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**CONTENTS**

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Editorials</td>
<td>175</td>
</tr>
<tr>
<td>New Year's Resolutions</td>
<td>176</td>
</tr>
<tr>
<td>Drawing and Pattern Records</td>
<td>176</td>
</tr>
<tr>
<td>Laboratory Notes</td>
<td>178</td>
</tr>
<tr>
<td>The Proposed Rules</td>
<td>178</td>
</tr>
<tr>
<td>Shop Notes</td>
<td>178</td>
</tr>
<tr>
<td>The Teacher and the Pupil</td>
<td>197</td>
</tr>
<tr>
<td>Remarks of Criticus</td>
<td>190</td>
</tr>
<tr>
<td>The Best Field for a Campus</td>
<td>190</td>
</tr>
<tr>
<td>Personals</td>
<td>190</td>
</tr>
<tr>
<td>The W. A. C. Games</td>
<td>190</td>
</tr>
<tr>
<td>College Notes</td>
<td>190</td>
</tr>
<tr>
<td>A Presentation</td>
<td>190</td>
</tr>
<tr>
<td>Technicalities</td>
<td>190</td>
</tr>
<tr>
<td>The Oakdale Engine Test</td>
<td>190</td>
</tr>
</tbody>
</table>

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With the death of the old year and the birth of the new, we become most vividly conscious of the passage of time. Week follows week and month succeeds month without much thought being given to it. But with the change of years one is brought face to face with the fact that Tempus fugit. And so when it is realized that age is coming on, good resolutions and determination to turn over a new leaf—this is generally done by buying a new diary—with regard to the moral, physical and intellectual development present themselves easily to the mind.

To the Senior, the new year brings the realization that this is his year; that it is the year in which he puts the finish on his educational career, perhaps; that it is the year in which he casts off the safety line of guidance and instruction and strikes out for himself into the vast sea of life.

To the lower classes, the new year brings the knowledge that they are just so much nearer the coveted goal. For while the poor Freshman looks dimly ahead and speculates if it will ever be his year, the gay Junior revels in the expectation that in a few months he will be on top, he will be supreme, he will be a proud and haughty Senior.

"Thus we see how the world wags."

The inability to obtain a sufficient number of attendants at meetings of the Athletic Association is wholly without valid excuse on the part of the students. To simply read the notice, which is posted from twenty-four to forty-eight hours before the meeting, and then totally ignore the request to be present is not consistent with the general athletic spirit shown in other ways. To say that "there will be enough there without me" is to aid materially in postponing the meeting, while on the other hand it should be the duty of each one to remind those who evidently forget. This is especially the business of the athletic directors, and they should demand of the members of their classes that they present themselves at the place of meeting.

With what surprise and exclamations of joy was the news received that the Superintendent of the Shops wished to consult the students in the matter of changing the present shop rule of absences and tardinesses! It seemed too good to believe and it was not until the committees had met and talked over the change with the managers of the shop that it was thought that the students would have any influence in the matter. We see in this little incident the forerunner of the great changes which are to come.
We see in our mind's eye a deliberative body consisting of students and Faculty discussing all subjects concerning students and taking action upon them. We see the Faculty and the students no longer regarding each other as foes who should be attacked at every opportunity, but as friends with the same object in view, and endeavoring to attain it in the most agreeable manner to all concerned — a veritable case of the lion and the lamb.

Nor does it in fact seem too great a thing to ask. Rules are often made which are thought at first to be just, but obstacles which did not present themselves to the makers soon are discovered. Hence the rule is disliked, it fails in its purpose, methods of circumventing it are soon invented, and general dissatisfaction is produced. If, however, in the beginning, the students were allowed to give their opinion and state clearly and honestly the disadvantages which it would force upon them, matters would then, we are sure, be regarded in an entirely different light, and rules, more agreeable, more satisfactory to all concerned, would be the inevitable outcome. We are of the opinion, too, that the professor's life would be less of a burden to him (if it is a burden at present) if some kind of a student council were instituted. He would not continually have to listen to the complaints of dissatisfied ones, for all, knowing that everything was being done for their benefit alone, would endeavor to become reconciled to all seeming hardships. And thus would the standard of deportment, morality and scholarship be always increasing.

With regard to the changing of the Shop Rule it seems that it will be a hard task to find a satisfactory one. The number of absences which ensued under the old rule convinced the shop managers of its impracticability and hence comes the desire for another change. The plan to decrease the rank in shop-practice by the proportion of absences is one which would no doubt accomplish the desired result. It seems, however, that a slight margin of absences ought to be allowed before the reduction begins to take place, as absolutely perfect attendance at the shop is not to be expected of a student. For instance, 15 or 20 hours every half-year ought to be allowed a man before his rank begins to be reduced. This we think is a very small margin, but ought to be acceptable to both students and Superintendent.

### DRAWING AND PATTERN RECORDS.

**How Complete a Record Does It Pay to Keep? How Is It Best Done?**

BY WM. L. CHASE, '77.

I have had some acquaintance with several establishments which apparently started in business with the idea that it does not pay to keep any pattern record whatever. I believe, however, that in these cases to which I refer, the matter was not considered till the need became imperative. Some of them were run for years with no drawings. A pattern record under that circumstance is of course an antiquity that would have no practical interest to the undergraduate generation here. I suppose we are all agreed that nothing should be designed or constructed without drawings, or at least sketches, and that the drawings should record the materials used, dimensions, finish, fits, fastenings, etc. Probably we can agree further that all drawings should bear a date, a distinguishing number, the name or symbol of the work, the name or initials of the draftsman, and that they should be carefully preserved. And if the work is changed from the original design in the shop or elsewhere, that the changes should be fully noted on the drawings or, if necessary, new and corrected ones made. If patterns are made from the drawings, that pattern and drawing should be so marked that each may be identified by the other, and so that both tell how many pieces are required to a complete structure. Different lines of work, of course, require different treatment in the subject under consideration as in others. The items of record and the means of keeping them which I shall mention are some that have in some measure general application, and most of which, I believe, have paid in work I have happened to meet.

First. Keep a consecutive list of drawings made. This record naturally goes in a book,
the pages or spaces of which are numbered from the beginning upward, and from which numbers are assigned to the drawings. Enter in the book and on the drawing the date, the draftsman's name, the name or symbol of the work, the customer's name, or the shop order number, or both, and the drawer or file mark. If a drawing is lost, destroyed, traced or superseded, note the fact in the list, with proper references. When a drawing is completed enter on the list the time employed in making it. This list furnishes a chronological record of all the work done in the establishment or department. Indexed, it furnishes a list of contents of each drawer or file of drawings, lists of the drawings made for each structure or shop order, for successive orders of each customer, and by each draftsman employed, besides the lost, strayed, superseded, etc. Keep the index on cards.

Second. Keep complete lists of all bolts, studs, screws, etc., used with each part, and in convenient groups lists of all the parts of each structure and order. The lists of fastenings, whenever possible, should go on the drawings of the parts to which they belong. The lists of parts for a structure or an order, and the lists of fastenings when there is not room for them on the drawing of the parts, may go on sheets which are numbered, marked and indexed as though they were drawings.

Third. Mark patterns and drawings for inter-identification. On drawings which originate parts, mark the parts A, B, C, etc., preceded by the number of the drawing and, following the letter, put a figure denoting the number of pieces required to one complete structure. Thus, a piece of which two castings are required, shown on drawing numbered 3542 might appear 3542A2. This applies to all parts, forgings, woodwork, etc., as well as to parts for which patterns are required. Mark patterns to correspond by raised or sunken characters, so the mark can be plainly read on the casting as well as on the pattern. Given a drawing marked in this way the distinguishing mark of any piece originated thereon is at once ascertained. Given a pattern or casting the number of the drawing from which it originated is at once seen, and by reference to the consecutive list of drawings the drawer or file mark is disclosed by which the drawing may be found. In some lines of work, machine tools for instance, it might be desirable to add to this mark a symbol to define the structure or class to which the pattern belongs. This plan I borrowed and changed slightly from that in use by the Yale and Towne Co., which may be found described in some detail in a paper by Mr. Henry R. Towne, entitled "A Drawing Office System" in Vol. V., Transactions, American Society of Mechanical Engineers. In applying this plan in a shop which had already begun to number its patterns without referring to the originating drawings, and in which it seemed to be desirable to continue numbering patterns consecutively, I have left off the pattern the figure denoting the number of pieces to a structure, marking patterns and drawings to correspond with a distinguishing number taken from a consecutive list of patterns. The number of pieces required is added to the number on the drawing, written within a circle. Forgings, woodwork, etc., are marked on the drawing by the letter and sheet number, except such as are stamped to show on the finished product, which are given a number from the pattern list. Whether the pattern number contains the sheet number or not, I believe it pays.

Fourth. To keep a descriptive list of patterns which gives the structure, class, order number, customer, drawing number, number required to a structure, and drawer or file mark, besides a sufficiently detailed description of each pattern to distinguish it from other similar patterns. In the consecutive number list of which I spoke these items are arranged in this order: Pattern number, number required to a structure, file mark, class symbol and drawing number on the first line. The succeeding lines begin under the first figure of the number required, leaving the pattern number projecting into the margin, and contain in this order: R or L if right or left hand patterns are required, a brief descriptive name by which the pattern is entered in the lists of parts, the detailed description, the customer's name and the shop order number. Right-hand patterns are always given an even number, and the corresponding left hand the succeeding odd number. The dates on which patterns are numbered are interposed between the lines. The list is written out on a pad, and typewritten on cards for permanent record. If a number is to be canceled for any reason, or the description changed, a pen is drawn through the first line and the original card left in the file, a new one being inserted to give a change in the description or other use of the number.

Fifth. Keep the cost of drawings and patterns. Keep draftsmen's time on each drawing sheet, and pattern-makers' on pattern numbers or groups, as small as consistent with economical work at the bench. One way of keeping workmen's time, intended to discourage the practice of making an all day guess at it just before six o'clock, is to provide a block on which the workman enters the drawing or piece numbers on which he is engaged between certain hours, the
time of beginning being entered at the commencement of work on each half day or on the number, and the time of stopping being entered on completion of the number, on close of work for the half day, or on being changed to some other number. Each day's slips are taken up by the timekeeper and the items entered in the proper accounts. Written orders go to the pattern-maker with each pattern number or small group of numbers, which are kept on file by the pattern-maker while the work is in progress, and on which each day the timekeeper enters the time devoted to each number or group as noted on the time blocks. When the work is completed the written orders are taken up, material consumed noted, time charged to the proper accounts, and the orders filed numerically, by being folded in the centre and set with the folded edge up in drawers or boxes like index cards. On one side of the folded edge is written the pattern number and the words: New, repaired, changed, etc., as the case may be.

Sixth. Keep a "hospital list" of patterns on cards filed numerically by the pattern number. In it keep a record of patterns destroyed, superseded, etc.; of patterns which fail in service, noting why and how they fail, who makes complaint, and how they are strengthened if they fail from weakness or misuse, of patterns changed to make others, noting whether metal patterns are made before the change, and of patterns used to make others by patching, stopping off, etc.

While I have not attempted, in the foregoing, to do more than suggest discussion of the items from my point of view, even if I have omitted to give reasons for anything that is not apparent, I shall be glad to try and furnish them yet. I do not stop here because I think I have exhausted the things that can generally be profitably recorded. The arrangement of the drawing file and the indexing of it so that any subject or drawing may be found without waste of time is one of the most vital things in drafting-room economy; one that properly belongs in a consideration of drawing records, and one that influences largely the conduct of some of the items noted above. It is, however, a division of the subject large enough to stand by itself and I have for that reason omitted reference to it here. Perhaps there are some things that can be more profitably kept than these I have mentioned. And perhaps I have mentioned enough to make most of us feel tired at times, and which in most shops would occasion a lot of kicking over "red tape." Capably and faithfully administered, I believe all the records noted will pay for the keeping. Loosely administered, they will result in multiplied confusion, which is true of any attempt at systematizing and recording work, whether on drawings and patterns, or elsewhere.

**THE PROPOSED RULES.**

At the request of Supt. Higgins, the Mechanics the four classes met and appointed a committee of twelve, three from each class, to confer with him in regard to the changing of certain rules now applying to practice in the shops. The committee consisted of Burdick, Chambers and Killam '94; H. S. Davis, G. P. Davis and Clement, '95; Whittall, Gay and J.W. Chalfant, '96; Throop and Durand, '97. This committee on Saturday afternoon December 16th, met Supt. Higgins and Messrs. Cole, Walls and Mitchell, when the proposed rules were read. The rules were informally discussed but no definite action was taken as it was the desire of Mr. Higgins that the committee lay the rules before the classes before anything definite was done.

The rules as presented by Mr. Higgins at that time were as follows:—

1. Owing to the crowded condition of the shops, students are required to adhere closely to the practice hours designated in the hour plan.

2. A complete record of each student's practice, absences and tardinesses will be kept at the shop office.

3. The record will show the number of hours and minutes lost by any tardiness or absence and the student will be required to make up a quarter hour for every lost quarter hour or fraction thereof.

4. All lost practice time must be made up as promptly as possible and in all cases before the beginning of the following year.

5. No excuses for absences and tardiness are required, but any student may file a written statement concerning his lost time at the end of each term.

6. The method of marking shop practice is as follows:—

The head of each department keeps a daily account of the student's work and marks the same as to excellence in the scale of 100. At the end of the term (or at any other time) the practice mark is made by combining the reports from the various instructors in—

1. The Machine Shop.
2. The Forge Shop.
3. The Pattern Shop.
4. The Tool Department.
5. The Engine Room.
6. The Draughting Room.

7. The total amount of time lost for the
term for any cause will be reported in connection with the practice mark, and the practice mark will be reduced by such lost time. If a student is absent one tenth of the practice time in hours and minutes in any term his mark will be reduced to that extent, because he has received zero for all sessions of practice when he was absent.

(8.) Any student whose attendance is unsatisfactory may be required at any time to file a written statement concerning his delinquences. Should his statement be unsatisfactory the delinquent student will be reported to the Faculty for their action.

(9.) In case of necessary absence from any part of a practice session the student must report in advance to the instructor in charge the necessity of being out. Where this is impossible and tardiness or absence is unexpected a verbal explanation is expected afterward.

The committee presented these rules to the classes for their discussion. Several points in the proposed rules were objected to, especially regarding the mark of zero for all lost time. The student, however, would not be marked zero on his lost work if his excuses for absences were satisfactory.

A second meeting of the committee and representatives of the shop was then held, at which the committee read the changes and additions which the classes desired.

They were substantially as follows:

(7.) The total amount of time lost for the term for any cause shall be reported in connection with the practice mark, and in case of absence from shop work the practice mark shall be lowered as many per cent. as the time lost is above ten per cent. In no case shall absence under ten per cent. have any effect upon the practice mark.

(10.) A discount of eighteen hours on all summer practice will be granted to each student who during the preceding school year has been absent from practice only one hour or fraction thereof.

(11.) Students, whose names have been reported as members of the various athletic teams representing the Institute, shall be permitted to be absent from shop at such time as their captains may decide to be necessary, and such absences shall not be governed by the preceding rules. In all such cases shall the lost time be made up in the usual way.

Superintendent Higgins has taken the recommendations of the committee under consideration and will call another meeting of the committee before adopting the proposed rules or any modification of them.

THE TEACHER AND THE PUPIL.

The following is taken from the current number of the Tuftonian, and is of interest to students and teachers alike:

"We here present to our readers a few extracts from a paper by President Andrews of Brown University, entitled 'Some of the Next Steps Forward in Education.' This paper appeared some months ago in School and College:

"In definition of education, President Andrews says: 'Speaking succinctly, the constituents of a sound education are: First, character; second, culture; third, critical power, including accuracy and also sympathy with all the various ages, nationalities and moods of men; and fourth, to work hard under rule and pressure.'

"In defence of his position, that the first constituent of education is character, he says: 'All reflecting persons are coming to feel that, unless schooling makes students better morally, purer within, and sweeter, kinder, stronger in outward conduct, it is unworthy the name. Culture is the power to apprehend and relish the beautiful in conduct, in art and literature. To be accurate requires that of many things a finite mind should deliberately remain in ignorance. Too much information in detail confuses the mind, confronting it with a blurred, indefinite picture that can be of no service, instead of those clear, crisp, comprehensible outlines which are so valuable.'

"President Andrews' words on the relation, or rather attitude of teacher to pupil, are pregnant with vital truth. He says: 'Teacher and pupil need to come nearer to one another. They ought to approach each other closer in what I may call an ethical way as well as in an intellectual way. We need more than we have as yet done to get upon a level of friendship with our pupils, not standing off from them, not looking down upon them.'

"To the teacher, he says: 'Do not assume infallibility, but, if mistaken ever, admit it. Be an original thinker, an authority in your department, no mere expositor of books; yet, if you pretend never to err, your dullest scholar knows better, and puts it to your discredit. Never use sarcasm toward a pupil or make fun of him. You are a coward if you do take advantage of your position to enable you to hurt a fellow-being as good as yourself, and you will be despised as a coward deserves. But worse, when you treat a pupil so you can teach him little more. The inclination on that learner's part to question you is gone forever, and has given way to timidity or, perhaps, to sullen-
ness or obstinacy, which you can never overcome.' Cannot all students testify to the truth of that thought? Cannot all of us recall instances of teachers losing all influence over their pupils through their barbarous attempts at sarcasm toward them?

"Every student is as free to search into nature as Darwin was. The Creator has, perhaps, called him, too, to be a great interpreter of truth to mankind. At any rate, he is not merely to learn about the world for himself; he is to teach his fellows something. Make him aware of his high calling in this regard. Most educators fail here. They do not feel this truth even respecting themselves."

THE BEST FIELD FOR A CAMPUS.

No one in the Institute will deny the adaptability of the field at the foot of Boynton Hill for a school campus. Our need at present is a good place in which to perfect our somewhat crude material and bring our athletes into a more systematic training before our contests with other colleges.

The field mentioned, was offered to the Institute some time ago, but as it then held all the property allowed by its charter, it was not accepted. Its fitness for such use will be seen at once; the size and shape are exactly right, and how well a cinder track would look, with its finish on the Highland street side, where there is ample length for a 220-yard straight away.

Inside the track we can see, with comparatively little imaginative effort, the white lines of the gridiron, reminding us of hard rushes and well-earned goals.

A small gymnasium, of Gothic architecture, facing Boynton Street, would supply a long-felt need, and place our school on the same footing with other colleges.

All of our athletic contests could be held within sight of our Alma Mater, and who doubts that we would feel inspired to play our best with our school flag waving over us. The nearness of the field is another point in its favor, for how often have we heard complaint, on account of the distance of the Oval.

Financially it would be a decided advantage over our present system, the only expense that would be incurred would be keeping the field and track in order, while larger numbers would attend the games, more interest would thus be aroused and the city would feel proud of us and aid us in becoming the first in athletics, as we are in school work.

With such a campus what possibilities are ours? Within a few years we would have the intercollegiate held on our own grounds, a fine class of both field and track athletes, while both base-ball and foot-ball would receive a new impetus, and thus our school would grow both in brain and muscle.

Let us hope that before many years we shall hear the cheers, as the W. P. I. wins fresh laurels on the field at the foot of Boynton Hill.

THE W. A. C. GAMES.

The first of the winter tournaments of the Worcester Athletic Club is to be held on the thirteenth of the month. The Tech will be prominently represented in almost every event, the list of which includes the 40-yds. dash, half-mile, mile and three-mile runs, and pole vault. A team race between the W. P. I. and some other college is contemplated but as yet no one seems desirous of competing against our famous team. The M. I. T. was first asked but refused on the ground that they would be in the midst of examinations at that time. Brown was then invited and they also refused. Negotiations are now under way with Amherst but it is doubtful if a race will ensue.

A PRESENTATION.

On going up to his desk on Wednesday afternoon for the last German recitation before Christmas Instructor Viles was much surprised to find a splendid umbrella waiting for him, with this inscription on the handle: "With Christmas wishes from Division B, '96." The gift was an elegant and appropriate one and showed with what esteem Mr. Viles is regarded by the division. Mr. Viles made a suitable reply in acknowledgment of the tribute and emphasized the fact that he wished a more companionable feeling to exist between student and instructor. Mr. Viles' remarks in this line were well chosen and it has to be said to his credit that he puts them into practice in a way that advances him greatly in the estimation of the students and causes them to devote more attention to their studies than they otherwise would.

Mr. Viles has been universally popular with those under his instruction since he entered the Institute a year and a half ago. At the close of last term he was presented with a gold-headed cane by Division A, '95.

THE OAKDALE ENGINE TEST.

On Thursday and Friday, the 28th and 29th of December, the much talked of engine test occurred at the cotton mill at Oakdale. The pipe connections had been completed a day or two previous and apparently, all was ready for the operators. A delay occurred in the fore-
noon, caused by the unsatisfactory working of the pump. After the noon hour the test was begun and, except for about three minutes when a crank-pin got hot, was continued until six o'clock. At 7:40 on Friday the work was continued and lasted till six o'clock, excepting the noon hour.

Several Seniors went out and took part. A few contemplate writing a thesis on this subject. The test as a whole was quite satisfactory and furnished much experience for those members of '94 who participated.

NEW YEAR'S RESOLUTIONS.

Taking advantage of the faculty which is inherent in the W P I staff, by virtue of which the minds and thoughts of others are laid bare before us, we can now present to our readers a few of the New Year's resolutions of those around us. Although, for the most part, the makers of these resolutions did not expect them to become publicly known, nevertheless the W P I sincerely hopes that they will obtain the full gratification of their desires and retain not the slightest particle of odium in their minds against the medium which has made them public. Here they are—

E. A. B. I'll not ask the Dr. to furnish me anything more, I'll buy it myself.

J. C. A. I'll study at least ten minutes every evening.

L. R. A. I will shave twice a day at the least count.

C. M. A. I will receive no more letters from lady friends.

W. J. B. I will go to Sunday-School regularly twice a week.

W. E. B. I will be civil.

G. W. B. I will stop swearing.

E. L. B. I guess I won't study quite so hard.

C. A. B. I will try to teach the Professor some Mechanics.

C. N. C. I will make a new attempt to raise a mustache.

C. F. P. I will henceforth drink but one glass a day, and attend the Museum but six times a week.

G. M. E. I will stop saying bad things about the Faculty.

H. C. H. I will attend church but once a month, as I have proven by the Law of Tangents that more would not be best.

L. DeV. M. I will stop getting acquainted with girls at the Library.

G. C. G. I will graduate with '94 in spite of the Faculty.

H. E. K. I will stop giving money to the Athletic Association.

W. F. C. Not to check his head up so high during the coming year. This is the direct result of an interview which a S. P. C. A. man had with him recently.

L. P. K. has resolved to forever abandon his attempt to take the schools out of politics.

A. S. K. Ditto.

G. L. P. has resolved to defend his title of 220-yard championship won at the the class field-day. Runners will take notice.

C. G. H. To back Yale during the coming year. He expects to make a cent.

H. J. F. To give up being a sport.

A. L. S. To say at least one sentence in five which shall not contain the contradictory words "now then."

F. E. K. Not to give Geo. I. any more points on Mechanics.

U. W. C. To reduce the number of essays.

H. N. S. To pay attention in Thermo.

J. C. A. To attend Chapel twice this term.

E. W. D. To eat three meals a day.

C. M. A. That it took too much vaseline to support his mustache.

G. I. A. Not to teach Seniors the process known to some as Elimination.

H. L. C. Not to kick any more girls while at the Green Library.

G. H. H. That the Seniors shall not quote Prof. Eli in any of their essays hereafter.

A. S. K. Not to quiz the Seniors hereafter and regret that he must so disappoint them.

M. P. H. To suppress the ten per cent. rule.

E. W. D. Not to race with C. M. A. again.

John the Black Smith. Not to allow more than 24 banquet lamps to be made at a time.

C. C. G. and C. G. H. Not to bet any more.

J. C. A. To study Mechanics.

L. de V. M. Not to skip the country again.

Sir R. de B. Not to use skilled workmen upon engine-patterns.

Bridget the J. has resolved not to get very near fires.

Janitor Smith. To have nothing to do with second-hand smokes.

San. I will stop talking through my hat and will be decent even if I'm not built that way.

F. H. S. I'll get acquainted with Soars.

F. H. G. I'll still remain as green as grass and wear a mop on my head.

F. H. B. I will join the gymnasium and get strong.

H. J. C. I will learn to play a banjo.

R. F. B. I'll try to be a gentleman.

H. T. G. I'll attend the midweek prayer meeting regularly.

H. D. T. I will study two hours on each lesson.
F. D. C. I will take a bottle of "Chamberlain's Flesh Restorer" daily.

H. J. F. I will stop betting.

W. E. H. I will not bet a cent this year (this probably means that he won't bet anything less than a dollar at any time).

F. L. S. I will cut my hair, also my whiskers.

J. W. S. I will try to find out who Somerville is.

A. F. W. I will stop smoking.

J. B. I will raise as fine a set of whiskers as Prof. Comant or die in the attempt.

G. E. G. Those '96 men shall know that I have a rule.

Theo. L. I will try to reclaim Carpenter from the error of his way, but otherwise will exert myself as little as possible during 1894.

Hoddy C. I will try to reclaim Samson from the error of his way, and, if possible, make him supply cigarettes for both of us.

C. C. B. If I can find anything I don't know about German I will learn it during 1894.

H. M. W. I will not tell the boys how to write out their German exercises any more.

'96. We won't tell Prof. Kendrick how much we know about Physics.

Bick. My sides shall be the envy of all the other Freshmen.

Capt. Hinkey. The Tech baseball team will have to get along without me this year.

U. W. C. Not to let anybody suffer from ennui.

A. S. K. To begin to review.

L. K. To make my hens lay better.

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**LABORATORY NOTES.**

When the Sophomores and Freshmen return to their work in the general chemical laboratory, they will perceive that numerous and extensive changes have been made. The brick walls, which before the fire had been left bare, have been painted a light buff color. The ceiling has been whitened so that the room will be much lighter to work in than before. The blackboards, which were covered with a rich layer of soot at the time of the fire, have been put in good condition, and all the wood-work has been scraped and varnished. The desks had been newly oiled just before the fire and the grime clung to them so that they had to be planed. The faucets at the sinks had to be removed and cleaned and the hoods came in for their share in the general overhauling.

It is in the stock-room that the greatest changes are apparent. After cleaning out the room, about all that was left was the radiator and a part of the floor. At the time of the construction of the laboratories, the ceiling was made by stretching wire-netting across the timbers and covering that with plastering instead of using laths. This made a much stronger ceiling and undoubtedly did much to check the spreading of the flames upward. This has now been improved upon by the additional use of iron rods which pass over the netting and are fastened to the timbers by 2-inch staples. With these precautions, it seems almost impossible for the ceiling to come down until the woodwork to which it is secured has been burned away. The partition walls have been carried up to the roof so that, if in any way a fire should start between the ceiling and the roof of the laboratories, it would be confined to a limited space, and the rest of the building would not be in danger. The walls of the stock-room have been plastered and whitened and arrangements have been made for more shelf-room than before. Both of the doors of the room have been lined with tin on the inside and the casing has been protected in the same manner. The chimney which was responsible for the origin of the fire has been carefully examined for its entire length and has been put in good condition. The hallways which suffered some slight injury from smoke have been kalsomined, and the wood-work has been cleaned and revarnished.

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**SHOP NOTES.**

Business during the past three or four weeks has been rather quiet.

A contract has been taken for a 53-ft. passenger elevator for the large new block on High street.

The electric plant for the Meakin's Packard Co. of Springfield has been completed.

A small order has come from London, Eng., for drill-grinders.

Thirty drawing stands are being made for the equipment of a mechanical drawing-room in the public school of Davenport, Iowa.

The lottery system of obtaining places in the machine shop for extra practice has not been a great success. Nearly all the students drew for the fun of it, and as might be expected, those who did not care to work drew the low numbers, while the high numbers seemed to go to those who were really anxious to get a place. This rule had one exception in the case of Mr. G. L. Philpot who, notwithstanding the fact that he did not intend to work, drew the highest number of all. Number 1 was drawn by Cullen, '96. The trouble arising from this distribution of the
numbers was that those holding high, or moderately high numbers, did not think that they had enough chance of getting a place to make it worth while coming up to the shop to find out, whereas a good many of the low numbers either were not drawn or were held by men who did not care to take their place, consequently the shops remained nearly empty, 13 having been the highest number present on any one day.

Up in Mr. Badger's department there have been a few Seniors and Freshmen at work on their respective jobs; the Seniors are of course still engaged on the patterns for the new engine and have got them well under way, in fact, a number have been completed and the shop has already received a few of the castings. The Freshmen have generally completed their elementary course and are now starting on their patterns.

The incandescent light plant recently placed in the wood-room is working very satisfactorily and furnishes a much better light for the benches, than the old system. The dynamo is 5 H. P., and furnishes a current just sufficient to operate the 50 lamps with which it is equipped. Only a little over half of these are used at a time however, and it would be better if the benches in central part of the room were furnished with a lamp a piece as are those around the outer part of the room.

In the other wood-room, the men are engaged on the large carriage-elevator 15' 6" x 8' 6" for C. C. Houghton, Worcester.

There has been nothing going on in the mechanical laboratory during the vacation. A few of the Seniors have been making tests on a mill engine of the West Boylston Manufacturing Co. at Oakdale.

REMARKS OF CRITICUS.

With the present issue, do Criticus and his humble writings become a feature of the W P I. In subsequent issues, as in this one, will a column or so be devoted to the products of his pen. It is the intention of Criticus to here discuss, comment upon, and, in some instances, criticise the various affairs and organizations connected with the Institute and of interest to the students and readers of the W P I. It is by no means his purpose to devote his energies wholly to criticism, as his nom de plume might at first imply. In fact, the now accepted idea of censure that words from the root of Criticus have, was not included in the original meaning. Every article that may appear in this department will be written with the kindest of feeling toward all. Criticus sincerely trusts that they will be so considered by student organization and Faculty. "With malice toward none, with charity toward all" is the motto of Criticus, and he will ever endeavor to bear those words in mind when wielding his mighty pen. For obvious reasons the identity of Criticus will be unknown outside of the editorial board. He however, hopes that student and alumnus send him any suggestion or topic for discussion that he may have in mind. Criticus assures all such that any topics worthy of discussion will find a place in these columns in due time. Any communications addressed to Criticus, care W P I, will reach their destination and receive his careful consideration.

* * * * *

Criticus hears that a member of the Institute has just disposed of his Institute pin at a sacrifice, as the merchant would say, in order to purchase the pin of a certain society connected with the Institute. The fact, itself, is of little importance and would never have been mentioned by Criticus were it not for the principles there involved. He is heartily in favor of what little society and club life there is here at Tech, and wishes there might be more it. It is undeniable, however, that every student is under higher obligations to the Institute than to any society connected therewith, and college spirit should precede society consideration. Had the student in question bought a society pin, at the same time keeping his Institute pin, no one would have uttered a word of criticism. But by selling the Institute pin that he might be enabled thereby to purchase a society pin, the student shows he cares more for his society than for the Institute and its interests. Criticus deeply deplores such lack of college feeling.

* * * * *

In the last number of the Tech appeared a table giving the present records of the M. I. T. Athletic Association and also the collegiate records for the same events. The writer of the article points with some pride to the M. I. T. records, some of which are indeed creditable. Although the W. P. I. has less than one-fourth the number of students of the M. I. T., Criticus believes that our records on the whole surpass theirs, although in three or four events our records are decidedly inferior to theirs. Considering our numbers, Criticus believes our athletic records will compare favorably with those of any like institute in the country. The records of the two institutes are given below; in the fence vault we have no record. Criticus has added the two-mile run to the list, as that is one of the standard events:
T. F. Mitchell, ’86, has been appointed assistant examiner at the patent office, Washington.

William H. Kirchner, who was graduated from the Institute in 1887, has accepted the professorship of drawing in the engineering department of the University of Minnesota. Immediately after being graduated from here Professor Kirchner accepted the position of instructor of drawing at the Rose Polytechnic. In 1889 he was made junior professor of drawing there, and has remained in that position until the present time.

Aldus C. Higgins, ’93, left last week for Washington, where he has accepted a position in the patent office as an assistant examiner of patents.

In “The Champion Sporting Manual” for 1894 is the name of J. A. Derby, ’93, in the list of last year’s leading pole vaulters. But four men are ahead of him in the list.

Frank H. Stone, ’93, has been elected one of the alumni directors of the Worcester High School Athletic Association.

His success in making from almost wholly raw material a football team which has been almost invincible has brought him into high favor with the High School athletes.

Charles M. Greene, ex-’95, who is now on the training ship “Enterprise,” has recently been given a gold medal by Governor Russell for the highest standing and best behavior among the cadets. Greene’s standing in seamanship and navigation was the highest on the ship.

F. W. Smith, ex-’95, has left the “Enterprise” and intends to enter the Institute again.

Beaman, ex-’96, stands among the first six in engineering on the training ship “Enterprise.”

In the triangular league between Amherst, Dartmouth and Williams, Dartmouth won the pennant, Williams was second and Amherst third.

There are 2,208 students enrolled at Yale this year.

Harvard’s teachers number 322, of which 87 are members of the Faculty.

The number of students at M. I. T. this year is 1,158, among whom are 47 women.

The United States is the only country spending more for education than for war equipment.

Fraternity men are prohibited from being on the board of editors of the University of Michigan Daily.

There are 3,156 students at Harvard this year, a gain of 190 over last year.

Over $1,500 has been subscribed by the students of Wellesley for an athletic field and running track.

A hare and hound chase was recently held at Smith College. Fourteen girls ran over the course, a distance of about 13 miles.

The Harvard Glee Club travelled over 2,000 miles during the Christmas vacation.

Absences are not reported at the University of Chicago until the end of the year. A student having 30 or more absences is required to take one extra study the following year.

In German universities a student’s matriculation card shields him from arrest, admits him to the theatres at half-price and takes him into the art galleries free.

The Faculty at Cornell has recently made some radical changes. Hereafter there will be no regular examinations. The student’s knowledge of the subject will be determined by his daily recitations and by short, unexpected quizzes. The Thanksgiving recess has been abolished; only the day itself will be observed.

The students of Chicago University have formed what is known as the Students’ Express Company. It is incorporated under the laws of the State and has a capital stock of $10,000.

Harvard Annex will hereafter be known as Radcliffe College and the graduates will receive the degree of A. B., instead of a mere certificate of graduation as heretofore. The change in the official name is due to the fact that Anne Radcliffe, an English woman of the 17th century, was the first woman to make a bequest to Harvard.

The Stinecke Scholarship at Princeton is the largest one given by any college in the United States. It is awarded for excellency in Latin and Greek and amounts to $1,500 annually.

There are 70 co-eds at Brown.
Of the 8,000 students enrolled at the University of Berlin 800 are Americans.

The trophy room in the new gymnasium at Yale has recently been completed. The room is 30 by 40 feet and is finished in white marble. In this room, with one exception, are all of the world's championship trophies ever won by Yale. The only missing trophy is that of the world's intercollegiate base-ball championship won by the Yale team at the World's Fair. This team was composed to a great extent of law-school men and was managed by a man from the law department. For this reason the law school has appropriated the trophy and refuse to place it with the other well-earned trophies.

The Vassar girls take proper pride in the fact that none of their graduates have ever been divorced.

Wellesley College has 746 students, of whom 290 are Freshmen.

Columbia offers free tuition for the course, which is equivalent to $600, to the Freshman passing the best examination.

The Wesleyan Faculty have promised to send their Glee Club on several trips each year, and to make up any financial loss which may be occasioned by doing so.

President Andrews of Brown University has received a call to Chicago University. As yet he has not decided whether he will accept or not.

Columbia won the intercollegiate chess tournament played in New York during the holidays. Columbia had a total of eight and a half wins; Harvard was second with 7; Yale third with 5; and Princeton last with 3½.

Princeton has erected a movable grand-stand upon its foot-ball field.

The receipts of Princeton's base-ball association last season exceeded $11,000.

Leland Stanford, Junior, University desires to be called hereafter simply Stanford University.

The University of Chicago cleared about $40,000 this summer by renting its dormitories to World's Fair visitors.

The cap and gown will be worn by this year's senior classes at Amherst, Dartmouth, Harvard, Princeton, Williams, and Yale.

"Sing a song of side-shows,
A pocket full of tin;
Costs you forty dollars
To take the Midway in."

— Sequoia.

In England one man in 5,000 attends college; in Scotland one in 615; in Germany one in 213; in the United States one in 2,000.

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**TECHNICALITIES.**

A Senior wishes to know what relation Adam Bede was to the Venerable Bede.

An excellent photograph of '95's champion foot-ball team has been taken by Scherreev.

President Fuller is endeavoring to have the sign "Technical School" on the Boynton street elences changed.

For the rest of the year Freshman ethics and hygiene will be omitted and an extra hour of algebra substituted.

Candidates for the class polo-team have improved the few days of good skating during vacation by playing a number of practice games.

John Hurley, the faithful janitor, was substantially remembered by '95 at Christmas time. That class gave him his Christmas dinner in addition to a generous supply of groceries.

On the Friday evening preceding the Christmas recess President Fuller tendered a reception to the Sophomores. A large number of the class were present and passed the evening with games and songs. Several of the instructors and members of the Faculty also attended.

A very convenient desk calendar has just been issued by the Pope Manufacturing Company, Boston, Mass. It is a pad calendar, having a leaf for each day, on which is the date, a short quotation and a blank space for memoranda. They will send one to Tech men on receipt of 14 cents in stamps.

**A FEW DEFINITIONS.**

Some genius has been calculating values as related to human energy in the various departments of life, and cites the following illustrations: Vanderbilt can write a few words on a sheet of paper and make it worth $5,000,000; that's capital. The United States can take an ounce and a quarter of gold, and stamp on it an eagle bird, and make it worth $20; that's money. The mechanic can take the material worth $5 and make it into a watch worth $100; that's skill. The merchant can take an article worth 25 cents and sell it for $1; that's business. A railroad president can sell you a bond warranted to pay six per cent., and then assess you 87; that's financial ability. A board of directors can bond a railroad for $100,000 a mile and then discover the traffic don't amount to a red cent; that's railroad enterprise. A man can pay five cents for a seat in a car, have to stand on the platform, and then fall off and be cut to bits, and be called a drunkard; that's the electric.— *Railroad Gazette.*
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