

The

OPPI.



Vol. VII.

Monday, Feb. 15, 1892.

No. 9.

CONTENTS.

	PAGE		PAGE
Editorials	171	Athletic Meetings	183
Topics Athletic	173	Tech Elect.	184
Fire! Fire! Fire!	175	The Senior Class	184
Undergraduate Department in Elec- trical Engineering	175	Y. M. C. A.	184
Tech to the Fore	176	The Historical Society	185
'93 Rounds the Stake-Boat	177	Directory	185
A Few Suggestions to the Students in Free Hand Drawing	180	Notes from Electrical Laboratories ..	186
How the Exams. Affected Him	181	Advertisements?	187
Electrical Notes	181	The Class of '95	187
The Yale-Harvard Debate	182	The Tech Generously Dealt With ...	188
Salisbury Sanitary Engineering Club. 183		Convention of the New England In- tercollegiate Athletic Association	189
		Technicalities	189

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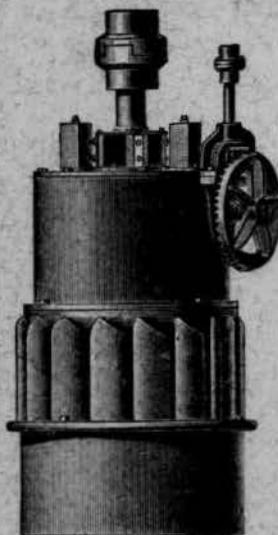
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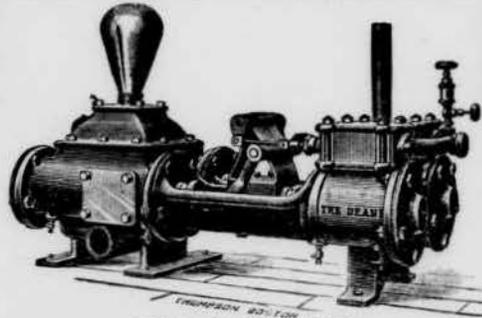
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THE W P I

Vol. VII.

WORCESTER, FEBRUARY 15, 1892.

No. 9.

THE W P I.

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

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WE would like to call thoughtful attention to the article in another column on the provisions which are provided against fire, or rather the temptations which are continually offered to the fire fiend, and the conditions which are a serious menace to our safety.

It would seem as though immediate steps must be taken to right this difficulty. It surely must be an oversight, for certainly we can conceive of no body of thinking men allowing such a condition to long exist. It is our sincere desire that the attention of Institute authorities shall not be called to this matter in vain. We hope to record in our next issue some measures of safety. In the name of common interest we would ask that these conditions be speedily changed.

There are times when mere words do not meet the need of the hour, and can but faintly voice the sympathy we feel. It is with this thought that we record the departure of one, who, though not a member of the Institute, was respected and beloved for her many lovely characteristics by all of the student body who had made her acquaintance.

In the death of Mrs. Dr. Kinnicutt, we feel the loss of one whose kindly greeting and real, genuine interest in school affairs, had won the deep regard of many a student.

The sincere regard and sympathy of the entire Institute, Faculty and students alike, is extended to Dr. Kinnicutt in the immeasurable loss which he sustains. We all shall miss the kindly face and friendly words of Mrs. Kinnicutt.

In our last number, we published under the title "A Suggestion," some of the thoughts which have found frequent expression of late among the students of the Institute who are especially interested in electricity. Prof. Kimball has been continually extending the work of his department since its establishment in the Salisbury Laboratories and the progress made has been well worthy of praise. But with the increased efficiency of the general course in electricity and with the successful establishment of the post-graduate course, has come a constantly growing demand for a briefer

course which should give the degree in Electrical Engineering and which should meet a want that the post-graduate work in no way met. When we printed the article of last month we had no idea that the fulfilling of this want was so near fruition. We are glad to record the addition of the desired course, which is outlined on another page.

The three and a half years' course in Electrical Engineering cannot fail to prove very attractive to men preparing for this field of work. The W. P. I. is in an increasing degree peculiarly fitted to make this course valuable. With well equipped laboratories, constant additions to our electrical plant, plenty of room for its growth and extension, skilled instruction and the facilities so kindly tendered by the Worcester Electric Light Company, there is no reason why this course should not become one of the most attractive, as well as most successful, which the Institute has ever offered.

The song contest as announced in the November issue closed with the first of February. But few entries have been made in the contest, and in the opinion of the Board it would be unwise to attempt any decision of a question of this character upon the basis of contributions which have been received. Accordingly, by vote of the Board of Editors, the contest will be thrown open again until the first of April, and this time competition shall not be limited to students and alumni, but shall be open to all who may be willing to interest themselves in this effort to secure a suitable college song. We will not repeat the terms of the offer, they are the same as

outlined in the earlier number above referred to, except that the time is extended and the field for competitors shall be unlimited under the new plan. If any reader of this article desires more information than is contained in the November number, or has not seen that issue, we shall be glad to furnish the information desired.

The Board reserves the right to accept or reject any and all contributions received.

It is with a feeling akin to despair that we begin this. Much has recently been said upon the matter; steps have been taken by one or two men and the whole has amounted to nothing. The subject is a Tech Orchestra. At one time we did have a Banjo and Guitar Club, and '90 established the unique record of supporting a Class Orchestra for upwards of a year. Now, with far more men here, we have not even the shadow of such an organization. This is too bad, since it only requires but a few words with a '90 man to become convinced of the great enjoyment capable of being extracted from a club like that. If it were a possible thing for an orchestra of eight pieces to be formed from a class of forty-two, how much more possible should it be to unearth eight or ten musical sharps from a school of two hundred? '90's orchestra was a great success from the start and was doubly welcome since societies at that time were an unknown quantity in the Institute. The orchestra, reinforced by two '89 men, gave selections at the Old Folks' Concerts at Piedmont Church, at Plymouth, played for the grand march

of the Carnival of Trades, and one winter evening went down to Whitinsville on a 'bus ride. Evidently the jovial Techs fascinated the country maidens, or the reverse, because much difficulty was experienced in making connections for home.

It may be easily imagined how much real sport could be found these winter evenings, yes, and in the spring, to say nothing of boat rides on the Lake in warmer weather, if someone would only go ahead and find out how many can play and would play. Here is a good chance for that someone to make a reputation for himself and lay the basis for the filling of a "long-felt want."

Through a lack of foresight our issue of last month was not sufficient to meet the demands made upon our circulation, and we were obliged to hold back our exchanges, which we greatly regretted. The mistake was not discovered until too late to be remediable. We trust our college friends will bear with us for they doubtless will appreciate the necessity which compelled us to this course, and we will gladly assume all responsibility for the error, since the business department was badly handicapped by the grip, and the mistake was one which it was not natural to foresee.

TOPICS ATHLETIC.

The frequent occurrence of athletic meetings, the contests at the Rink, the meeting of the convention at Boston, these are some of the many indications that the annual field-day of the Inter-collegiate Athletic Association is not far distant—that is for a college which intends to do anything then—a long

way off for one that does not. To which of these two classes does the Institute belong?

Had Fish last May cleared the bar on his second trial instead of his fourth, Worcester would have taken third place instead of fifth. Fish is still here. Gallagher took second against forty-seven competitors in Boston last month in the mile run, and the fleet and invincible Dadmun comes back here again this spring. We should take at least third place on field-day. To ensure this result, we must first of all begin in time. If we begin now, that essential is disposed of. We have no gymnasium, but there is one not distant a fifteen minutes' walk, and which is better equipped than those of most New England colleges. It was said in an athletic meeting that we ought to put our team there to practice. Nothing could be more true. The best and most promising athletes in college should be there at least three months before the sports take place. Let the Association pay the expenses; the cost would not exceed three dollars a man at the most. We undoubtedly could get special rates. Then a trainer should be hired, or else the gym. captain be paid something to give special care to our team. As fast as it becomes evident that men are unfit for positions upon it, let them be dropped out. The last month or six weeks preceding the sports, the team should be boarded together at a training-table, properly conducted, the extra cost being paid by the Association.

If such thorough steps as these were taken—and few colleges the size of ours do not take them—we might expect to come away from the meet with honor.

The Institute is large enough and we have athletes enough. What we lack is good, systematic hard work, confidence, enthusiasm, and most of all business. This latter is decidedly a minus quantity here. The only reason why we have never had a trained team in the field is because there has been no one to take the matter in charge. Everybody's business has been nobody's. The matter will be the same this year unless someone takes the initiative,—and that someone is the Athletic Directors, for they represent more than any other body, the Institute; they are chosen with more care as a general thing; and from their name, if nothing else, should *direct athletics*. Money first of all needs to be raised. On the basis of the foot-ball subscriptions *paid* in last fall and calling the school larger by sixty men, there would be a nucleus of \$200. If the proposed entertainment be a success, at least half as much more will be netted. A little arithmetic and anyone can see that there are funds enough to train our team as it should be. Then let it be done. The men should be in the gymnasium now, at least four nights in a week. It is time we outgrew running our athletic teams on the principle of every man for himself, and the devil take the hindmost.

* * * *

The attendance at the athletic meetings is another thing to be corrected. When sixty votes only out of the entire 250 are cast, it looks as if interest were at a very low ebb. Every student should be a member of the Athletic Association, although this now is not necessary for voting—another instance of slackness.

If he takes no interest himself in athletics, he ought to have enough pride in the school to see that capable men are put in the offices of the Athletic Association. It is a duty just as much as it is the duty of a citizen to vote. The men who stay away from the meetings usually have the most fault to find. Some idea of the eternal fitness of things should be used in elections. All athletes are not good business men. There is no more sense in putting an athlete on the Board of Directors or in an office of the Association *solely* because he is an athlete than there is in entering a one-legged business man in the hundred yards. A man should hold office, not because he alone was nominated, not because he looks well in a picture, not because his class outnumbered the others at the meeting by which he was elected, but because he is the best and most capable man in that position; and defeated candidates should not feel it to be a personal matter or that they are unpopular, only that in the opinion of the majority the successful one is better qualified to hold *that particular office*.

Again, there has been a tendency, especially on the part of the Juniors, to try and fill the offices with members of their own class. Any candid man will admit that, except in special cases, the most important offices should be filled from the highest class, and by the men who have had the most experience in Institute affairs, and hence are best qualified to administer them. If elections are to be conducted on class lines, as long as each entering class outnumbers the one preceding it, we shall have inability and inexperience at the helm,

and the Institute will always be represented, or more properly, misrepresented, by those who know the least about it.

And so let us bestir ourselves this spring, throw the same enthusiasm into athletics we did into foot-ball, put aside our personal and class feelings, and all strive for the common good. Then will the steel-gray and crimson float where it should.

FIRE! FIRE! FIRE!

A visitor to the Institute who is at all observing must be struck with the utter lack of protection against fire. Here we are a long way from the centre of the city, none of our buildings absolutely fire-proof, with thousands of dollars worth of costly apparatus which would be ruined, by mere wetting; with a large shop, half of which is engaged in wood-work, and the precautions against fire are what?

Boynton Hall has two hand fire-extinguishers and both of them save for a few pieces of broken glass, are—*empty*. There is also a *shelf* for another. The building, old and dry, with no fire walls or doors is so arranged that a blaze once started would shoot from cellar to roof in a few moments.

The upper part of the Shop is crowded with inflammable material, timber in all stages of working, valuable patterns, paints, oils, etc. Open gas jets with not even guard wires or globes, furnish light. Piles of loose shavings and chips constantly litter the floor. Suppose a stray chip from a planer flies through the blaze of a gas jet and falls in one of these piles, or a careless workman drops an ignited match. In half a minute a fire of no mean proportions would be burning, and in that half minute what could be done? Almost nothing. There is not an extinguisher, a grenade, fire-pail, line of hose or even a pail of water at hand. The nearest water is down stairs and at one end of the ell, and then only a slow stream that would take nearly two minutes to fill a pail if there were a pail to fill. This would depend upon whether Dave was outside washing the

buggy or not. If he were, the tin dipper and perhaps George's sprinkling-pot, if anyone thought to hunt it up, would constitute the available fire-apparatus. By this time however the destruction of property upstairs would have got merrily under way. An hundred students might make a useful fire brigade, were they properly equipped, but could not work to decided advantage with a horse-pail, ancient sprinkling-pot and a two-inch tin dipper.

The shop barns are probably indestructible.

The Laboratories have brick fire-walls throughout, but no fire-doors. On the top floor is a single fire-extinguisher. A stand-pipe runs from top to bottom of the building, but the hose upon each floor *was long since disconnected and used for other purposes*.

Not a building has a fire-escape, nor is there a single ladder of any length upon the grounds. The water pressure here is as low as anywhere in the city, and the hydrants far apart. The Fire Department would be greatly delayed in climbing up the steep hill and in laying the long lines of hose which would be necessary. Nothing could be done until steamers were upon the ground, and there is but one of these nearer than Pleasant or Front Street. A fire-alarm box is directly across the road but *no key is upon it*. There is one in the Shop but this could only be got in shop hours.

There must be some cause for such negligence. Either the Institute property is insured for about four times its value or else some one is taking a tremendous chance. Is there any reason for risking the suspension of the school work of two hundred and fifty students, or of inviting the destruction of so much valuable machinery and apparatus?

UNDERGRADUATE DEPARTMENT IN ELECTRICAL ENGINEERING.

During several months past the Faculty and Trustees have had under consideration various plans for offering additional facilities for electrical study and laboratory work to undergraduates. The post-graduate course in Electrical Engineering has been valuable and attractive, but many could not command the means to take it, and, besides, when plenty of openings to earn money offered,

the temptation to go at once into practical business has been too strong to be resisted. As the result of their deliberations the Trustees, at their meeting, Jan. 30, adopted the following scheme:

At the beginning of senior year such members of the department of Mechanical Engineering as shall elect to do so may become candidates for the degree of B. S. in Electrical Engineering.

Their instruction during senior year shall be the same as is now prescribed for the mechanical engineers, excepting that no shop practice shall be required of them, but an equal amount of time (340 hours) shall be given by them to electrical study and laboratory work.

Students in the department of Electrical Engineering shall be allowed but not required to make up by extra work the whole or any part of the time given to shop practice by the mechanical engineers in senior years.

Students in the department of Electrical Engineering shall present a thesis upon an electrical subject, and graduate as Bachelors of Science in Electrical Engineering. This plan will go into effect with the next senior class, but in order to provide the necessary extra instruction in season, the middlers will be asked to make their choice before the end of the preceding year.

Heretofore, for three years, the special electrical work done at the Institute has been given to graduates of the department of Mechanical Engineering in an extra year, and this post-graduate work will, for the present, be continued for the benefit of those who desire a more thorough course than it is possible for undergraduates to take. But this new scheme will open to very many who are not able to remain for the additional year an opportunity which many students have desired, in order to become somewhat acquainted with the practical management of electric lighting plants, motors, etc.

Many will doubtless make up a part or even the whole of the extra shop work, since for electrical work the more machine shop practice the better.

The equipment of the Salisbury laboratories, both for electrical and mechanical testing work, is very complete, and the varied plans now projected for its use must be greatly attractive to those students desiring the best training.

This new course will meet a want that has long been felt and often expressed both by the undergraduates and the alumni of the Institute, and a great deal may be expected from its work even in the near future.

TECH TO THE FORE.

Our Boys do the W. H. S. Beanpot Team in Style.

The Worcester Athletic Club gave a very successful athletic exhibition at the Rink on the evening of Feb. 6. As we had entered a team for a race against the W. H. S., and as also quite a number of the boys had entered in other events a large delegation of Techs turned out, most of them occupying seats in the north gallery.

The first event was a 40 yards dash. Dadmun was entered for this, but failed to win first in his heat, thus losing his chance in the semi-finals. The eight heats were all good exhibitions of sprinting, as were also the semi-finals.

The one-mile race between W. A. C. and B. A. A. was the most exciting event of the evening, and was won by Worcester, after a struggle which lasted from the pistol shot until "Dad" crossed the line, a winner by only a few yards.

The mile-walk, and the running high jump were moderately interesting, the walk going to Thayer of Harvard, the jump to Richardson of Harvard, both having long leads over the scratch men.

A two-mile team race between the Worcester and Wachusett Boat Clubs was easily won by the latter. Then followed the finals in the 40, won by Shead, B. A. A. The quarter mile went to Coombs, B. A. A., a notable runner. J. M. Gallagher, '94, was entered, but did not run.

Then came the event for which the W. P. I. boys were waiting. The "P. I." from the north was answered by the High School yell from the west. Our team consisted of C. G. Harris, '94, E. L. Smith, '92, E. L. Whipple, '94, and J. M. Gallagher, '94, who ran in the order named: H. M. Southgate, '92, was substitute. Against Harris ran L. Thurston; against Smith, W. Cunningham; against Whipple, E. Buck, and against Gallagher, W. S. Davis. The race wasn't in doubt after the first half mile. Harris came in an easy winner by 6 yards, and then E. L. Smith, an easy and graceful runner, took

the red flag and when he passed to 'Gene Whipple the latter was half a lap ahead of Cunningham, who passed to E. Buck. From this the race was a procession, Whipple passing the flag to Gallagher with a lead of a lap. "Midge" had a plucky little opponent though, in W. S. Davis, and if the latter had had any show he might have made Gallagher hustle for first. As it was, Gallagher had a regular snap, walking nearly a lap, and finally letting Davis come in about 3 yards behind him, and the race was ours. Time for the two miles 9 min. 13 $\frac{2}{5}$ sec.

"Dad" was entered in the half and mile runs, but did not come on to the floor in the latter. In the former he ran fairly well, but his heavy handicap and his work in the team race told on him so that he did not win a place. Southgate was entered in the half, and Gallagher ran in the mile, but did not win a place. The half went to Batchelder, B. A. A., and the mile to Poland, Wor. Boat Club.

The Techs took great interest in the pole vault because J. A. Derby, '93, was entered. Among the contestants also was Kinsley, a brother of S. A. Kinsley, '91. The contest finally narrowed to Crane, scratch, Kinsley 6" and Derby 8"; Derby was out of it at 9' 8", Kinsley tied him by clearing 10' 4". Derby did not care to vault off the tie and took second prize, leaving Kinsley first. Derby took up the vault only last October, and his work is especially creditable and encouraging. His record was but 1 $\frac{3}{5}$ inches under the Intercollegiate of last year, and 2 inches ahead of that previous.

'93 ROUNDS THE STAKE-BOAT

And Successfully Holds Its Half-way Celebration.

Was it a success?

Well, we should think so.

Ask any man of the three score and more who were present if it was a success; they'll say "Yes," with a big Y.

We wanted lots of time to prepare for it, that everything should be O K; and so two months ago we elected three committees to look out for details. These committees were:—

On Menu: Comins (chairman), Larkin, Andrews.

On Supper: Denny (chairman), Mackay, Bingham.

On Entertainment: Heard (chairman), Marshall, Rawson.

And results showed that we chose wisely. There was not a drawback on any part of the programme that the committees could have helped; their work was perfect.

Some discussion took place in several class meetings about the advisability of going to Boston to hold our banquet, but a large majority showed themselves as opposed to this scheme, and with an excellent display of class feeling the minority submitted, one of the most active of the pro-Bostonians moving to vote unanimously to hold the supper in Worcester.

It was finally decided to hold the supper in Grange Hall, Jan. 21, at 8 P. M. During the three or four days immediately preceding this date, rumors were in circulation to the effect that some of the infant department had designs on whomsoever of us, eight or ten could catch alone. Accordingly, on the night fixed for the supper, every one went after somebody else, and generally in a group of four, at least three clubs could be found. However, everybody got there who intended to, one plucky member, just over the grippe, coming in a hack.

Precisely at 8 the "P I" rang out and then 60 of the present members of '93—Dodge and Hopkins being the only cutters—together with Tatman, Hammond, and Child, former members of the class, sat down to the table. The menu cards first occupied attention, and, after gazing at the face, which bore cuts of the coat of arms of the Institute as well as of the Pin in silver, with the inscription, "W. P. I., '93 Half Way Through Supper," in raised gilt, the whole on white enamel, we worked the combination knot and opened up an interesting view of a youth symbolizing '93 running the gauntlet of two files of Piute Indian braves, whose faces bore remarkable likeness to those of our august Faculty. The poor victim was already halfway up the line, having successfully coped with braves much resembling H. W. B., M. P. H., L. P. K., G. E. G., A. S. K., and U. W. C., while still waiting for him were the rest of the tribe, the chief with open arms at the extreme end. One brave, bearing a club labelled "Trig," has left the crowd, while another is dragging up a fresh victim. Gitche Manitou, that is to

say, the Trustee, watches the scene from the heavens, his form half hid in the clouds.

On the next two leaves follow the menu and a list of the members of the class, while on the back is the head of our faithful mascot, Wilhelm Geiss.

"Out of sight" was the unanimous verdict in respect to the menu. After three cheers for the committee, and after asking, "What does the German say?" we proceeded to a circumvention of the following menu:

Auster in der Halben Schale.	
—	
Suppe.	
Consomme.	
—	
Gesotten.	
Lachs mit Franzosischen Erbsen.	
—	
Braten.	
Truthahn Preiselbeeren-Gelee.	
Rollbraten mit Champignons.	
—	
Gennse.	
Kartoffel-Croquetten.	
Melonenkurbis. Selleri.	
Apfelwein.	
—	
Gespickte Wachteln.	Johannisbeeren-Gellee.
Huhner Salat.	Sealopierte Austern.
—	
Charlotte Russe.	Gefrorenes.
Sorbet.	Gefrorenen Pudding.
—	
Einfache und feine Kuchen.	
Brodenen.	
Kaffee.	
Pomeranzen.	Bananas.
Weintrauben. Rosinen.	
—	
Cigarren.	Rebboll, Caterer.

The annihilation of the banquet was enlivened by G. W.'s and cheers for past members, '93, and "one and only one for Dick." Mr. Dyer, on behalf of a committee on yells, presented this, which was given in a telling manner:

Hollabalee! Hooray! Hooray!
 Hollabalee! Hooray!
 Hollabalee! Hollabalee!
 Worcester Polytechnic, '93.

After everybody was satisfied, we had our pictures extracted by three camera fiends. We then proceeded to arrange our feet and cigars in a comfortable position to listen to the toasts. President Flinn turned Comins loose as toastmaster, and the latter, after adjusting his pompadour and loosening his girth, proceeded something as follows:

"My ideas got on one side of my head

last night, consequently my neck is stiff. In addition to this, I am handicapped by being introduced by a man who carries the initials "A. D. F."

"We have (m)et the supper and it is ours. Now we are ready for toasts. We are halfway through. To convince you of that, we have a man good at an argument. In fact, he was cut out for a girl, but he argued the question and decided to be a boy. He played in the rush-line and like everything strong, made a good scenter. I now turn on the gas by introducing to you Mr. (carbon monoxide) C. O. Rogers, who will respond to "Half Way Through."

Mr. Rogers said: "Some of us have been martyrs to-night for the amusement of the rest—no martyr by whom." He then referred to interesting episodes in Prep life, after that, in the Junior year. The class was to be congratulated on keeping 61 out of 71 of its members. He then wittily but earnestly referred to the next half, exhorting us all to good behavior and recommending us to Eppie's good graces. He closed with a call for cheers for "Half Way Through," which were given.

The toastmaster, in introducing the next speaker, said: "'93 wants the earth and she has it." We have representatives from Japan, Hubbardston, England, Spencer, Canada, and even as far as Holden. We have a man with us from that land where they shake hands with their feet, whose initials are prophetic, 'G. K,' Goat Keeper. I bring before you Mr. Kuwada, who will give us the history of our goat."

In a manner which would lose its point by trying to copy it, Mr. Kuwada gave a witty account of the adventures of a Deacon, a Lawyer, an Editor, and a Surgeon, in the search of a "golden fleece," among the muckers, McBiddies and the loikes. He detailed his meeting with Mrs. Rooney (mother of Annie), and also how he nearly proposed (?) to a young girl. Finally, a goat was obtained. He then spoke of the good fortune our mascot had brought us, and after that how he was unfortunately killed in a surgical operation "for pains as to his bones." His head was then exhibited and called forth cheers.

Comins then remarked that he had forgotten to say that he had the goat's first name in his pocket, and pulled out a billy;

also that the goat furnished the *bunting* for decoration. He then thought the class would like to hear from our president, and so, although he wasn't on the programme, he would call up Mr. A. D. Flinn.

Mr. Flinn spoke briefly of his gratitude to the class for the appreciation which they had shown him, and eulogized them in a fitting manner. "We are the Columbian Exposition Class," he said, "and we will do great things." He sat down amidst cheers.

L. P. Strong was then introduced to speak on Athletics as one who had taken an active part in athletics (as indeed any one must who goes into them). To show how deeply this man was interested, he had been up until 12 o'clock three nights *running*. He was then spoken of as "rejoicing like a Strong man to run a race."

Mr. Strong got up right in the teeth of this "most unkindest cut of all," and pointed out in an "E. P. S. form" what we have done, are doing, are going to do. We must get our men into the gymnasium. Many are there now, but some of the best are not. Our athletic future is bright. He then called for three cheers for our banner won in the cross-country runs.

Mr. Howe was called upon to read a poem, "not a bill, but an ode." In response, Mr. Howe read a poem which wittily hit the various members of the class in alphabetical order. The name, even the sex, of the author was not divulged, but we wish to remark that it gave *himself* away, by the "grinds" *she* got off on certain members.

The next victim was alluded to as "the boldest man in the class, one whose hair sings as the blushes mount." Mr. Heard was introduced to respond to "The Ladies."

Mr. Heard made a decided hit. After saying that everyone has some object of interest, and naming the objects of various members, he went on, in a demure sort of a way, to give his impressions of the fair sex. He disclaimed all knowledge concerning them; one who answered "Yes" to M—y's question would have been a better one to respond to this toast. Cheers for "The Ladies" and for Mr. Heard were given.

Letters of regret were received from H. B. Fletcher, and F. W. Howe. C. T. Tatman was then introduced by the Tormentor as a "forget-me-knot, a *passé* of the class." He responded to "Past Members."

Mr. Tatman, after remarking that the response to his toast was like the talk of veterans of a war who get together to talk of arms and legs left on the battle-field—past members—spoke in turns of each one who has left us, Bullard, Child, G. G. Clark, Cruickshanks, S. A. Farwell, Gutmann, Hammond, F. W. Howe, Jackson, Kelley, Osterman, "Oonani" Pixley, "Tat" himself, and finally "Tenny" Eaton, whom '93 is proud to claim as a past member. Three cheers for "Tenny" Eaton followed, after which three were given for the other past members. It was voted to send menu cards to Fletcher, Howe, and Prof. Eaton.

The toastmaster then called on W. H. Parker to recite on "The Faculty."

Mr. Parker, with the air and appearance of a theologian, proceeded to characterize the Faculty, as he beheld them at a dinner. In response to toasts from Mr. Higgins, each "prof." gave a brief but true account of himself. Mr. Parker's toast was one of the best of the evening.

The entertainment consisted of a minstrel show. Phillips was interlocutor; Marshall and Dyer, end-men; Cleveland, Higgins, Clark, and Andrews, tenors; and Metcalf and Derby, basses. Marshall came in late, having been "chidnapped." Then the fun began. The first song was "We are jolly students at the Tech." After that the Faculty and office girls were kindly remembered, and incidents in the careers of various members were related. Dyer then sang "Polytech Fair," and, in response to an encore, sang "Tidings of Comfort and Joy." More grinds followed; then Marshall sang "Fly, little children, fly," and gave as an encore, "Hear that bell." After that we had some more jokes, and then Dyer sang "Ta ra ra boom de ray." Marshall then related incidents in the lives of the Profs., and a correct repetition of a lesson in Dutch Syntax was presented. The exercises closed with "Auld Lang Syne" by the crowd.

A class meeting with the election of officers, was then held, after which the party broke up. No, we weren't "all broken up," either. We had had one of the best times in our lives, and we knew it. It was the unanimous verdict that the committees left nothing undone. We were successfully "Half Way Through!"

[NOTE.—As the members of the "sthaaf"

do not carry life insurance policies, it is only fair to state that this account was written by a "disinterested" special reporter.]

A FEW SUGGESTIONS TO THE STUDENTS IN FREE HAND DRAWING.

You cannot afford to lose the valuable practice which Free Hand Drawing furnishes to you. No matter how many of your ancestors have prospered in their business without a practical knowledge of this art, the business of the world to-day, in all its departments, demands all the skill of eye and hand which you can command, and especially the skill which comes through direct and persevering work with the pencil in hand.

This art of drawing is a language which is more closely related to the things about you than you are apt to admit. What would be thought of a work on Physics, or Chemistry, or Geology, or on any science whatever, without illustrations, which appeal most conclusively to the eye.

Spoken language is one of the worst means of expressing form, while drawing is incomparably the best. Then why should you not be very ambitious in mastering this language, that is, in training your eye and hand in Free Hand Drawing?

The fundamental principles of Perspective are extremely simple. Let me give you a few directions, divested as much as possible from the technical terms so often used in explaining the theory of this science. These directions will assist those who are determined to secure all the advantages within reach in this department of their work.

1st. You must train your eye to see correctly the forms of objects before you. Then train your hand by drawing these forms—by drawing them accurately and quickly. You will find the eye must decide in advance at what angle the line is, and where it must be drawn. These observations, accurately made, will form the "data" by which you may work out your outline, and thus you will find the perspective will grow out of the art of drawing.

2nd. Keep, at first, an imaginary plane between your eye and the object to be drawn, and work as if tracing the form required upon that plane. If you will persist in this

practice, you will find no difficulty in giving to objects their proper perspective appearance. Remember, the eye must be kept stationary, as it were, while tracing the form of an object, either upon this imaginary plane, or drawing it upon your paper, which is really the plane lying before you on your table. You will soon be able to sketch an object or scene correctly without even thinking of this plane. Practice will soon settle the amount of ability you have secured in this direction.

3rd. After the correct *form* of an object is drawn, the next step is to give its effect in *light and shade*. The same ready eye to see this effect upon the model is needed. This disposition of light and shade is not as intricate as is often imagined. You can make your eye see, and your mind understand this effect very easily. What you want now, is to know how to represent this effect upon paper.

Notice how the light falls upon the object, that is, in what direction it comes. Let it come from one direction alone as much as possible. Notice how the cast shadow is dependent upon that light. Then observe how the shade upon the object is distributed over its surface. Now study the effect of the whole object or group of objects before you. Notice thoroughly where the effect is strongest, that is, where the light falls most directly, and where the shade is darkest.

All of this, so far, is work for the eye and observation. Make the eye appreciate the whole mass, and settle definitely that such and such effects are seen. Now proceed to put these effects with pencil upon your outline.

Here is where your practice of hand, your power of manipulation, will be found to be very deficient. But start off. Do as well as you can in producing these effects. There is no royal road to the end you seek except through labor. There is no treadmill manner of work about it. Some will get the effect desired in one way and some in another. As you practise you will find out the easier and better way of handling your pencil, and of producing the better finish. Artistic grace and beauty will be imparted to your work, which result will be a gratifying thing, and give far more than a transient reward to the faithful student.

GEORGE E. GLADWIN.

HOW THE EXAMS. AFFECTED HIM.

Letter written by a would-be Prep to his best girl on the evening of Wednesday, Jan. 20, 1892.

DEAR SALLIE:—

If quite well you're feeling,
And you never can stand a big strain;
As my muse is over me stealing
And settling herself in my brain,

I'll sing the exams. I've been trying,
And how I flunked in them flat,
And why in such sorrow and sighing
I am kicking myself, and all that.

I wended my way to the chapel,
And climbed up two flights of stairs,
The examinations to grapple
Of a Tech, take the graces and airs.

They asked questions that could not be parried,
Did I prefer mutton or pork?
Father's name before he was married.
Did I ever eat soup with a fork?

They asked for my name, occupation,
My age, and the date of my birth,
Was I Turk or of some other nation?
In round numbers, how much was I worth?

They gave me some sheets of blank paper,
And passed me an English exam.
All my thoughts passed away like thin vapor
And I'm really afraid I said ———.

They made me write two compositions,
Describe six books I'd almost forgot,
And unless I wanted conditions
I must get it right down to a dot.

Then they gave us some time for our dinners,
We had but an hour or so,
Before they examined us sinners
In the French that we did n't know.

So I hied me away to the city,
And dined on a chicken pie.
Ah, the fate of that hen roused my pity.
She was far too old to die.

Then I sneaked back again quickly,
In fear that no hope could quench.
I really began to feel sickly
When I thought of the coming French.

Hurrah! but this French is easy.

Wait a minute, what can that word mean!
That, Professor, is what I call cheeky.
You might at least give us words we have
seen.

At last I am nearly half through it.
What? Only five minutes more did he say!
If they won't give us half time to do it,
How can we get through anyway?

When you are thoroughly rattled,
And have only five minutes more,
'Tis harder to write French correctly
Than one would have thought before.

And so you perceive, *ma chère amie*,
My chances are pretty thin,
And I fear I'll form one of the army
Of those who did not get in.

Will you, at one-thirty to-morrow,
Please pray for me, times nine or ten?
For (I tell you in trembling and sorrow)
I'll be taking the orals then.

Well, Sallie, my muse groweth tired.
I fear she'll soon give me the sack,
So I'll stop ere we both get mired.
Pray consider me

Yours truly,

JACK.

ELECTRICAL NOTES.

Edited by Tech Elect.

An interesting electrical machine can be seen at the Brooklyn Navy Yard. It is a drill which by electric power drives a $\frac{3}{4}$ " hole through a $\frac{3}{4}$ " plate in less than one minute.

In a paper read before a body of Scotch engineers a few weeks ago, it was stated that about fifty mines in the United Kingdom were already equipped with electric mining apparatus. Mines which were before unprofitable, owing to their depth, are more easily worked. The power has great advantages over either steam, compressed air, or hydraulic power, as the wires are much easier to lay and repair than long pipelines.

St. Louis is making an effort to have the T. & H. Co. locate in or near that city. As a result of a merchants' exchange meeting recently Mr. James Campbell telegraphed as follows to President Coffin: "C. A. Coffin, No. 20 Atlantic St., Boston, Mass. Would

a donation of several acres of ground be any inducement for your company to locate here?" The reply was as follows: "Thanks for proposition, will wire." It is stated that St. Louis will have the works if possible.

The electrical building at the World's Fair is progressing and the roof trusses are in place. The lighting at the fair will cost \$1,500,000 as 6,766 are lamps 2,000 c. p. each, with 131,000 incandescent lamps of 16 c. p. each are to be run. The lighting plant alone will require 2200 h. p.

The Providence and Worcester R. R. was the first railroad on this continent to be equipped with the Automatic Block System throughout. The system is now in good working order and is the most complete safeguard known. The managers of the road are completely satisfied with the operation of the 137 blocks on the road.

In London, the Board of Trade has prohibited the use of permanent overhead conductors.

In New York the authorities stand in the way of the introduction of the modern Police Signal and the service is looking for new devices which may be used in that city. It is rather difficult to meet the requirements and it may take a second Newton to find the means to accomplish it.

THE YALE-HARVARD DEBATE.

This debate has started much discussion among those who would see college education broadened. Indeed, the interest taken in the debate will do much to revive a little of the debating society in our colleges. The question was: "Resolved, that the young man voting for the first time in '92 should cast his vote for the Democratic party." Three students from Yale, two from the College and one from the Law School, took the affirmative, and three of the Harvard men took the negative; each speaker occupied fifteen minutes. Sanders Theatre, Cambridge, was crowded to the doors with a very enthusiastic audience. No decision was given and no vote on the merits of the question was taken, but the general opinion was that the Harvard men were away ahead of their competitors.

The *New York Tribune* says: "The Yale men have been compelled to acknowledge

that, although they came and saw, yet they did not conquer. It was acknowledged on all sides, even Governor Russell himself being heard to make the remark to a friend, that the Harvard speakers bore off the palm. The Harvard men presented the best speakers and the soundest arguments, while, as far as forensic ability is concerned, they had a great advantage over the Yales. In ease, force, and vivacity the latter were clearly distanced. The Harvard men spoke with great readiness and with an ease born of experience."

But it must be remembered that the Harvard boys were upon their own ground, which in itself constituted a great advantage.

By many it is presumed that the East has set an example for the West to profit by, but such is not the case.

In the West, joint debates are common occurrences. They are between colleges and even between States. The most intense rivalry is manifested and the prizes are awarded only after the most diligent practice. The reputation is far from being local, but in several instances have contributed much to the later success of the conquerors. But while debates like these are not of frequent occurrence in the East, yet the more prominent colleges have regular courses in debate.

The course in Amherst covers three years. The student prepares himself to debate a variety of subjects. The Faculty, at times, form the jury. In this way a man of comparative little ability can, in a short time, win considerable success. He is taught the desirability of "thinking upon his feet;" of quickly overcoming his adversary's apparent advantage; of refuting arguments, and from time to time of injecting a little sarcasm into his remarks. The result of this is obvious. The Amherst man has an advantage over those less fortunate in this respect than he. In not a few instances does he improve this advantage.

Brown has her Debating Union. A debate is now on the *tapis* between the members of the Democratic and Republican Clubs on the question: "Resolved, that the welfare of the community demands that a citizen vote the Democratic ticket." A challenge from the Irving Literary Society, of Providence, is expected, and, if it comes, Brown intends to put forward her best endeavors to win the victory.

It has been alleged that the Yale men were defeated merely because their college affords them little or no training in the work they had to do.

One of the New Haven papers goes so far as to say that Pres. Dwight could do nothing that would contribute more to the substantial success of these young men, going out into a real world where knowledge is power, than to establish required courses in extemporaneous speaking, to extend over at least two years. Evarts, Depew, and Yale men of their successful stamp as public speakers had an advantage over the present generation. The college did something for them.

In the Tech, the students get a little of this work in Senior English. But in this they work at a disadvantage. As a general thing the other studies press upon them so hard as to preclude all possibility of giving to the debates the time requisite for their preparation. It is really too bad that something could not be done to remedy matters. It seems that so long as the students live from one to two miles from the Institute not much can be done, unless space in the Political Science Course should be reserved for regular debate.

No power is more to be desired than the ability to express oneself in the thousand and one emergencies of civil life. We should all like to state what we mean in clear-cut and forcible language. Certainly collegians, into whom is imbued the idea that they are to lead men, cannot fail to be sadly disappointed when they find how deficient they are in not being able to "mean what you say and then to say it."

SALISBURY SANITARY ENGINEERING CLUB.

At the regular meeting of January 19th, the semi-annual election of officers occurred and resulted as follows: President, C. Baker, Jr., '93; secretary and treasurer, O. D. Rice, '94. Executive committee: The president, A. D. Flinn, '93, and C. W. D. Dyer, '93.

Jan. 26th, the club listened to a paper by E. L. Munding, '92, on "Street cleaning and methods of paving," and an animated discussion was participated in. The meeting of Feb. 2nd was devoted to a discussion of the results of chemical precipi-

tation. A general paper read by A. D. Flinn, '93, who conducted the discussion, was followed by brief papers on the following localities: East Orange, N. J., Andrews, '93; Bradford (Eng.), O. D. Rice, '94; Ealing (London), H. C. Boyden, '94; Dortmund, (Ger.) G. W. Booth, '91; Salford (Eng.), C. W. Eastman, '94. A comparison of the results of the different works was then arrived at. Mr. Eddy spoke of the Worcester works.

At the meeting of Feb. 9th a description of the work of the Metropolitan Sewerage Commission of Massachusetts was given by F. B. Knight, '92.

A series of interesting meetings has been arranged for the immediate future, and much enthusiasm is manifested in the work of the club by the new members from '94. The club greatly regrets that a time for meeting cannot be arranged which shall accommodate all the classes, but the present time of meeting seems to be the best that can be arranged under the existing conditions.

ATHLETIC MEETINGS.

The first athletic meeting was held in chapel Jan. 27, President Morse calling it to order. Mr. E. H. Fish, '92, was unanimously elected president for the next half year. There were contests for all the other officers with the following elections resulting: vice-president, C. W. D. Dyer, '93; secretary, C. G. Harris, '94; treasurer, L. W. Rawson, '93; member of executive committee of N. E. I. A. A., A. C. Comins, '93; delegate to convention of N. E. I. A. A., H. M. Southgate, '92. An attempt was made to elect a manager for the Institute nine, but with three candidates no result was attained before the meeting adjourned. In the contest for treasurer, President Morse made an extremely doubtful ruling to the effect that one man had the right to turn the votes polled for him over to another and have them counted. It probably made no difference in the outcome, but that fact did not strengthen the decision.

The second meeting was held Feb. 2, attended mostly by Middlers. Mr. J. H. Wallace, '92, was unanimously elected Baseball Manager. Several men were nominated for the position of manager of the Intercollegiate team, but all declined in favor of F. A. Morse, '92, who was unanimously elected.

The following Athletic Directors were approved by the Association: Bartlett, '92; Denny, '93; Whipple, '94. The Directors were authorized to approve the director from the Apprentice Class. Heard, '93, then suggested to the Association that an entertainment, similar to that at the '93 Half Way, be given for the benefit of the athletic treasury, the "talent" to be picked from the entire school. His statement that after the Half Way "some ideas occurred to a few of us" brought down the house. On motion of Southgate, '92, a committee consisting of one member from each class was chosen from the house, to consider the feasibility of the matter and report to the Association. The committee is: Marshall, '93, Bracken, '92, Burdick, '94, Denny, '95. The meeting then adjourned.

TECH ELECT.

At the regular meeting of the Club, Tuesday evening, Feb. 2, the following officers were elected for the half-year: President, N. M. Paull, '93; Vice-President, E. W. Vaill, Jr., '93; Secretary and Treasurer, T. S. Perkins, '93; Member of Executive Committee from '93, Nathan Rice. The following topics are to be taken up next and discussed thoroughly and systematically: The Arc Lamp, Practical Measuring Instruments, and The Dynamo. Dr. Kimball is giving a series of ten-minute talks upon the latter subject.

THE SENIOR CLASS.

The meeting of the Seniors was held Jan. 25, in the chapel, for the purpose of electing officers for the ensuing term. After balloting six times, F. W. Collier was elected president; L. C. Smith was chosen vice-president, and G. H. Day, secretary. No treasurer was elected at this meeting since E. L. Smith was elected last September for one year. Directly after the Single-tax debate, Feb. 1st, the nominating committee presented its report to the class. The following committees were submitted:—

Class Supper: J. H. Wallace, F. B. Knight, R. H. Thompson. Souvenir: W. F. Burleigh, H. W. Bracken, F. E. Hammond. Reception: C. A. Tucker, F. A. Morse, C. A. Needham. Class Day: H. M. Southgate, J. F. Bartlett, G. F. Freed.

Graduation: G. H. Miller, L. C. Smith, E. L. Smith.

These committees were by vote adopted by the class. In addition, Messrs. J. H. Wallace and M. J. Lyden were elected for the Souvenir Committee, and H. E. Culley and G. D. Ball for the Reception Committee. A vote was then taken, upon the matter of studying either Civil Government or English Literature for the present term. The class showed itself in favor of the former by an overwhelming vote.

At a meeting held Feb. 8th the report of the committee on Class Photographs was submitted. Both a majority and a minority report were received. After some discussion and an informal ballot, a formal ballot resulted in the selection of Mr. Schervée as Class Photographer. A committee, consisting of Messrs. Tucker, Converse, and Miller, was elected to confer with Mr. Schervée in regard to further arrangements.

Y. M. C. A.

As announced in our last number a public meeting of the Y. M. C. A. was held Sunday afternoon, Jan. 24th at 3.00 P. M. Room 3 was quite well filled with students. Vice-President George W. Bishop presided. After singing, prayer and the reading of Galatians vi., Mr. Dolan of Brown University was introduced. He spoke of the power and efficiency of prayer in the Y. M. C. A. work and emphasized the importance of the influence of an earnest Christian life upon those who come in contact with it.

Mr. Lewis K. Morse of the Harvard Law School spoke at some length, showing in both a religious and scientific way that every one has some particular place to fill and that to fill this place in the very best manner and to perform thoroughly the duties of one's especial sphere constitutes a great part of the Christian man's life.

After the meeting nearly all present embraced the opportunity of making the acquaintance of the delegates.

This visit of the delegation is one of a series that is being and has been carried on by the Y. M. C. A. All the New England Colleges and leading Academies are visited about twice each year by men from the larger associations and many helpful methods and suggestions thus exchanged.

In May, Williams and Brown are to send delegates to Worcester.

At a business meeting held on Wednesday, Feb. 3rd, and later adjourned to Friday, it was unanimously voted to amend the constitution so that the dues should be one dollar per year instead of 50c. as formerly.

Under the new rule, membership tickets will be issued for one year, dating from either the 1st of September or the 1st of February, and the annual fee of one dollar will be payable at one time instead of in semi-annual payments as under the old regime. Members of the Senior class whose tickets run out at the end of the first half can have half-year tickets issued to them at the same rate.

This movement was the result of careful consideration, and it seems to all only fair that the association should ask for larger dues from the members since the privileges received are worth as much as those of the Worcester association. The association also feels the need of more money to carry on the work in a broader and better manner. The membership is at present over one hundred and twenty, a large number of whom have joined merely as a money-saving scheme. The association will always receive members even of this nature, but hereafter they will only save a dollar instead of one dollar and a half.

Membership Tickets, printed on a card in the Institute colors, are out and will be distributed as fast as practicable. These will alone be used at the Y. M. C. A. in this city, while the old vacation tickets can be used during the vacations at the homes of the members.

The President of the association would be very glad to give any members of the Apprentice Class, or any of the classes, letters of introduction to any of the various pastors in the city or prominent laymen. All the churches are open to Techs, and would be glad to have them come and make them welcome.

THE HISTORICAL SOCIETY.

At the regular meeting of the society, held Friday evening, Jan. 22nd, officers for the ensuing half-year were elected as follows: President, C. H. Andrews, '93; Vice-President, C. W. Eastman, '94; Secretary and Treasurer, A. D. Butterfield, '93.

A unanimous vote of thanks was tendered to Prof. Cutler for his effective assistance and untiring effort in behalf of the society, and Mr. Coombs was unanimously elected to fill the vacancy caused by Prof. Cutler's withdrawal from the Executive Committee. Mr. Hale, '94, was also elected to complete the number of the Executive Committee.

After the business meeting, a very interesting paper was read by President Andrews on "Prince Arthur," and Professor Cutler read an essay, critical and descriptive of the whole play of King John. Act V. of King John was read and so the reading of the play completed.

The meeting of Friday evening, Feb. 5, was well attended and of much interest. An able paper was read by Dr. Fuller upon "The Nature of the Magna Charta." The readings consisted of selections from "King John," rendered by Mr. Coombs and several other members of the club, and the very intelligent questions presented by the members called forth much interesting discussion. Before adjourning, it was decided to take up "Richard II." as the next play to be read by the society.

DIRECTORY.

The following is a list of the various organizations of the students and their officers for the next half-year. Unless otherwise stated the officers hold office until fall.

SENIOR CLASS ('92).

President, F. W. Collier; Vice-President, L. C. Smith; Secretary, G. H. Day; Treasurer, E. L. Smith.

Committees—Class Supper, J. H. Wallace, F. B. Knight, R. H. Thompson; Reception, C. A. Tucker, F. A. Morse, C. A. Needham, A. E. Culley, G. D. Ball; Class Day, H. M. Southgate, J. F. Bartlett, G. F. Freed; Graduation, G. H. Miller, L. C. Smith, E. L. Smith; Souvenirs, W. F. Burleigh, H. W. Bracken, F. E. Hammond, J. H. Wallace, M. J. Lyden.

MIDDLE CLASS ('93).

President, Nathan Heard; Vice, W. N. Stark; Secretary, E. W. Vaill, Jr.; Treasurer, W. H. Larkin, Jr.; Historian (for graduation), C. O. Rogers.

JUNIOR CLASS ('94).

President, H. L. Cobb; Vice, C. H. Dwinell; Secretary, F. E. Norcross; Treasurer, W. J. Baldwin.

APPRENTICE CLASS ('95).

President, C. A. Harrington; Vice, F. W. Parks; Secretary, H. J. Fuller; Treasurer, A. H. Warren.

ATHLETIC ASSOCIATION.

Every student is eligible and may become a member by the payment of one dollar to the Treasurer.

President, E. H. Fish, '92; Vice, C. W. D. Dyer, '93; Secretary, C. G. Harris, '94; Treasurer, L. W. Rawson, '93; Keeper, L. P. Strong, '93. Directors, elected by the several classes: J. F. Bartlett and H. M. Southgate, '92; L. P. Strong, '93; J. M. Gallagher, '94; ———, '95, holding office until September, 1892, and W. J. Denny, '93, E. B. Whipple, '94, and H. S. Davis, '95, until January, 1893.

FOOT-BALL ASSOCIATION.

Every student is a member.

President, H. M. Southgate, '92; Vice, W. N. Stark, '93; Secretary, R. C. Cleveland, '93; Manager, H. W. Phillips, '93; Captain, C. M. Allen, '94. Manager and Captain hold office until close of season next fall.

TENNIS ASSOCIATION.

Any student may become a member by the payment of \$1.00 admission fee.

President, L. C. Smith, '92; Vice, H. Sinclair, '93; Secretary and Treasurer, G. M. Eaton, '94; Executive Committee, L. C. Smith, '92; J. A. Derby, '93, and A. C. Higgins, '93.

CAMERA CLUB.

President, E. W. Vaill, Jr., '93; Vice, H. N. Smith, '94; Secretary, H. Sinclair, '93; Keeper, E. H. Keith, '94; Executive Committee, A. H. Smith, '92; E. E. Kent, '93; H. W. Bracken, '92; H. Sinclair, '93.

All students interested in photography eligible to membership. Meets every other Saturday evening.

SOCIALISTS OF '92.

All present or past members of '92 are eligible to membership.

President, J. H. Wallace; Vice, G. H. Miller; Secretary and Treasurer, G. H. Day; Critic, M. J. Lyden; Executive Committee, J. H. Wallace, C. A. Needham, R. H. Thompson, E. L. Howard, H. M. Southgate.

TECH ELECT

For the study of Electricity. Any student

may become a member by signing the constitution. Meets every Tuesday evening at 7:30 in Salisbury Laboratories.

President, N. M. Paull, '93; Vice, E. W. Vaill, Jr., '93; Secretary and Treasurer, T. S. Perkins, '93; Executive Committee, ———, '92; N. Rice, '93; ———, '94.

SALISBURY SANITARY ENGINEERING CLUB.

No admission fee. Open to students in the Civil, Chemistry and Political Science courses. All are invited to its meetings, which occur at 4:45 in room 24 of Laboratories every Tuesday afternoon.

President, C. Baker, '93; Secretary and Treasurer, O. D. Rice, '94; Executive Committee, the President, A. D. Flinn and C. W. D. Dyer, '93.

HISTORICAL CLUB.

All students eligible to membership. Meets every other Friday evening at 7:30 in library, Boynton Hall.

President, C. H. Andrews, '93; Vice, C. W. Eastman, '94; Secretary and Treasurer, A. D. Butterfield, '93; Executive Committee, the three officers, N. B. Hale, '94, and Mr. Z. A. Coombs.

Y. M. C. A.

All students eligible to associate, and all members of Evangelical Churches to active membership. Meets alternate Tuesday and Wednesday noons in room 3, Boynton Hall, beginning Wednesday, Feb 17th Officers elected annually in May.

President, Nathan Heard, '93; Vice, G. W. Bishop, '94; Recording Secretary, T. E. Brayton, '92; Corresponding Secretary, C. E. Goodrich, '93; Treasurer, L. C. Smith, '92.

NOTES FROM ELECTRICAL LABORATORIES.

The dynamo upon which Messrs. Bradford and Rice have been engaged off and on since last October is now practically complete and runs with a smoothness and perfection that is decidedly gratifying, and reflects much credit on the makers.

The machine was designed by Messrs. Bradford and Rice entirely, and, so far as known, is the only machine in existence which has four different currents, being thus really four machines in one.

It is intended for use in the Laboratory, and is run by a gas-engine. It gives one hundred and twenty volts at a velocity of

seventeen hundred revolutions per minute, and has a capacity of running fifty sixteen-candle-power incandescent lamps.

The machine is compound wound, the number of ampère turns in compounding being variable, so that it can be compounded for different speeds and voltages.

It gives a continuous current and is arranged to give an alternating current, or two alternating currents, differing in phase by ninety degrees, or three alternating currents, differing in phase by one hundred and twenty degrees.

The dynamo was made entirely at the Laboratory, except the magnets, which were bored outside.

The Seniors have begun work, at present spending five hours in the laboratory and attending two lectures per week in electrical engineering. They will commence work in the Electric Light Station this week.

Considerable work has been done with the storage batteries upon cells with different forms.

The Middlers also are practicing in the Electrical Laboratory.

ADVERTISEMENTS?

Candidates nominated to any office in the Institute, on reasonable terms. No charge unless successful. Write for terms to Howe, '93, enclosing picture and lock of hair, and stating qualifications, in case there are any.

Wanted, three or four unused marks in good condition. Address, Everybody.

Sport, '95, would like a second-hand overcoat with kangaroo bag attachment.

Information wanted as to who painted the shop barn. Address the Faculty.

Strayed into my head sometime between Thursday night and Friday morning, Jan. 21-22, an idea. Owner may obtain by paying costs. Heard, '93.

Stamping done in a satisfactory manner. Address, N-ls-n, '92.

Found. Picked up on the hill, an equation. Can be obtained of Prof. S. by proving property.

TO SUSPENDED PREPS.

If not called for in 3 days, return to Worcester Polytechnic Institute.

THE CLASS OF '95.

The large audiences at chapel, the re-institution of the George Washington War dance, and the presence of clean jumpers and overalls cannot have failed to impress on us all the fact that a new class has begun the race for the degree of B. S.

They enter the Institute under more favorable circumstances than any previous class, are the first class to follow the revised course of study, and are already at work upon the Junior mathematics.

This is the largest Apprentice Class in the history of the Tech, but the men do not come from a distance to so large a degree as in recent classes. In all there are sixty-three embryo mechanics, twenty-eight of whom are from the Heart of the Commonwealth. Of the remaining thirty-five, twenty-seven are from Massachusetts and eight from other States; the points of the compass are represented by men from Bangor, Maine; St. John, N. B.; Jacksonville, Florida; and Westfield, Mass.

Time seems to have laid his hand most heavily on Mr. Weatherwax and to have spared Mr. Hentz the most, while in size they range all the way from six feet four to quite small.

Many interesting statistics could be given as to the number of moustaches, size of hats, shoes, etc., but we will refrain and endeavor to trace out the athletic material which is of interest to all members of the Institute.

The first question to be answered is, of course, Who can play foot-ball? The Worcester High School seems to have sent its entire team up, and some excellent material exists in Davis, who plays half-back; F. W. Smith, a star tackler; Warren, quarter; Houghton, Harrington, and Coburn. The Academy has donated one of its best players in Ware. Another good half-back is Stone, from St. John, who played last season on the St. John's eleven. A promising centre has arrived in Brigham, who reaches up into the air six feet and two inches, and tips the scales at two hundred and ten pounds. There are also a number of men who, in size and muscle, were destined to play foot-ball, and, with a little practice, would form a team that would make the older classes hustle to retain their supremacy.

The class also contains several excellent base-ball players.

In general athletics there are a number of men with very good records. As usual, there is one Prep who can go a hundred yards in ten and a half seconds. Leland is said to have a record of nine and a half feet on the pole vault; another man, of five feet four inches on the running high jump. Granger and Denny are two promising sprinters, and his classmates say that Murphy, the man from Florida, may be depended on for walking.

Taking the class as a whole, it contains a large per cent. of athletic men, and will no doubt be able to fully sustain and, we hope, to elevate the standard of the Tech in athletics.

It is early yet to judge what the class will do in the secondary matter of study, but the fact that seven are from the Academy and twenty-three from the High School in this city indicates some intellect in the class.

We see in '95 promise of great things and we feel that they will be an honor to the Institute and worthy to be known by the name of Techs, so we say Vive '95.

Below we give a list of the members of the class with age and previous condition of servitude:—

Name.	Age.	Residence.	School.
Abbott, H. L.	19	Lake View, Wor.	Gram. and High.
Abbott, J. C.	19	Westford.	M. I. T.
*Albertson, C. W.	18	Worcester.	High School.
Barber, H. R.	19	Worcester.	High School.
Barton, C. W.	17	No Oxford.	Wor. High Sch.
Benton, C. R.	19	Vergennes, Vt.	Middlebury Col.
Brigham, F. H.	18	Barre.	High School.
Brooks, C. C.	18	Fitchburg.	High School.
Brown, E. W.	18	Worcester.	High School.
Bryant, F. J.	21	Worcester.	High School.
*Barton, N. G.	19	Worcester.	High School.
Cardwell, H. W.	22	Norwich, Ct.	Nor. Free Acad.
Chambers, H. J.	19	Brookfield.	High School.
Clapp, M. H.	17	Athol.	Athol Schools.
Clement, A. W.	19	Worcester.	Worcester Acad.
Coburn, J. J.	18	Worcester.	Wor. Acad. & H.
Copeland, E. A.	18	Worcester.	High School.
Davis, H. S.	19	Worcester.	High School.
Denny, G. A.	18	Leicester.	Leicester Acad.
Dove, F. B.	20	Franklin.	High School.
Earle, R.	18	Worcester.	High School.
Favor, H. S.	18	Gardner.	Gram. and High.
Fay, A. E.	16	Brookfield.	High School.
*Field, H. E.	19	Worcester.	High School.
Fletcher, R. S.	20	Worcester.	High School.
Ford, H. T.	20	Bridgeport, Ct.	High School.
Fuller, H. J.	18	Worcester.	Wor. Acad. & H.
Gilbert, F. E.	17	Worcester.	High School.
Gile, W. W.	17	Worcester.	High School.
Granger, A. O.	18	Westfield.	High School.
Greene, C. M.	18	Worcester.	High School.
Hapgood, W. E.	18	Worcester.	High School.
Harrington, C. A.	18	Worcester.	High School.
Hentz, L. A.	17	Worcester.	High School.
Hitchcock, F. M.	18	Westfield.	High School.
Howe, A. W.	20	Clinton.	High School.
Howe, L. S.	17	Fitchburg.	High School.
Houghton, F. D.	19	Worcester.	High School.
Kelton, E. F.	17	East Hubbardston.	
King, A. D.	21	Westboro.	Monson Acad. and West. High.
Leland, H. W.	19	West Gardner.	Gardner High S.
Martin, F. M.	18	Worcester.	Worcester Acad.
Maynard, D.	18	Berlin.	Clinton High Sch.

McFadden, F.	21	W. Pawlet, Vt	Graville High.
Merrick, J. L.	21	Holyoke.	High School.
Muir, K. N.	21	Adams.	High School.
Murphy, J. P.	19	Jacksonville, Fla.	St. Mary's College and Private.
*Nutt, A. C.	18	Worcester.	High School.
O'Connor, T. F.	18	Worcester.	High School.
Parks, F. W.	17	Fitchburg.	High School.
Phinney, F. F.	21	Stoughton, Mass.	High, Mil. Acad., and M. I. T.
Poore, G. W.	17	Worcester.	High School.
Sellow, M. E.	19	E. Longmeadow.	Springfield High.
Smith, F. W.	17	Worcester.	High School.
Smith, H. E.	22	Framingham.	High School.
Stone, F. L.	18	St. John, N. B.	Davenport Sch.
Sumner, R. W.	18	Worcester.	High School.
Thayer, J. W.	19	Worcester.	High School.
*Tilden, J. M.	18	Tatnuck.	Wor. High Sch.
Van Ostrand, H. T.	19	Millbury.	Worcester Acad.
Walls, A. W.	19	Worcester.	High School.
Walsh, J.	19	No. Brookfield.	
Ware, A. L.	18	Worcester.	Worcester Acad.
Ware, C. P.	19	Bangor, Me.	Worcester Acad.
Warren, A. H.	18	Worcester.	High School.
Warren, A. G.	19	Gardner.	Gardner High.
Warren, V. W.	17	Springfield.	High School.
Weatherwax.	23	So. Cambridge.	
Wellington, F. E.	18	Worcester.	High School.
*Wellington, W. A.	17	Oxford.	Ox. & Wor. H. S.

* To enter in September.

THE TECH GENEROUSLY DEALT WITH.

Mr. Starrett, of Athol, Remembers It.

Some years since the authorities at the W. M. S. sent letters to various makers of standard wood and iron workers' tools, suggesting that, as a means of advertising, few things could be better than a presentation of samples of their tools to the shop, where they would be seen and appreciated by a class of young men likely some time either to purchase themselves or to have influence in purchase by others. Many manufacturers responded at the time, particularly makers of woodworking tools.

Among those addressed was L. S. Starrett, of Athol, Mass. He has now taken it upon himself to respond with the most complete collection of tools of precision ever collected as the product of one inventor or manufacturer. The set is duplicated almost throughout. The idea is to have one set arranged carefully for exhibition and inspection, and to put the other into the hands of the students for actual use. This idea is similar to one in vogue in L'Ecole Polytechnique in France.

The collection comprises Starrett's combination squares, bevel protractors, inclinometers, ordinary and patent double squares, levels, depth gauges, caliper squares, micrometers, screw-pitch gauges, scratch gauges, key-seat rules, a fine assortment of steel rules and straight edges, centre gauges, calipers and dividers of various sizes, some calipers having a patent joint for use in

inside chambered work, or iron flangers, a combination straight edge and protractor dividers for draughtsmen, a pipe attachment for monkey wrenches, surface gauges and extension drum trammels, the whole aggregating in value over \$500.

In his accompanying letter Mr. Starrett says: "These tools, or many of them, show points of originality and merit in advance of any heretofore made, and are the result of careful thought on the part of the originator and manufacturer. * * * I take pleasure in making, through you (Mr. Higgins), the presentation to the Trustees. I feel assured that the tools will often suggest valuable hints to the young mechanic."

In behalf of the students of the Mechanical Course, who will be inestimably benefited by his gift, the W P I extends its sincerest thanks to Mr. Starrett, than whom probably no man in the world can show so complete and excellent a set of tools as the product of his own brain.

Three elevators are being built for Iver Johnson, Fitchburg, but late of Worcester. One has been shipped to Saylesville, R. I., for the Creffield Mills, and drilling is in progress for one at the Odd Fellows' Hall, Lowell. F. H. Morgan is having one put into his new house on Institute road. Two twin valves are being built for the Morgan Construction Company.

Six drawing stands are being built for the Board of Education, East Orange, N. J., and ten for the University of Tennessee, Knoxville. Orders are in for ten twist-drill grinders and special tools and gigs for this work are being pushed as rapidly as convenient.

Mr. Charles Hildreth has resigned his position on the Boston, Revere Beach and Lynn Railroad, and is assistant general to Mr. Badger. Another bench is being built in the Prep room.

INTERCOLLEGIATE CONVENTION.

The annual meeting of the New England Intercollegiate Athletic Association was held at the Quincy House, Boston, last Saturday morning. The Worcester delegates were H. M. Southgate, '92, A. C. Comins, '93, and H. L. Dadmun. Mr. Dadmun called the Association to order. The following officers were then elected: Pres., G. A. Raley, Am-

herst; Vice-Presidents, Rogerson, Williams; G. O. Hall, Trinity; Secretary, H. M. Southgate, Worcester; Treasurer, McKay, Trinity.

After the reports of the Secretary and Treasurer had been read it was moved and seconded that the annual Field-day be held at Springfield. Representatives from the Springfield Bicycle Club and Worcester Athletic Club were then admitted, and presented the claims of both Springfield and Worcester. The Springfield men offered to furnish tents for dressing; to pay not over \$400 towards prizes; to guarantee against all loss, and to give the Association 50% of the profits of the meet. The Worcester men offered the free use of the W. A. C. grounds; to take full charge of all arrangements; to guarantee against loss; to furnish \$100 towards prizes, and to give the Association two-thirds of the profits.

After a lunch the matter was discussed to considerable length resulting in a vote of 6 to 2 in favor of Springfield; Brown and Worcester only voting in the negative. Most of the colleges admitted that a meeting at Worcester would probably be more successful but believed the students would find it more convenient at Springfield.

A motion to award prizes by points, 5 to winner, 2 to second, 1 to third was defeated, as also was a motion to throw out the Tug-of-War. Considerable discussion over the bicycle contests was indulged in but without result.

A committee of three was appointed to propose changes in the Constitution and to report at another meeting of the Convention to be held the night of the sports at Springfield.

The meeting adjourned at 4 o'clock after a session of nearly five hours.

The Association is in a most prosperous condition, there being at present over four hundred dollars in the treasury. Some debate was had upon the question of dividing this among the several colleges of the Association, but without final action.

TECHNICALITIES.

"What does the German say?"

Syntax of *nevertheless*? Seven men at once: "Concessive."

It is whispered that '94 has a fondness for ice-cream.

"Who was Geo. W——n?" He was an incendiary who caused certain "fires."

W——d wants to know if *versification* is a new kind of adverb.

Instructor in Descript: "Why is that line dotted?"—Student: "Because it is out of sight."

"What I shall give in my lecture today is of great practical importance." Glad to hear it; some things we've learned are not.

"There is one galvanometer in the basement so sensitive that it jumps when the elevator goes up or down." Witty-cuss: "Doesn't jump very fast, does it?"

How is this for the German (according to William Shakespere Bucklin) of "Ach; wüsstest du, wie's Fischlein ist." "Ah, do you know what the fish line is?"

One of Middle C.'s bright men must have been brought up with a farmer who milked the pump, if we judge from the rendering of scientific "Dutch" "milk from the Pacific Ocean."

"After the locomotive comes the tramp." (Progress and Poverty, Page 11.) We do

not know whether or not this is the case in Henry George's city, but in Worcester he comes with the freight.

The library has received accession of new reviews and other periodicals and some valuable books. Amongst them is a complete set of the State Geological Reports of Pennsylvania, and late volumes of similar reports from Arkansas and Ohio.

We are authorized to say to those interested in the South End young ladies that a certain Middler did not attend a party in a dress suit and dance the skirt dance.

Society life at the Tech has begun to boom. Two stalwart, *out-of-town* Middlers made their *début* in New Worcester society last week—spike-tail coats, patent-leather shoes, crush hats, etc., etc.

Kid Prof.—Any questions?

Student.—Don't you think they crowd us too hard in this school?

K. P.—No, sir, I do not. The average college student has altogether too much leisure and contracts habits ruinous to any young man.

"Good question."

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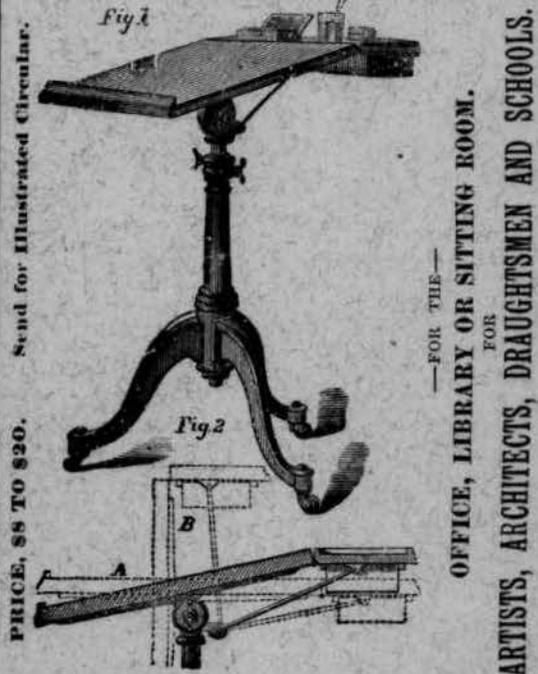
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