, Sinclair, Higgins, '93.

The judges were undecided between two pictures, one of a horse-trot at the N. E. Fair, the other of a group of children at play. Finally they turned the photos over, and found that Mr. Higgins had taken both, so of course he was awarded the lens. All the pictures entered were most excellent, two others of special merit being one of "Leap-frog" by Sinclair, and another of a hunter shooting a bird, by Fitts, '91.

At a recent meeting of the Club, a committee consisting of Messrs. Keith, Higgins, Sinclair and Kent, was appointed to arrange for the Annual Exhibit, to be held sometime in December. The members of the Club intend to have the exhibit this year, as much of an affair as the Y. M. C. A. reception. It is proposed to hold it in the Laboratories, two evenings if possible. All the crack pictures which were in the lens contest will be exhibited, and a great many others representing the works of members during the last season. An exhibit of lantern slides will be given in connection with the photo display. The committee also hope to be able to show some of the Mexican views taken by Osgood Plummer of this city, who is an honorary member.

As the Tech Camera Club is, we understand, the only camera club in the city, and as it already has a wide reputation, a most excellent exhibit may be expected, one to which it will pay every student to go and take his lady friends. Those who attended the attractive and interesting display of last year with its fine silver and dainty blueprints, will need no urging to repeat their visit next month.

The Camera Club is one of the most prosperous and creditable organizations we have and deserves the hearty support of the students.
THE SECRET OF SUCCESS.

"How does the little busy bee 

Improve each shining hour; 

And gather honey all the day 

From every opening flower?"

It's largely done by industry 

By hustling round the earth 

And working everything that's green 

For all the thing is worth.—Ex.

PERSONALS.

What the Tech. Present and Past. is Doing.

'87: Fred L. Emory is Professor of Mechanic Arts at Morgantown, W. Va., West Virginia University.

'88: John M. Goodell has left the Engineering News to accept a position on the editorial staff of the Engineering Record. He has also recently published a translation of Prof. Baumeister's book on the Cleaning and Sewerage of Cities. Through the kindness of Mr. Goodell a copy of this work has been added to the library of the Civil Engineering Department.

'89: J. A. Baylis is at work for the Bell Tel. Co. at Hamilton, Ontario.

Walter S. Ball has recently accepted a position with the Crompton Loom Works of this city.

'90: C. F. Treadway has recently accepted a lucrative position with the Union Rolling Mill Co. of Cleveland, Ohio.

'90 and '83: Paul B. Morgan, '90, and Victor E. Edwards, '83, are associated with Chas. H. Morgan in the Morgan Construction Co. Arthur W. Burnham, '83, and John J. Daesen, '89, are draughting for the same firm.

'93: Forest and Stream for October 15th, contains a half-page plan of the canoe Zip, a 16-ft. sailing canoe with 30-inch beam. "For this handsome design," so reads the description, "we are indebted to Mr. C. W. D. Dyer, a Holyoke, Mass., canoeist, now a student at the Worcester Polytechnic Institute." With the drawings are complete tables of dimensions and offsets. The whole represents a large amount of labor, and reflects great credit upon the designer.

TECHNICALITIES.

Translations of German made by many of the Middleter Mechanics are not only at sight but out of sight.

Echoes from the class-room. Mechanics Instructor: "What does water do when heat is applied?" Student: "It begins to melt."

Does a man who stays to a class meeting until 12.45 and is in consequence late to his dinner, deserve half a cut?

The man who wished to be excused on account of a violet nose bleed came very near belonging to the blue-blooded aristocracy.

Quite a number of Techs saw the Jefferson-Florence combination in the Heir-at-Law. They occupied seven of the six boxes.

Queercus wishes to know this time the equation for a string of sausages. There is no equation. It is generally represented by the symbol, $k_9$.

Pol. Econ. Professor: "What are the productions of a civilized community?" Student: "Agricultural products, manufactures and waterfalls."

By special arrangement, students can have the Electrical World sent to them for $2.50; regular price $3.00. Please give your name to the secretary of the Tech Elect."

This is a sum in fractions as actually performed by a student. $0.975 = \frac{975}{1000} = \frac{195}{200} = \frac{39}{40} = \frac{39}{\frac{40}{3}}$. The class is dismissed.

The WPI gratefully acknowledges the kindness of Mr. F. S. Webber, '86, for the package of twenty-one back numbers which he so kindly sent us. Our file is now complete, and will shortly be bound.

The Harvard Law School seems to be having a bad effect on Tatman. He writes: "My room-mate is very much interested in ball, he is third base on the college nine and first bass in the choir."

"If the tower clock was three minutes slow, and you depended on the clock, you would be in chapel three minutes ahead of time, don't you see? You had better look up your arithmetic a little, Culley. Wouldn't that be so, Mr. Coombs?"
It is a very refreshing sight to see what interest Prof. Conant takes in watching the men play foot-ball. And all the more so since, except Prof. Kinnicutt, few of the other instructors manifest the least desire to help on athletics by being present at the games.

Is it not about time that a little more heat be turned into Prof. White's recitation rooms Saturday mornings? Civils can stand a good deal, but when the wrought iron beams in the bridge diagrams begin to shrink from the cold, the Civils pass—out.

It looks rather suspicious, to say the least, when one of our most popular men, accompanied by half a dozen friends, finds it necessary to have recourse to a drug store in the wee sma' hours of the Monday following Hallow'e'en.

Doctor, what's this five dollars for, that I am paying? This is most as good as Parker's breakage bill for chemical laboratory .for the half-year before we entered school, with seventeen ft. of glass tubing charged, more tube than a regular chemist would use in his whole course.

A few days ago, Sir Isaac again distinguished himself by taking a chuck-drill holder to the window of the tool-room and asking for one that turned the other way. The custodian of the tool-room collection, turned the holder the other end to and passed it back, while Isaac went away satisfied that he had got what he wanted.

The Seniors were recently favored with a recital of that charming little anecdote concerning the old lady whose egg "would sink or swim, she didn't know which." It was a sudden reminder of life in the Middle year but they bravely withstood the shock, and are now expecting a revival of that other little classic—"The old lady whose son was very much alike."

"Who are those ruffians anyhow?" was the question which a respectable old Irishman was heard to ask as the Techs went pushing through the crowd on Main Street to view the election returns. Ruffians or gentlemen, it was evidently the prevailing opinion that many of us acted decidedly young on that occasion.

A well known Doctor of one of the foremost colleges of Massachusetts, on hearing the particulars of troubles at an institution not a thousand miles from this, said that while he was connected with that college, the students had published grinds against him about a dozen times; ten of those times he deserved them and profited thereby, and the other two he had sense enough to keep still.

The Academy boys who attended the Brown Varsity game enjoyed themselves immensely. "Rub-a-dub-dub the Techs in the tub," and other adaptations from their own "Mother Goose" were rendered with juvenile hilarity and applauded by themselves as soon as rendered.

Undying words of massive intellects:—
"Just one word more."
"The question arises."
"That's a good question."
"Et cetera."
"Generally."

It was a cruel mockery to put that sign "Deposit Ashes" upon our patent walk.

**Kindly Withdrawn.**
"Dump Ashes Here" is the sign so queer Which the serious student hinders As, on learning bent, with look intent He climbs the festive cinders.

"Tis unseemly as queer," said the Techs without fear, "It insults all contributing students." And Authority thought 'twas with danger fraught To maintain it against all prudence.

The announcement that Prof. Cutler is to have especial charge of the library hereafter, will be met by most of the students with approval. The need of some one competent to guide, in their search for knowledge those among us who are good enough not to devote their time to foot-ball or the lighter enjoyments of society, was plainly evident. Not only is the need supplied, but well supplied. Prof. Cutler brings to this duty a mind well fitted both by nature and training, to assist those making history and literature a line of research; he also brings what is more, an enthusiasm for the work and a willingness to help: three qualifications which ought to inspire the student to, at least, some effort to receive benefit from them.

A short time since, during a Physics lecture, the Seniors were surprised by a visit from a number of the young ladies of a neighboring institution. Soon after their
arrival, the Prof. asked to have the shutters closed to show experiments with the fancy electrical apparatus. There was a general rush for the windows and then a crash which caused the visitors to jump from their seats in wild alarm. One of the massive screens had fallen to the floor with clamor and commotion. Restrain yourselves, young gentlemen! We wish to leave some Laboratory for the next generation, however inspiring it may be to sit in the gloaming with the daughters of the sister institution.

**COLLEGE NOTES.**

A department of journalism is to be established in the University of Pennsylvania.

A heated campaign for Sophomore president has been going on at Cornell. One of the candidates has issued a circular letter to the members of his class presenting arguments in favor of his election.—*Ex.*

According to the Wellesley *Prelude* a condition in that college is generally regarded as an overwhelming disgrace.

According to late agreement, the annual Yale-Harvard foot-ball game will be held at Hampden Park, Springfield, in the years from 1891 to 1894 inclusive.

The seating capacity for the Yale-Harvard game at Springfield will be twenty thousand.

An Annapolis cadet who was recently found guilty of hazing has been sentenced to thirty days confinement.

The Yale seniors have decided to wear cap and gown to church, and on all other important occasions beside commencement.

By its new system, Memorial Hall at Harvard, provides food for 800 students.

Over 200 different courses of study are presented to the Harvard students this year.

The front of the new gymnasium at Yale is to be adorned with life-sized panels of athletes.

The University of Pennsylvania has 1,850 students. The University of Michigan, 2,500.

There is to be a new athletic field at Princeton, with a gate in memory of the heroic Frederick Brokaw.

The *Palo Alto* of Stanford University claims to be "the only college paper ever started simultaneously with the opening of a great University."

"Mortar-boards" have been recently donned by the students of Rochester University. The seniors are distinguished by tassels of black. Those of the juniors are purple, while the sophomores and freshmen have crimson and green respectively.

At the University of Wisconsin, students attaining a rank of 85 per cent. are exempt from examinations.

The class orators for '92, at both Harvard and Yale, are Phillips Andover men. The foot-ball captains for '92, at both Harvard and Yale, are Phillips Exeter men.

Foot-ball has been prohibited at the University of Heidelberg, Germany.

Bull, Yale's famous ex-full-back has been coaching the 'Varsity eleven.

The annual foot-ball game between Yale and Princeton will be played on Thanksgiving Day, at the field of the Manhattan Athletic Club, New York City.

The net profit gained by the Yale Glee and Banjo clubs last season, was $4,916.51.

Trinity College has received a gift of $6,000 to improve the campus.

Last year the University of Michigan gave an elective course in photography which proved so successful that it is required in one department this year.

Harvard's defeat of Wesleyan 124 to 0, was the largest score ever made by the Harvard 'Varsity.

Out of 365 colleges in the United States, 271 are denominational.

This year's Freshman class at the Sheffield Scientific School at Yale numbers 198, an increase of 61 over the class of last year. The increase in number of the Academic Freshmen is only six.

It is said that the Princeton Seniors are to wear cap and gown through the year.

The trustees of Columbia College are discussing the removal of that institution from New York City.

Four new buildings have been added to Princeton College during the summer.

Princeton has six new men on her Faculty.
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