Vol. V.  Saturday, February 15, 1890.  No. 9.

CONTENTS.

<table>
<thead>
<tr>
<th>CONTENT</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>The &quot;Personal Mark&quot;</td>
<td>201</td>
</tr>
<tr>
<td>Chapel Exercises</td>
<td>203</td>
</tr>
<tr>
<td>Hail, Prep!</td>
<td>204</td>
</tr>
<tr>
<td>Our Marking System</td>
<td>205</td>
</tr>
<tr>
<td>A Week of Solid Work</td>
<td>209</td>
</tr>
<tr>
<td>Character Studies</td>
<td>212</td>
</tr>
<tr>
<td>A Criticism Answered</td>
<td>215</td>
</tr>
<tr>
<td>Events of Personal Concern</td>
<td>217</td>
</tr>
<tr>
<td>Ninety-One's Supper</td>
<td>218</td>
</tr>
<tr>
<td>Thirty-nine Preps</td>
<td>219</td>
</tr>
<tr>
<td>In Australian Wilds</td>
<td>220</td>
</tr>
<tr>
<td>Senior Class Appointments</td>
<td>220</td>
</tr>
<tr>
<td>N. E. I. A. A. Convention</td>
<td>221</td>
</tr>
<tr>
<td>Camera Club Election</td>
<td>221</td>
</tr>
<tr>
<td>Work at the Shop</td>
<td>221</td>
</tr>
<tr>
<td>Technicalities</td>
<td>222</td>
</tr>
</tbody>
</table>

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THE "PERSONAL MARK."

The forty-third semi-annual lottery drawings conducted by our esteemed Institute have taken place, the results have been announced, the prize-winners have been congratulated and the unlucky individuals who have drawn blanks have received many expressions of sympathy. In the few months which intervene before the forty-fourth shaking of the dice-box, the students will, as usual, we suppose, continue to search for mascots and lucky omens. In a few years, judging from present appearances, it will be the customary thing to consult mediums and fortune tellers, before examinations, instead of resorting to the old-fashioned method of cramming. Does this show a tendency in the right direction? Let us look into the matter and see how it is that a fellow born under a lucky star seems to get along better at the Tech than his unlucky classmate who does not enjoy the blissful feeling of security which the possession of a mascot gives.

It may seem rather harsh to liken our marking system to a semi-annual lottery drawing, but the simile is within the bounds of reason. As long as the personal mark is allowed to sneak through Boynton Hall corridors and twist its snaky fingers around the throat of its unsuspecting victim, just so long will those who fear their turn is coming next endeavor to kill off this monster into whose clutches so many have fallen.

When the ranking system was abolished a year ago, a universal sigh of relief went up from all the undergraduates. With the adoption of the present system, it was thought there was coming a condition of things which had long been hoped and prayed for. Ever since the Institute was founded there had been one long, loud, continual kick against the evils of the ranking system. The school paper, founded but a few years ago, can show yards of columns breathing forth fire against the ranking system and the personal mark. An experience of one year under the present system justifies a belief that it is a great improvement, in
many respects, over the old. It is a great improvement because it disguises, like the trouser leg which hides a wooden limb, the true inwardness. It does not show up the standing of the student as the ranking system did. But the standing of the student is there, nevertheless. The personal mark gets in its work no matter whether it is expressed in numbers or in symbolic letters, and it kills just as quickly and just as surely. Under the old system a student received his general average, and, if said average were below fifty, a request to withdraw from the Institute. Withdraw he was compelled to do, and he did it in a dazed condition. He never knew what struck him. Now he sees his work in each study expressed alphabetically, and, if he is tolerably certain that his daily work in the classroom has been passable and his examination paper above or near the 50 per cent. line, he understands, if he is a bright boy and is fairly expert in judging character and in doing a simple sum in arithmetic, where the trouble lies. From the data thus obtained it is very easy to show that the personal mark system is pernicious.

The WPI thinks the personal mark is pernicious because it substitutes a possibly-biassed judgment for a true test.

It encourages questionable methods of "making yourself solid" with your instructor.

It is too powerful an agent for either good or evil to be in one man's hands. It can practically annul the results obtained by examination.

It savors too much of despotism and absolute monarchy.

It thrives in secrecy.

Not every professor would care to exhibit his personal marks.

It is essentially a dark-lantern system and it shrinks from the open sunlight of truth.

Now with one instructor a personal mark means quite a different thing from what it does with another. A few members of our Faculty, recognizing the great liability for mistaken judgment under a system of personal prejudice, keep from day to day an actual, bona-fide, written record of their pupils' work. Every recitation is marked and the result of every weekly or semi-weekly test is carefully noted. Then, when the time for making up the personal marks of the term comes, it is a very simple matter to average these results and determine the daily-scholarship mark. Of course, all this is done before the examination papers are seen by the professor. Then, without any revision, or "after-thoughts," or "arrangements," the daily-scholarship mark is averaged with the examination mark to fix the student's standing for the term. This daily-scholarship mark is a true personal mark. It is fair, just and honorable. And, too, it is as near an estimate of a student's ability as it is possible to get on this earth. The professors at Boynton Hall who use this method and rigidly adhere to it deserve a vote of thanks. They are using every means in their power to treat the students under them fairly and squarely, and we think their intentions are appreciated.

There are some branches of study, however, which cannot be treated in
this manner. Then it is plain that the daily marking method must give way to something else. It might give way to weekly examinations and the personal mark could be the average of these weekly tests. But it is not done in this manner. The professor waits until the close of the term and then, in spite of the fact that memory may fail, that judgment may be warped, that social considerations may prevail, that birth and rank and breeding may have influence, he gives a mark which, in his opinion, the student merits. He has seen his subject perhaps once a day, perhaps once a week. No matter, he has seen enough of him to imagine that he can give an exact estimate of his ability.

Can he? Can a teacher who hardly knows the names of his pupils [A correspondent last month alleged that there were instances of that kind on record] give a just estimate of their ability? And, what can the result be, but disastrous?

We have too much respect for our professors to think that they would stoop to the practice of making out their personal marks from the results of the examination papers. We have too much confidence in their conceptions of justice to think that they would juggle with a mark that temptingly offered a chance for juggling. What we kick against, however [and we are kicking against things, not men; we are striving for a principle, not a personality], is the fact that these same professors do not give a correct estimate of their students' abilities. Something is the trouble. Either they do not know their pupils sufficiently well to enable them to give an estimate, or this estimate is valueless because it is influenced by personal considerations. When an instructor knows his pupil thoroughly there is no reason why he should not sum him up correctly. We never heard very many objections to the marks received in shop practice. In a shop, a fellow gets a chance to show what he can do and the results are in tangible form, too. You can look at these results with your eyes and feel of their fine edges with your fingers. A mark received there can be a just estimate and, to the credit of the Washburn Shops be it said, no breath of suspicion ever attached itself to the marks received in that department.

The ugly rumors that have floated around the Tech in connection with the withdrawal from the Senior class of one of its most popular members have been such as to bring the blush of shame to all who love their Alma Mater. No man in his right senses would imagine for an instant that these rumors were true. They are absolutely false, of course. They must be. But the thought that they might be true—that is enough to make us wish that the personal-mark system, which nourishes these infamous slanders, be choked off before it infuses more of its venom into Alma Mater's veins.

CHAPEL EXERCISES.

The advent of the Apprentice class seems to have infused new life into the daily chapel exercises. There has been a marked improvement in the singing of late. On some mornings, when a favorite hymn is sung, the chapel fairly rings
with melody, and the joyous songs of praise ascend the ventilating flues to the sky in a most inspiring manner. The clear, young voices of the Preps have added tone where it has been badly needed. When these youthful and unsophisticated members of '93 reach the Junior or Middler period of their Tech career, we fear they will not join so exultingly in the chapel singing. The average upper classman goes into the daily devotional exercises weighed down with cares of algebra, calculus or mechanics. His spirit is crushed by these tremendous responsibilities and he mechanically holds up his hymn-book before his face and mumbles a few inarticulate syllables. This is the average Tech at his chapel singing, but, on the other hand, there are many shining lights in the vicinity of the back seats who believe in quantity rather than quality and who carry out their beliefs with commendable conscientiousness. These latter raise the average of the whole very materially and are entitled to much praise for their efforts.

The WPI is sorry not to see more members of the Faculty in regular attendance upon the chapel exercises. More than three instructors are rarely seen occupying seats on the platform. On some days there is not even one professor, besides President Fuller, present. Before the admission of the Preps this was especially noticeable. This is not as it should be. Our professors should set a good example to the budding minds under their charge. And, too, they are making themselves liable to a condition in religious practice by thus absenting themselves. In a short time, also, their five cuts will have been used and their parents will be notified. With the beginning of the new year we had hoped to see our professors turn over a new leaf in this respect. The building of the Salisbury Laboratories, the costly repairs at Boynton Hall, the recent gift of $5,000—these sudden acquisitions of wealth seem to have chilled the hearts of our Faculty. They have become haughty and exclusive and shun the plebeian duties of daily attendance at chapel. If the distance of the Salisbury Laboratories keeps eight or ten of our teachers away, then the Salisbury Laboratories ought to be moved nearer or some means of rapid transit devised. As a matter of history, however, the attendance at chapel by members of the Faculty before Salisbury was built did not vary greatly from what it is now.

HAIL, PREP!

Thirty-nine young men, having described satisfactorily the equatorial wilds of Africa and located with tolerable accuracy the place of C. Columbus's landing, have been received into our midst, there to remain on the condition that they "evince decided aptness for mechanics." We are mighty glad to see you, Ninety-Three, and it is a pleasure to welcome such a distinguished gathering. Any competent judge can readily see that the present Apprentice class is a collection of some of the brightest and most talented young men whom the Institute ever had the good fortune to claim as her own. You have probably already received this bit of intelligence, but perhaps this is the first
time you have seen it in print. Do not, however, on your lofty throne, disdain the advice of well-meaning friends. Walk in the straight and narrow path of virtue that your personal mark may reach an exalted eminence. Preps who were accustomed to throw awls into the ceiling of the wood-room and to smoke Sweet Caporals on their way to Sunday-School have been known to die off in their youth and have brief and concise funeral exercises. The upper classes are hoping that you will make a bold showing on the running-track and the ball-field, for they look to you for a strong reinforcement in the department of athletics. Of course you will subscribe to the W P I. Then your path will surely be strewn with flowers and life will be one sweet elysium. It is rather hard, we must admit, to arise before the dawn of day and grope your way under the light of the Boynton street illuminated lamp-post up to a cold room where you spend most of the day looking out of the windows. But don't get discouraged because of the daily round and unending task. In a few weeks you will be allowed to use the circular saws and the buzz planers and then you will have lots of fun. Hunting in the sawdust for fingers you may have casually mislaid is very exciting and productive of much amusement. We all have been there, Ninety-Three, and we sympathize with you. Keep steadily at work, don't go out nights, provide clean towels every week for the upper classmen and you will finally get there a-flying.

Many of the Seniors have already chosen thesis subjects and begun work.

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**OUR MARKING SYSTEM.**

**The Pet Topic of the Grumblers and Kickers of Past Years Still on Deck.**

Years may come and years may go but twice every twelvemonth, as regular as the change of seasons, come the semi-annual examinations with the attendant marks, and just as regularly come complaints and harsh criticism concerning the methods of marking pursued by the Institute. This year is no exception. The complaints have been just as frequent as usual.

It is always interesting to hear from the students on this question and no doubt those in authority have often obtained in this way many suggestions which have aided them in determining what was best for everybody concerned. This month the W P I has a whole raft of opinions concerning our marking system which it launches with the faint hope that it will reach its intended harbor. These opinions ought to make very interesting reading for all concerned. They are from representatives of every class except '93 and they show the question in every possible light. Here they are:—

**New System Hardly to be Distinguished from the Old—Has Its Good Points—Can Anything but a Rough Estimate of a Scholar's Proficiency be Made?—The "Sizing-up Mark"—How Some Students Create Impressions—The Graduates' Aid Fund.**

The forty-third semi-annual inspection of students with its resultant revision of their standing has been accomplished, and the data of the observations recorded and distributed. This is the third inspection which has taken place since the adoption of the new method of marking so that it might be presumed that its working is established fully.

So far as this is concerned, however, it hardly can be distinguished from the old method by which each man received his average percentage and rank in the class. So it may be assumed that if the old method was a success, the new one is likewise. With the exception of the change in regard to the thesis mark and the thesis drawing mark, the present system is the same as the other, only a student now knows approximately how he stands in each study, but for this boon he is obliged to give up his average percentage and rank in the class.

This plan truly has some good points as
compared with the old plan, for now a student may know whether he is distributing his energy advantageously over all his studies or is sacrificing one for another. And, again, he cannot make more than an approximate comparison with other students regarding actual rank, so that, as the case is involved in uncertainty, there is less cause for fault-finding in general. But some students may have per cents. which differ by only a few tenths. If the per cents. happen to come near the limit of the letter under which they are classified, one man will get a B and the other a C. This causes hard feelings which, however, are more or less mollified by the uncertainty previously alluded to.

And this brings us to the kernel of the question. Can anything more than a rough estimate be made of a scholar's proficiency? Part of his proficiency is determined by the manner in which he treats a series of questions which have been selected from the wide range of his studies. His proficiency for that given time, doubtless, is found with some degree of accuracy, but as so many altering circumstances may enter to change his work at the given time from what it would be at some other time, it has been thought only just that his proficiency should be partly determined by a personal or "sizing-up" mark. This mark is given by each individual instructor and is supposed to be an impartial opinion of the student's daily work. Many question if it is impartial and the prevailing opinion among students seems to be, that if one does good work the first year he may loaf during the remaining two years without affecting his mark. No fault would be found with this custom, however, but for the fact that those who do poor work the first term may work ever so hard thereafter without much improvement in their rank.

This opinion of the instructor ought to be formed, as we think it is in some cases, with reference only to the student's present ability, not to what he has done in the past or may do in the future; neither with reference to what he ought to do nor what he ought not to do. Because John Smith did well as a Prep or Junior, we cannot assume that he does equally well as a Middler or Senior.

This is not a theological school, so a man's proficiency should not be estimated by his religious proclivities or moral tendencies. A man may know very little about a subject in hand, but considerable about some other subject. Because he does have other knowledge, it is no sign that he can be considered proficient in the subject in hand. When students are heard every day reciting on some topic for which they were not asked and so creating a good impression, as it would seem, and getting a good mark at the end of the term, there is little reason to wonder that some other men grumble, who, when called on for a recitation, fail because they have not the impudence or ignorance to talk of something else. Isn't the fact of so many men with low standing at college filling responsible positions after graduation and of men with high standing who have never been heard of after graduation explained by just this principle? If they are ignorant on a point they have the courage to say so, and, whenever any trying position comes, instead of squirming about and trying to avoid it, go boldly to work or absolutely refuse to touch it.

No doubt an ideal situation would be gained if each man were told that he was doing well, or might do better, or must do better, and so be rid completely of the necessity for marks, but the benevolent friend upset all these possibilities when he established the graduates' aid fund, for from observation it would appear that the selection of the first six is made on the grounds of proficiency. Therefore there must be distinction and that often to such fraction of per cents. as to seem absurd, for what man on earth can calculate with any degree of accuracy the worth of any other man in any department of work or knowledge. Verily, the assumption of wisdom on the part of some is appalling, and even if it be said that the same error enter all the marks, it is far from probable that they are in proportion.

It seems hard to think that it was ever necessary in the history of the Institute to raise the standard of scholarship by offering a prize, but such must be the conclusion, for probably no student ever came to the Institute who did not see his way clearly before him, and, so far from being distributed among those who really need the money, it generally goes to those who could easily get along without it.

So this is the case: a charity fund which is distributed, not among needy students
who, because of their difficulties, cannot be so proficient as their fellow-students who are in better circumstances, but among those who can dispense with it. Because of this fund distinctions must be made which are not often evident.

Why, then, not let the fund of $10,000 or more revert to the benevolent friend or his heirs? If they are still benevolent, it would doubtless come back as an addition to the general fund for the support of the school.

Our Parents and Friends Get Wrong Impressions.

It seems too bad that with all the advancements that have been made at the Institute of late, with all our improvements and added facilities for thorough work, there is still lacking a very essential element. It is a painful confession to make, but it is apparently true that at this Institute there is not that relationship between Faculty and students which establishes peace and accomplishes work. There should be no reason why students of the Worcester Polytechnic Institute should stand in awe of their Faculty or why they should cherish unpleasant feelings toward the gentlemen under whose jurisdiction they are in a great measure placed.

I say there is no reason why this should be so. It ought not to be so and if it is so something is wrong. I have talked candidly with many of my fellow students and with recent graduates on this subject, and I am convinced as they are, that the marking system or the lack of the marking system [whichever it may be], is the basis of much evil at our Institution.

No one finds fault with the plan of marking on a scale of A, B, C, D and E. This we believe perfectly proper. Much complaint is made, however, of the manner in which these marks are distributed. Men who are considered by their classmates as A or B men are awarded a C, D or even an E mark for their pains in the report which comes out at the end of the term. These men deserve good marks but they have been unfortunate. They are smart men, but at some time or other they were known to play foot-ball or witness some athletic contest, or perhaps, not being on their guard, were caught smiling in the corridor by some professor who happened along about that time.

A great many individual cases evince the fact that something beside scholarship determines a man's standing in his studies. All that we ask is justice for every man. We fail to see the propriety of conditioning a student of real merit on account of a professor's personal feelings toward him. To be sure, marks in themselves are of little import. To the Tech man or any other who is acquainted with the modus operandi, they furnish no information as to a student's ability. But our parents and friends who have no way of ascertaining how we are progressing other than through the semi-annual reports, find considerable significance in the marks and it is for this reason that we object.

Give us what we merit and there will be less friction, less discouragement and more harmony throughout the whole institution.

Offers the Greatest Inducement for Favoritism.

While the present marking system in vogue at the Tech is in many respects superior to that which it has superseded, it might be vastly improved. The present system, while it gives a man a vague idea of his standing in each study, does not give him that definite information which seems, to me, to be his right. Of course he knows whether his standing was high or low, but just how high or how low he can only guess. If he gets a D, he has no way of knowing whether he has "escaped the skin of his teeth" [Job xix. 29], or whether he lacked a small fraction of the mark necessary for a C. At the other end of the scale, he cannot know whether A means ninety-nine per cent. or ten or fifteen less. Further, this system offers the greatest inducement for favoritism on the part of the instructors. For instance, if a student had fifty-two or three in a certain study, it would be very easy for an unscrupulous instructor to mark him E without the least danger of detection, provided, as is the case here, the actual per cents. were never made public. Not that I mean to imply that any of our instructors would be guilty of such a deed, but no system is good which admits of such easy falsifying. The only good system is where the student has easy access to his mark for the last week or month, so as to be able to better divide his time for the next period. In this manner he would not be liable to spend his time on some subject
which did not really need it, and so slight one which did, but could put his time just where it was most needed. Of course he can form some idea of this himself but not as well as his instructor. For instance, I have gone into more than one examination fully persuaded that I was only prepared for an E, only to find that I had passed, not on what I did know, but on what the rest didn't know.

Senior.

Personal Mark Leaves Room for Partiality.

It always seemed to me that a system of marking in which the student was given for his mark an average between his written examination and a mark representing his daily average in the work he had been doing must be an excellent one, but the results which have been given out as representing this average, in some instances during the past few years at the Institute, have made the system appear not quite so fair and impartial. The whole ground for complaint which the students have had is, that the so-called personal mark has not represented what it was stated to represent in the system of marking, that is, some of the instructors have not given as the personal mark what the student has actually done from day to day [which is really his own personal mark], but have given in its stead their personal mark of him, representing a general summing up of the impressions the student has made upon their minds as to the work he was doing, which leaves room for a great deal of partiality and prejudice. When a student is marked daily in his work and his personal mark made up of his daily average, before his examination, no complaint can be made. This is done by a number of the instructors at the Institute. But when no record is kept and the mark which may or may not be a man's ruin is made by a professor's general summing up of the men under him, of whom he may have something like fifty, there is just ground for complaint. If there is going to be a personal mark, let it be the professor's mark of the student's personal work, and not the professor's personal mark of the student's work. 91.

Let Us Have Either No Marks or the Whole Truth.

I have been asked to give my opinion of the present marking system and I will do so in as few words as possible, hoping that it will be received merely as an opinion, for the writer would hardly presume to consider this article as on a par with an opinion from one who has studied the subject more carefully and for a greater length of time. There is always dissatisfaction about anything mysterious because one cannot fully grasp what he is after, and this is the case to some extent with the marking systems which have been employed here for the last few years. It was confidently expected that this would all be done away with by the adoption of a new system, but we have the new system and the writer, at least, thinks that there is considerable yet to be desired. In the present system we hardly know anything more than we did before, for it is possible for two men with a fraction of one per cent. difference in a study to have an A and B respectively. Remembering this fact, it seems to the student that his reports are at best a rough approximation. The fact that reports are given at all would indicate that it is intended that the recipient should be able to tell exactly how he stands in his work. To fully realize the object of a system it should be both precise and exact, and its object can be accomplished, it seems to me, only by giving actual percentages with the rank. Either let us have no marks at all, or the whole truth.

Turn on the Light. This One Advises.

Turn on the light, I say, and let every student know just what he gets in every study. Give him the actual per cent. and let him have his examination papers after they have been reviewed and marked by the instructors. Then he can see just where he is deficient and how he must apply himself to reach a higher standard. The only reason why the Faculty don't pass back the examination papers and give the actual marks is because they wish to avoid unpleasant questioning and do not care to lay themselves open to suspicious which may be unfounded. If a marking system is worth anything, its results ought to be of some benefit. As it is now, a fellow is just as wise before an examination as he is after it, on the subject of his exact standing. And then when he is expelled for poor work he feels aggrieved, and quite naturally. With the examination books, corrected, in our hands, we can see just why our marks are what they are. Under the present system we get our marks, but do we see the reasons for them? No, we don't. Turn on the light! * * *
An "Invention of the Devil."

Several years ago a man was lodged in the Summer Street Lunatic Asylum. His peculiar aberration of mind led him to believe that he created everything—the earth, the moon, cocktails, professors, McGinty; in fact, every time he saw anything new, he immediately said, "I made that." At that time a railroad was being run through between the Asylum and Union street. When the road was completed a train was run over the track and the patient with such magnificent creative powers was brought to a window to witness the event. At first nothing but wood was used for firing the furnaces, and soon the engine, decorated with streamers and puffing out dense volumes of pitchy smoke, came tearing around the curve. The lunatic uttered a piercing shriek and was otherwise visibly rattled. "There," said the attendant, "did you make that?" "Oh! no," replied the man, "I had nothing to do with that. That is an invention of the devil!"

That's what I think of the present marking system.

A WEEK OF SOLID WORK.

A Radical Departure in Distributing Shop Practice Proposed.—Opinions Pro and Con.

There is an interesting question concerning the distribution of practice time in the Washburn Shops which is worth discussing in these columns. Instead of the present system, under the regulations of which each division of the Senior, Middle and Junior mechanics works ten hours in the shop and then quits until the same days of the next week come around, would it not be advisable to consolidate six weeks of ten-hours practice into six consecutive days of toil? If this plan were adopted it would mean that studies would be dropped for a week or so at a time and the interval filled with solid work. It would not cut into the time of any study or increase the hours devoted to practice. It would mean simply a different arrangement of time.

There is much to be said on both sides of this question and an investigation opens many knotty problems which require careful foresight and cool judgment for their solution. If the present order of things is ever changed, it will have to be done contrary to a fundamental law which has always found expression in the school catalogue as follows: "Practice, in the school, is subject to two conditions:—First, it shall be a necessary part of each week's work; secondly, it shall be judiciously distributed and constantly supervised." A week's solid work in the shop would no doubt be considered "judiciously distributed" practice and it would unquestionably be "a necessary part of each week's work." If the whole can be considered as the largest part, then the catalogue could go on its way rejoicing but, as ordinary grammarians understand the term, it would mean that the catalogue would have to be altered in a time-honored portion of its reading matter to meet the new conditions.

Opinion is divided at the Washburn Shops concerning the practicability of the proposed scheme. Some declare themselves in favor of the change and would like to give the proposed plan a trial. Others are lukewarm in championing the new cause and admit that the present system of ten-hours-a-week practice has advantages peculiar to itself which would disappear in case the change were made.

Mr. Walls is inclined to think that six days or more of continuous shop-work would be the source of many benefits which are not enjoyed at present and he sums up these benefits concisely in a most convincing manner. In a series of continuous working days a student will be able to apply his whole attention to his work in hand. He will become thoroughly a part of his work and, by giving it his undivided time and ability, will produce better results. It is an approach more nearly, also, to actual business methods. It is the plan of the shop to strictly adhere to business principles and to this is due much of its success. At other institutions, notably the Boston Tech, work in the machine shop loses much of its value because it is done in such a desultory manner; at Boston the students work but two hours and then quit. When the Washburn Machine Shop was in its years of infancy and, indeed, until quite a late period, it was customary for a division to work five hours in the morning of, say, Monday and then finish its week's work with five hours in the afternoon of Thursday or Friday. Chapel exercises were attended at that time and a good half hour was thus lost in washing up and changing working-clothes, not to speak of the loss due to drop-
ping work and taking it up again after distracting thoughts had intervened. When the change came and the present system was adopted, the wisdom of the move was immediately apparent. Moving still further along these same lines, would it not be a wise move to approach more nearly to real business requirements? Some jobs in the machine shop require two or three days for their completion. At present a student has no more than set up the machine and begun work on a complicated piece of work when he is compelled to dismantle the apparatus. Next week the same programme is gone through with and a vast amount of labor and time is thus wasted. If a student is on piece work he can leave his job in the lathe or planer and have it finished by somebody in the next division, but in that case there is a distinct loss to both parties. The first workman is obliged to leave his work half finished or half begun, as the case may be, and is relieved of the real responsibility of the finished product. The second workman takes up the job where the first has left it and is totally ignorant of its peculiarities and the labor and skill which the first bestowed on it in order to get it to that stage. In a solid week of work a man can follow along with his problem of construction and can grasp its intricacies much more readily than if he attacked it at spasmodic intervals. Mr. Walls does not think that the liability to grow "rusty" in a period of six weeks away from the shop is very strong and cites the case of the Seniors spending long periods of time in the wood-room and the dranging department without perceptibility affecting their ability in the iron-room. Then there are the minor considerations of concentrating six weeks of dirty work into one and going with clean hands for a month or more,—quite an important thing to take into account unless the student is supplied with the patent soap, now so familiar, which renders the temporary assumption of the mechanic's disguise a much less formidable undertaking than under the old system of Ivory soap and pumice stone. There is no doubt but what the routine work of the shop could be arranged to fit the proposed system. It would not be necessary to put the Seniors on Junior work, or vice versa. Things would be the same as they are now: a student would receive a piece of work from the foreman's hands and labor on it until he finished it, of course leaving out of the question jobs to be done at once, which, at present, have to be passed from workman to workman. This would not be necessary under the plan proposed. The boys, too, would have practically a week's vacation, that is, as far as studies are concerned, and no doubt some would enjoy that feature.

It is not the purpose of the W P I to advocate the adoption of the system which is proposed but merely to obtain an expression of opinion concerning the matter. With this intent, a few members of the school have been asked to give their ideas about the matter.

The answer to the shop practice question [writes a student whose opinion was asked] is, of course, to be determined by what is best for the student. If he can gain more, both in practice or skill and in knowledge under one plan than another, that plan is the one to be approved. Under the present system under which students practice but one day in the week, the work is necessarily somewhat disconnected, and perhaps not so much is accomplished in amount of work done as would be under another system; but is there not greater opportunity for diversified occupation? One kind of work predominates at one time in the year and another line at some other time. There is no doubt that if students should work for a week at a time, the variety would be very limited, except in the case of the Seniors who are occupied on their special machine, and what progressive workman is there who does not dislike monotony? More work would be done, for, as it now is, a student may not be able to finish a job in a day, and, if it is wanted immediately, some other man must be put on to finish it. The highest efficiency of the laborers would therefore be gained, but they would not gain the highest proficiency. Students are here to learn and to be taught, and not to enrich the Washburn Shops. And perhaps the best point about the present system is, that the day devoted to practice is a relief from study, a kind of oasis in the desert of the week. A man often feels too tired to study, but seldom feels too tired to work. The excuse books show ample evidence of this fact, although some might say that this was the result of two other facts, viz., absence from recitations do not have to
be made up, while absence from practice must be made up. Be that as it may, I still think that the change of work is a real benefit and one that should not be given up. With the exception of this last reason, there does not seem to be any great difference between the two plans if either is carried out conscientiously. But there is reason to believe that there would be a strong tendency to keep students on such work as would most benefit the shop rather than increase the knowledge and skill of the student, if practice were to continue a week or more at a time.

Our correspondent is rather hypercritical in his last sentence, we think. Superintendent Higgins is known to be in favor of giving the boys the very best within the power of the shop, and he would not tolerate a system which would tend to limit their knowledge or skill. He has always put the students' interests first and the interests of the shop second.

A Junior who is enthusiastic concerning the proposed change is not satisfied with a week of work, but would like to manipulate lathes and planers until the whole practice time of the year was made up. This would be a revolution indeed. Shop work, like anything else [he writes], must be steady and continuous in order to give good results. The shop work, as far as I can see, has no connection whatever with the rest of the school work. That being the case, why not work off each year's practice all in a bunch? Then that would leave the rest of the year entirely to study. The practice as it comes now, I find, breaks into my week's work. You get nicely started in your lessons on Monday then, first you know, practice day comes and you must drop studies and go into the shop. The lessons are so arranged, also, that you must study late practice night, and next morning you do not feel like getting up and beginning work at seven o'clock. During the morning, if you are not all tired out and you have a nice job, you get interested in it, but at twelve o'clock you must drop it for a week. Then, when next practice day comes, you are interested in your lessons and have forgotten the practice. It does not give one's brain a chance for rest either, for what time is spent weekly in the shop is not sufficient to drive the thoughts of Dutch verbs or trig. formulas from one's head. During the two weeks that I spent in making up extra practice, I think I learned more than I would have in double the time if it were extended out in ten hours a week, and I know I enjoyed it far better and felt a much greater interest in it. As far as the exercise derived from it is concerned, I think that a half-hour's exercise in the open air, such as a brisk walk, would do one more good than to stand over a lathe in a warm shop for ten hours.

The idea of having shop practice for a whole week at one time and then no more for the next five weeks ['91' writes] is certainly a novel one if not wholly practicable. It seems to me that the possible advantages of such a system of working are wholly outweighed by those of the present system. If this were not the case, the Faculty and the instructors in the shop would surely have discovered it long before this and the change would have been made before. If the idea suggested above were put into execution it would practically give one week in every six as a vacation from the studies of the school, making quite a break in the school work and being long enough to make the work quite disconnected for the time being. In addition to this, the work of the five weeks of study would have to be increased by all the lessons which would have to be given up during the week of practice, thus making the work much harder than it now is. As the work is now done the ten hours of practice, coming once during the week, are just enough relief from the pressure of school work to give one a rest and still not interfere with his work. If the suggestion were made the rule, some of the Middlers might say, Why not have calculus twice a day for one week and then none the next? Besides the above reasons, the task of working 60 hours a week is one that is seldom accomplished here by the students, and, if made a rule of the school, the adoption of it would surely be the means of filling the shop excuse-book to overflowing, thus causing many more unexcused marks than are now seen in it. Then the number of permitted unexcused marks would have to be increased or suspensions would be so numerous that you could count the students in the shop easier than those out of it.

The plan of working in the shop a week or two at a time rather than once a week, as
is now the custom, has, no doubt, several plausible features, though I am convinced that the present system is the better of the two. [A Middler is responsible for this]. The change of work which the shop practice affords every week is, to me, a feature in favor of the present system. I am fond of mathematics and can get along in German, but I should not care for them six consecutive days each week. The shop work, coming in as it does, affords a relaxation which, I think, we all ought to have. Another argument in favor of the present system is the better quality and variety of work which it offers. Most, if not all, of our work in the machine shop is work which is brought in from outside and must be done shortly after it enters the shop. It could not be saved for the Seniors or Middlers who were to come in next month or next summer. Were all of one class to come in and work together for two weeks or a week, we would find, after they had been there for a day or two, that the fine work was all done, and the best work obtainable would then not be particularly fine. Seniors would then be put to the humiliation of doing Middle and Junior work, while the Middlers would, probably, be sent back to the woodroom, and the poor Juniors would have to serve in the blacksmith shop, making bolts for the Seniors. This would neither be advantageous to the shop nor the student.

I believe the plan suggested would prove beneficial in some respects and would be open to objections in others [a mechanic in the Middle class writes]. It would make a student practically a machinist for the time, say, a week, and, with no studies to think of, he could doubtless do more and better work than he could do in sixty hours spread over a period of six weeks. The instructors, also, would be sooner able to judge of the capacities of the men under them and without doubt could do better by them. At present it is almost impossible to go to work on practice days and leave thoughts of studies behind, and the shop is handicapped by this fact. On the other hand there are certain things to be considered, and one of them is, whether or not the remainder of the school work would suffer by such a change.

At the Institute of Technology in Boston, a long summer vacation is made to take the place of vacations during the school year, the theory being that more work is accomplished by this plan. In fact, a professor at that school once said, in answer to a petition for a recess on a certain day, that he would as willingly grant a vacation for a week as for a day, because the regular plan of work would be so upset by the recess. If this theory be correct, what would be the result of breaking into the school year six or seven times for a period of a week, as would be necessary if the same amount of time were taken yearly for practice as is now required? It seems to me that the change, though beneficial as far as the shop is concerned, could be made only at the expense of studies. Another objection that men inclined to sickness would make is, that if they should be sick during practice week, the result would really be no small matter. The vision of sixty hours added to the obnoxious one hundred and sixty-eight hours' extra practice would make a man's hair turn gray. Altogether, I think the most acceptable change that could be made would be to work off the extra practice through the year by working fifteen hours a week. The school year would then have to be changed, but the horrible nightmare of extra practice would be relegated to the confines of history.

The above opinions, perhaps, fairly represent the average feeling concerning the new scheme. In a later interview, Mr. Walls proposes three days of work in case a week would interfere with studies. The shop could easily meet the requirements of continuous practice and the only question to be considered, is, would the change interfere with class-room work at Boynton Hall?

CHARACTER STUDIES.

Choice Varieties of the Tech Student and Their Distinguishing Features.

The Kicker.

The kicker is on hand morning, noon and night. He turns up as unexpectedly as a worm in a peanut shell and he forces his complaints upon us in the corridors, in the chapel, on the street, at church, prayer-meeting, Sunday-school and the theatre. And oh! how he does kick! He has been at it so long that he has become fairly an expert. He begins with his personal mark in mathematics and then he takes up his mark in English. If he gets an E, he kicks
because it wasn't a D. If he has a D, he kicks because it wasn't a C. So it goes until he receives an A. Then he kicks because he hasn't all A's on his report. If he has all A's on his report he kicks be—well, come to think of it, the kicker never gets "all A's," so he doesn't get a chance to kick against that.

He kicks on the subject of class officers, on the policy of the Camera Club, because the shop doesn't furnish lemonade to the boys and because the W P I doesn't give him a free subscription and, every month, a children's puzzle department. It does not matter very much what he kicks about, provided he kicks. Some fine day he will make himself unpopular at headquarters and then he will do no more kicking. No, somebody else will do the kicking and our friend Kicker from Kickerville will get kicked out.

**The One Who Knows It All.**

This student didn't go to the Tech to learn anything himself. He went to tell the other fellows how to do it. In the shop, in the recitation room and on the ball-field, his mouth vibrates up and down like the crosshead of an upright high-speed engine as he explains why this is done in that way or why that was built like something else. He has an answer for every question under the sun and he volunteers his information at every possible opportunity. He breaks into a group of disputants to set things right with his windy suggestions. His voice resounds across the Washburn Shops in explanation of a nick in the grindstone. His clarion tones sound blithely through the boiler room as he tells George how steam is made. He gives Mr. Walls pointers on elevators and emery-grinding machinery. He toys with dynamo and electric light information like Jupiter with his thunderbolts and he explains every phenomenon of chemistry or mechanics with easy volubility. His hearers listen in openmouthed astonishment. They never yet saw him floored with a question and they never will. He knows everything, from the exact time of Nellie Bly's trip around the world to the average heating capacity of oyster shells, and what he doesn't know he fakes up.

**The Goody-goody Student.**

The goody-goody, as he is about to leave his country home for Worcester, is followed to the railroad station by a crowd of his immediate relatives. His former associates, by whom he is not held in very high esteem, gather at a respectful distance and make various comments, such as asking him where he got his hat, and things of that nature. He lets his little brother carry his great, heavy carpet bag and he never gives him a kind glance of encouragement. When the train rolls into the depot, he commences to cry at the thought of parting and slobbers kisses of regret upon his mother and big sister. After he has dried his tears aboard the train he is horrified to see a man in a neighboring seat light a cigar and produce a pack of cards. This convinces him that he is in the smoking car and he beats a hasty retreat. In the next car he finds a seat alongside a pleasant-faced man who talks entertainingly until they get to Worcester. Then the pleasant-faced man continues to Boston together with goody-goody's gold watch. As our Tech boy walks up Mechanic street he sees a drunken man reeling along the side-walk, so he runs quickly back and vanishes in the direction of Summer street, in order to effect his escape from the clutches of evil.

When this young man is fairly started on his career at the Tech he usually joins the Young Men's Christian Association and thereby makes himself solid all around. He isn't of much use in the Association, taking no active part in the prayer-meetings and leading none of his unsaved classmates in the right direction, but he fills up space and is tolerated. In the classroom his sanctimonious bearing is noted and commented on sarcastically. As he grows older he gets so that he can leave home without shedding tears and can walk up Mechanic street without a qualm. He never joins the Athletic Association or plays football for he is very fragile and is liable to crack.

**The Bold, Bad Young Man.**

This variety of student has done much to give the Tech the reputation it now has, to a certain extent, in Worcester. There are a great many people in this city who imagine that the average Tech spends his spare time putting into operation schemes of villainy which he has concocted in his leisure moments. In point of fact, the bold, bad young man does exist and his wicked influence is felt considerably at times, but it is wrong to imagine that this personification of evil is an important feature of the school.
The bold, bad young man likes to congregate, with others of his kind, before the city hall or the Telegram office, on election nights, and note the returns as they are flashed on the screen. It doesn't matter very much to him which candidate is ahead provided the majority is sufficiently large to justify the use of the Tech yell, which our friend indulges in until he is quite hoarse. When his candidate is declared elected, he immediately joins a procession and parades around town with a broom or piece of board on his shoulder until twelve or one o'clock. He doesn't do this because he is a political enthusiast and is blowing off at the safety valve, but simply because he is a Tech. Sometimes, when, for instance, a religious revival is agitating a certain section of the city, the bold, bad Tech takes an evening off and visits the church where such meetings are being held. A few of his classmates, also bold and bad, usually accompany him. They find seats in the back gallery and immediately commence their career of alleged fun-making. When the revivalist approaches and personally invites them to go up and be saved, they laugh boisterously and think it is the funniest thing on earth. Then they join in the singing in an uproarious manner. After a short interval a policeman appears in sight and our Tech students subside with painful suddeness. At an auspicious moment they sneak out and go home, buying a quart of peanuts at a corner stand as a finishing touch to the night's revelry.

On very rare occasions, this student be-takes himself to some obscure beer saloon in the Meadows, or thereabouts, and feasts his eyes on the bock-beer billy goats in the windows. Then he may enter the place and, traversing the bar-room, leave by the rear door. He never stops at the bar to get a drink or a cigar. When he does that he becomes

The Tough Student.

This style is much affected by under-classmen who have experienced, in a country home, a little city life by means of sundry trips to Boston or other large and wicked cities. Sometimes they get their "tough" ideas in preparatory schools where a general laxity of morals prevails. When this kind of student arrives at Worcester, where he is to a great measure free from the restraints of home, he opens his throttle valve and begins to accelerate his rate of living. It usually begins with a box of cigarettes and an occasional cigar. Then comes more cigars and a frequenting of billiard halls and pool rooms. Whiskey cocktails, rum punches and mint juleps follow a drink of beer, and then the subject under discussion is fairly started on his ideal career. Nobody knows how he gets his lessons. In nine cases out of ten, however, he is a mighty bright sort of a fellow when you except his immoral tendencies and he somehow manages to keep along with his class without much study. He almost invariably goes to Boston for an extended or intensified "racket." His pockets are filled with cigarette pictures and his conversation is largely confined to vivid criticisms of the latest ballet he has witnessed. He frequently goes several nights without sleep and then spends time which ought to be devoted to sleep in telling his classmates how hardened a criminal he is. Indeed, it seems as if he were tough merely for the sake of cutting a wide swath of terrified admiration in the hearts of his acquaintances. To the credit of the Tech, it should be said that this manner of student is not very numerous. He has many imitators, though, but the trouble is, the imitations are all bad. There is some respect for a man who is thoroughly steeped in iniquity, but this wishy-washy sort of viciousness which is seen in many instances is positively loathsome.

The Selfish Student.

The selfish student is found in every class and he breaks out in new spots every day. He works for himself, first and last, and not a kind word or helping hand has he for anyone. Sometimes he sacrifices himself for others but it is done purely from business motives. He expects to get it all back, with usury, at some date in the near future. He shuts himself up like a polar bear in its winter cave. From day to day he utters hardly a word to his mates. He tests everything by its effect upon himself. Greeng-eyed jealousy of his classmates' good recitations is a strong characteristic. He hails with glee a failure or discomfiture of a rival. He studies for marks alone and endeavors, by every means, to bask in the sunlight of his teacher's favor. If misfortune overtakes
a friend, he looks at him with a glance as much as to say: "What do you suppose I care? You might have known better." No class-meeting knows his presence and the athletic field is a stranger to him. As he works for himself alone, the acts of his fellows can have no possible interest for him. He sniffs them off with a contemptuous sneer and keeps straight along in his narrow path of selfishness. He flatters himself that he is solid with the Faculty and that he is on the high road to prosperity. He may be solid with the Faculty, for they are often deceived by appearances. But his companions in the class-room, who note from day to day new evidences of his selfish desires and fresh outbreaks of his diseased mind, have him sized up and he has their contempt accordingly. To use an expressive colloquialism, the selfish student is "dead stuck on himself." In the hereafter he gets his just reward and he gets it hot, too.

A CRITICISM ANSWERED.

Another Discussion on the Subject of Free-hand Drawing—Letter from C. B. Albree, '84.

Anyone who keeps a watchful eye on the Institute must have noticed the growing tendency to make the courses of study more nearly conform to the needs of the divisions of classes taking the same course. For example, about four months ago the Senior chemists petitioned the Faculty to transfer their practice in mechanical drawing to practice in chemistry. The petition was granted. Even individual cases are receiving attention, as is seen from the formation of a postgraduate course in physics and the more recent provision for students in partial courses.

This fact led the writer to suggest [in the November number of the WPI] that the requirements in free-hand drawing be modified to suit those who do not desire to spend as much time on the subject as is now required. The article was necessarily short and much was left to be read between the lines. Unfortunately, the '82 man who honored the writer with an answer, while doubtless reading the sentences correctly, did not show a colossal facility in grasping their purport, and none whatever in reading between the lines, all of which is doubtless the fault of the article itself. Therefore the gentleman will not take it amiss if the writer assumes to suggest a few of the ideas that seem to have escaped him, admitting all the time that the reason they escaped is because they were not all there.

The correspondent's suggestion that articles of this character be followed by the signature of the writer does not seem to bear any considerable connection to the subject of drawing, so it will not be considered. Again, the intimation that the article was an attack on the "method" of instruction seems to be a trifle more severe than the article would warrant. The methods pursued by the instructor may be the worst or the most perfect that could be devised—it does not affect the point in question.

The idea that the writer intended to convey was, that, in a limited amount of time, individuals, not whole classes, might possibly be spending the time to greater practical advantage than in attaining proficiency in drawing. This is written on the assumption that the students are required to spend many hours in attaining proficiency in drawing, after a degree of facility in grasping the principles, sufficient for ordinary purposes, has been acquired, which the writer believes to be true.

Not that skill in execution is not immensely valuable, but that it is so difficult of attainment and requires so much time that there are many men in school who believe that the results obtained, especially in the advanced work of the Middle year, do not warrant the expenditure of the time. The late William M. Hunt, of Boston, the great American painter, once said to one of his classes: "Any idiot who could learn to write, could learn to draw. Not to draw well, because that seems to me to require more skill than anything else in the world." After reading such a statement from a man who made drawing his profession, it seems reasonable that certain students, after an honest trial, should deplore a regulation that requires them to spend a number of hours a week trying to draw well.

The opinion of Mr. Hunt is quoted because it shows that there is a distinction that ought to be respected between learning to draw and trying to draw well. The argument is, that a knowledge of the principles is essential and ought to be carefully studied, but that good drawing is impossible for
everybody and therefore that a man ought not to be required to go so far with the subject if he decides, after a fair trial, that it is too much for him. There is another way of looking at the subject, however, that seems worthy of consideration. The time taken at the Institute to accomplish what is required by the course is admitted to be short. Now, when a student graduates from this school, he must either give up further study in most of the subjects taken, or take a special course in a similar institution. The subject is peculiar, because schools equipped to educate men in the direction peculiar to this school are comparatively modern and therefore rare.

Not so with free-hand drawing. Good instruction in drawing can be obtained in almost any city, and you do not find the graduates of this school locating many miles from the cities. The subject is peculiar also, in that it can be taken up and dropped again at any time, and the materials for work are generally at hand, whereas if a graduate who had gone, say to Seattle, Washington, should want to take up free-hand drawing, he must consider the question. As it is, as the case might be, where would he get it? The point intended to be seen is, that, although the more drawing a man gets, the better equipped he is, he can better afford to postpone the subject for a time than he can to lose altogether advanced research in the subjects mentioned above.

The fact that one of the classes is at present discussing the advisability of asking the Faculty to transfer two hours a week from free-hand to mechanical drawing shows that some man besides the writer has considered the subject, which the correspondent seemed inclined to doubt. Finally, the writer would be glad to be convinced that he is entirely wrong, but just at present he is laboring under the impression that there are some men who could be better employed than in showing how scientifically they can loaf through the last year of free-hand drawing.

[Note by Ed. Mr. Earle's suggestion in his letter published last month, that articles "attacking any method of instruction in use at the Institute be published over the author's name," seems to impute wrong motives to writers of anonymous articles in these columns and we are quite sure that the gentleman must be laboring under a misapprehension. All unsigned matter that appears in the W P I is the work of the Board of Editors and reference can be made to a small list of names which is printed each month at the head of the first column by anyone who thinks that fear stalks back and forth through the sanctum and controls the destiny of the editorial paste-pot and inkwell. Right there at headquarters, if you please, may be presented any complaints arising from the authorship of articles. The W P I isn't accustomed to lurking in ambush and attempting the stab-in-the-dark act. If it has any opinions to express, it is ready to back them up in broad daylight, every time.]

Another Writer Misses the Point at Issue.

To the Editor of the W P I:

Dear Sir,—I noticed with considerable surprise the article in your November issue regarding free-hand drawing at the Institute and, in the January number, I see Mr. Chas. A. Earle, '82, replies favoring the study, but rather gives his attention to jumping on the author of the piece in question, than in demonstrating why free-hand drawing is deserving of the prominence given to it.

The idea, according to my understanding, is, not to develop the students into artists, but to give them a knowledge of form that will enable them to picture to themselves the appearance of any machine or structure from a glance at the detailed drawings; and furthermore, in designing any work, to enable them to imagine just how it will look when finished, as it is obvious that in making any mechanical drawing, not a copy, the draughtsman must have a mental conception of what it is to look like or he could not make a section or plan of it. This character of knowledge in drawing does not at all call for proficiency in making pictures but is really indispensable to the scientific man.

In the course at the Institute the geometrical studies are very prominent. In analytical and descriptive geometry, and in mechanics, problems are constantly occurring in which one must have a mental conception of imaginary things, if I could so call it, as, for instance, a cone intersected by a cylinder. It is shown by the two projections on paper, but how very much simpler for the student to conceive of it and work with it from an
accurate mental view of its appearance, than if he could not picture it to himself.

And, again, many of the graduates will probably have men working under them in the future, to whose understanding a rough little sketch made in their presence will show far clearer the meaning of some detail of their work than could an hour's oral exposition of the point. The ability to thus mentally depict or roughly sketch anything under consideration would be of very great value—money value—for it would save many blunders and much lost time. To those who have a real talent for drawing, it is needless to say that the ability to make good sketches or drawings gives a satisfaction almost unequalled by any other power.

Thus, although I grant that it may, on the face, look like wasting time to spend six or eight hours a week in free-hand drawing [and probably is with some students who occupy the hours in horse play, as I have known students to do] I think it will be obvious that it is almost, if not quite, as necessary to an engineer as is the study of mechanical drawing.

Respectfully yours,
CHESTER B. ALBREE, '84.

Allegheny, Pa.,
January 22, 1890.

EVENTS OF PERSONAL CONCERN.

Minor Happenings in which Graduates and Undergraduates of the Tech Figure Prominently.

Lee Russell has returned and is enrolled with '90.

R. S. Parks, '92, has returned after a month's illness.

F. M. Ramsdell, ex '92, has entered the Prep class of '93.

T. T. Allard, with '90 until last June, has returned and is continuing with '91.

Philip W. Southgate, '89, is an examiner in the Patent Office at Washington.

J. P. Coughlin, formerly of '91, has returned and joined '93's Apprentice class.

H. E. Rice, '88, is now at the Quinigemond mill of the Washburn & Moen Mfg. Co.

F. H. Brophy, '89, is chemist for the Nashua Iron and Steel Works, Nashua, N. H.

Garnett Andrews, jr., formerly of '92, has a position in the City Bank of Chattanooga, Tenn.

George W. Jordan, for a long time connected with the Washburn Shops, has resigned.

W. F. Brooks, '86, is with the Oregon Pacific R. R. His address is Corvallis, Oregon.

W. O. Emery, '85, continues his duties as assistant to Prof. Kekule, Bonn am Rhein, Germany.

E. H. Carroll has accepted a position as draughtsman with the Holyoke Machine Co. of this city.

Guido F. H. von Wrede, '88, is at his home in Antwerp, Belgium, convalescing from a recent illness.

John Q. Barlow, '82, is division engineer of the Union Pacific railway, with headquarters at Milford, Utah.

A. S. Cushman, '88, is now assistant superintendent of the Michael Breen Mining and Milling Co. of Ouray, Colorado.

F. W. Morse, '87, has been appointed professor of chemistry at the New Hampshire Agricultural College, Hanover.

George M. Warren, '88, is supervisor of mechanical drawing and manual training in the High School at Wilmington, Del.

Kotaro M. Shimomura, '88, is in Kyoto, Japan, as professor of chemistry in the Harris Scientific School of Doshisha College.

W. B. Jewett, '88, has a position as assistant engineer with the New York and New England R. R., with headquarters at Boston.


Charles L. Griffin, '88, in the employ of the Brown & Sharpe Mfg. Co. of Providence, was in Worcester, February 1st, for a short stay.

Otis A. Freeman, a graduate of the Worcester High School, class of '81, and of Brown University, '86, is instructing the Preps in French.

F. L. Sessions, '89, began draughting, Feb. 1st, for the Fort Wayne Electric Co. With Hadley and Smyth at the same place, '89 is well represented.
Charles B. Murray, '87, was married January 29, to Miss Ellen Lincoln Robinson of Attleboro Falls, at the latter place. A wedding trip will end at Joliet, Illinois, their future home.


Worcester Tech graduates constitute four of the ten members of the faculty of the St. Paul Manual Training School. Harry B. Sawyer, '86, is instructor in science, Frank K. Rogers, '85, instructor in woodwork, Albert A. Gordon, '86, instructor in mathematics and Eli Pickwick, jr., '89, assistant instructor in woodwork. The object of the school is to train boys in those branches of knowledge which are most intimately connected with active business. Its purpose is not to teach a trade but the fundamental principles of many trades. It aims especially to give a boy practical knowledge of things, familiarizing him with the use of tools, helping him to acquire habits of order, neatness and accuracy and accustoming him to attention, industry and perseverance.

At a recent public installation of the newly elected officers of Miantonomo Tribe of Red Men, of Lowell, F. E. Appleton, '74, was installed as Sachem. The installation was public and a good-sized audience witnessed the ceremonies, which were quite impressive, the Lowell Mail says. After the installation about forty members of the tribe, with the visiting guests, repaired to Page & Nunn's where a sumptuous repast was enjoyed. When the bill of fare had been digested at length, Sachem Appleton called to order and introduced Alexander Adams, who made a brief address. Past Sachem Nichols of the Lynn Bee and several other guests and prominent members of the tribe responded to the call of the Sachem and an hour or more was spent in a very enjoyable manner. It was after midnight when the party dispersed.

The school catalogue will appear in two or three weeks announcing a few changes in some of the departments.

Ninety-One's Supper.

Feasting, Speaking, Music and Half-Way
Through Hilarity at the Bay State House.

It is an established custom for every class at the Tech to celebrate its arrival at the half-way-through point by a rousing banquet, and usually this half-way supper is one of the most enjoyable events which occur during the school course. This was no exception with Ninety-One and every man of the class who attended the supper at the Bay State House three weeks ago last Tuesday was convinced that what there is left of the class is of a pretty good kind. All but three of the thirty-five members were present, Phelps, Atkins and O'Regan being kept away by circumstances wholly unavoidable. This left thirty-two men of the class and, with Messrs. Frank H. Metcalf, Walter Hastings, Fred R. Dawson and Carroll S. Dunphe, former '91 members, a jolly party of thirty-six was seated at the tables. While the supper was being disposed of, the time between courses was occupied by singing various songs which have become popular by continued use. Poor Dan McGinity was sent down several times, but the song which seemed to be received with the most enthusiasm was the one ending with the familiar phrase, "Way down in the bottomless pit."

After the supper Toastmaster Kinsley began the speaking. As he said, the first speech was a trio for stringed instruments, and here the musical lights of the class appeared. The trio consisted of Bradford with the banjo, Taylor with the guitar and Dunbar with the mandolin, and they gave some excellent music. All their selections were very pleasing and they played several during the evening. The rest of the speaking was of a somewhat varied nature and some of the hits and recollections of the speakers resulted in great applause. When anyone asked who George Washington was, he generally found out. It is said that a man in the billiard hall below made five dollars just on this account. He was just shooting at the decisive ball in a match game of pool when someone asked about George, and the answer jarred the ball in just as it was stopping about an inch from the pocket.

After the supper the tables were cleared and Tracy succeeded in getting an excellent
negative of the class by flash-light. His pictures make a fine souvenir of the occasion. The remainder of the evening and the first part of the early morning was spent in card playing, singing and like amusements. "Zow" got lost once but was soon found at the piano playing "McIntyre" against time with his hat tipped back on his ears. The policeman on the beat probably thought that what was referred to as the oft-repeated question: "What’s the matter with ‘Zow’?" rang out. The answer seemed to be: "‘Zow’s got a hat on!’" But the policeman didn’t understand the joke. The whole evening was much enjoyed by all and the small hours of the morning were beginning to assume quite respectable proportions when the Bay State House dining-room was left for good. On the way home some excellent cheering was done which gave ’91 some much needed practice in this respect.

The menu cards were of special excellence. The drawing was executed by a member of the class and the designs were very appropriate for the occasion. In future years when the members of ’91 see them, there will be brought to mind one of the most enjoyable evenings of Tech life.

THIRTY-NINE PREPS.

The Largest Apprentice Class on Record Admitted to the Institute.

The Tech can now accommodate all who apply for admission and the result was, at the recent entrance examinations, that 41 out of 48 candidates were admitted. The places in the wood-room are no longer filled by competition. All who reach the required standard will be admitted. A year ago there were 70 applicants, 40 of whom were admitted.

Of the 41 candidates admitted this year, two will not enter the school until the fall term. The remaining 39 constitute the Apprentice class of ’98. Nineteen of these come from the Worcester High School which, as usual, had excellent success in getting its students admitted. Both the scholarships available were obtained by Worcester boys. The out-of-town Preps hail from Butte City, Montana; Schuylerville, N. Y.; Derby and Portsmouth, N. H.; Danville and Willimantic, Conn.; Holliston, Southville, Leicester, Fitchburg, Spencer, Clinton, Gardner, West Upton, Holden and Springfield, Mass. The oldest man is 24, and the youngest boy 17, years of age. For some strange and unaccountable reason, there is no one in the class by the name of Smith.

In a newspaper communication, President Fuller says: "It should not be inferred that because the enlarged facilities at the Institute permit the accommodation of greater numbers, therefore the standard of admission is lowered or will be lowered. As a fact the average rank of the candidates this year was much higher than usual. Forty-one have been admitted to the Apprentice class. Two of these entered on certificate, one from Cornell and one from the Massachusetts Institute of Technology. One other had entered an earlier class, but left on account of illness, and so was not re-examined. Of the remaining 35, 29 had a rank of 70 or over on a maximum scale of 100, both a larger proportion and also a larger absolute number than has before attained this standard. * * * One cause of the improvement in the attainments of the applicants has undoubtedly been the new requirement of the Trustees, by which scholarly standing is one of the factors in the selection of scholarships. This diminished the number of poorly fitted applicants. This year, however, the prevailing epidemic hindered some from presenting themselves, and others were advised to wait. * * * No class before has come from the High School so well prepared as this last. It is, moreover, very markedly apparent from the examinations of the years past that the applicants for admission to the Institute who are prepared by schools whose teachers are permanent generally succeed in gaining admission, while those fitted in schools where instructors often change, very frequently, and, I might say, very largely, fail. * * * That the limitations of free tuition in the county should have so slightly diminished the number of applicants, and apparently have not diminished at all the number well fitted to enter, is a fact that must stand to the credit of the Institute. That not one of the disappointed applicants for scholarship among those just admitted failed to report to-day shows, moreover, a very marked recognition and appreciation of the valuable training given at the school."
IN AUSTRALIAN WILDS.

A Tech Graduate Toy- ing with Kangaroos, Alligators, Serpents, and Marsupial Bears.

Nathan A. Cobb, '81, who, a little more than a year ago, took the degree of Ph. D. at the University of Jena, Germany, and afterwards spent some months in biological work at the Geological Museum in Naples, is now with his family in Australia, where he has been appointed lecturer on biology in Sydney University. During his vacations Dr. Cobb has been actively engaged in gathering materials in Australia for research work.

In a recent letter to one of the professors at the Tech he speaks of collecting kangaroos, alligators, iguanodonis, serpents, marsupial bears and a great variety of animals and plants belonging to entirely different orders from those found in France or Europe. The adventurous character of his excursions is shown by the fact that men, while fording streams, are sometimes pulled from their horses and given a term of servitude in the interior of some modest and unassuming alligator. After one such instance, an alligator killed in the neighborhood was found, upon investigation, to have in his stomach the boots of the poor unfortunate who had gone before. Men sleeping at night near streams have been seized and dragged into eternity. Dr. Cobb tells of two men who, wrapped up in blankets, were sleeping side by side on the ground. One of these men, together with his blanket, was seized by an alligator in such a manner as to be utterly unable to resist transportation, while his companion clung to the precious mouthful and endeavored to persuade the creature that he was out of order. The timely arrival of a native who sent a bullet down the throat of the monster saved the lives of both, although the man who endeavored to rescue his companion was injured and exhausted to such an extent that he had to be taken to the hospital, where he was obliged to remain three months. It sounds like fiction to read such articles as this, and many of us are apt to think how enjoyable it would be to spend our life in a land so full of excitement and adventure, but when we consider that these statements are real truths, we feel that we are quite content to live in our own quiet and peaceful Massachusetts.

Dr. Cobb expects to return to America in about a year.

SENIOR CLASS APPOINTMENTS.

Ninety Preparing Early for the Class-day and Commencement Exercises.

The Senior class has held two meetings during the past month and is now thoroughly organized and ready for the perplexing details connected with class-day and commencement. All the appointments have been assigned except the valedictory. The toastmaster of the farewell banquet, also, has not yet been chosen.

At the first meeting, held Jan. 28, officers were elected as follows: President, Francis W. Treadway; vice-president, Everett J. Lake; secretary, Alton L. Smith; treasurer, Harrison P. Wires; executive committee, President Treadway [chairman], Windsor T. White, Loring N. Farnum, Clarence K. Prince and Elmer C. Rice. The report of the class-book committee, recommending that no book be published this year, was accepted. The matter of a class souvenir, for private distribution among friends of the class, was talked up and the details left with the executive committee.

At the second meeting a recommendation of the executive committee that a souvenir be published was adopted and the general scope of its contents decided upon. It will contain simply the class-day papers and orations and matter of that nature, together with such illustrations as the printing committee may decide upon. This printing committee is to be appointed by the executive committee of the class. At this meeting, F. H. Rice of this city was chosen class photographer. It was voted to levy a monthly assessment to meet expenses. In regard to the class-day appointments, a departure from the usual custom of graduating classes was made. The prophecy and prophet's prophecy were dropped from the list and a new appointment, that of tree orator, created. The following appointments were made: Class orator, Elmer C. Rice; tree orator, James H. Devlin; statistician, Clarence K. Prince. The historian, Harry P. Davis, was elected a year ago. It was voted to fill the office of class poet by competition, to close May 1.
The Faculty have not yet taken action concerning the assignment of the valedictory. This office will probably be filled within a few weeks.

N. E. I. A.A. CONVENTION.

University of Vermont Admitted to Membership—Worcester Chosen for Place of Meeting.

The annual convention of the New England Intercollegiate Athletic Association was held last Saturday at the Quincy House, Boston. The Tech was represented by White, '90, Dadmun, '91 and Rice, '90. Officers were elected as follows: President, Sam Sparhawk, Dartmouth; first vice-president, E. McP. McCook, Trinity; second vice-president, C. L. A. Heiser, Brown; secretary, E. C. Rice, Worcester; treasurer, T. L. Peters, Williams; executive committee, F. B. Walker, Amherst; C. A. Meeder, Brown; W. T. Carlton, Dartmouth; T. Thurston, Trinity; H. B. Slayback, Wesleyan; G. A. Mason, William; H. L. Dadmun, Worcester. The University of Vermont, of Burlington, was admitted to the association. Its representative on the executive committee will be C. W. Backham. Amendments to the constitution were adopted to the effect that no changes in the list of events can be made without three weeks notice before the annual convention and that no further amendments can be made without four weeks' notice. Worcester was chosen for the place of the spring field-day and the date of Wednesday, May 28, fixed upon for the time. It was voted that the rules of the L. A. W. govern the bicycle races. The secretary was instructed to apply to the Amateur Athletic Union for the recognition of the association. The question of the validity of the 220-yard dash and hurdle races was left to the president and executive committee.

CAMERA CLUB ELECTION.

Officers for the ensuing Term—Public Exhibition of Pictures Promised.

The Camera Club held a meeting Saturday, February 1, in Room 6 of Boynton Hall and elected the following officers, who serve until June: President, L. E. Booth, '90; vice-president, H. H. Tracy, '91; secre-
tary, C. A. Davis, '91; treasurer, H. P. Wires, '90; keeper, A. P. Smith, '90; executive committee, the president, ex-officio, J. P. Anderson, '90; H. Sinclair, '93; H. P. Davis, '90; H. P. Crosby, '90. It was voted to hold an exhibition of photographs, made by members of the club, the arrangements being left with A. P. Smith and H. H. Tracy. The club has at present twenty-five members with prospects of doubling the membership this half. No better chance to learn amateur photography is offered than the free use of the club's dark-room and chemicals and the advice and aid of its members. The Prep who wishes to construct a camera for himself will be greatly assisted by Mr. Tracy's new book, "How to Make a Camera for $3.00," and by pointers from other members.

WORK AT THE SHOP.

Twist Drill Grinders Still in Great Demand—Wood-workers Busy on Drawing Stands.

Twist drill grinders are still in great demand but the work on ordinary grinders is not so rushing as usual. There is plenty of elevator work on hand and three have just been shipped to Lynn to go into new buildings which are being erected in the burned district. There is an order for a freight elevator to go to Holyoke, and two others for Providence firms. Several of these are extra long run elevators.

The dynamos have been finished and a belt testing machine for the mechanical laboratory is being built.

In the wood-room the men are busy on an order for fifteen drawing stands.

This work, and numerous orders which can be filled from stock, keep business at the shop lively as usual.

BAY STATE HOUSE.

Under the new management this Hotel has been thoroughly reorganized and will be conducted on a

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In every particular. We solicit a trial of our hospitality.

DOUGLASS & BROWN, Proprietors.
TECHNICALITIES.

NOTICE TO SUBSCRIBERS—Many subscriptions to the W P I. the bills extending as far back as the year 1888, still remain unpaid. This is undoubtedly an oversight, for every subscriber has received a bill showing how much he is indebted to the paper. The Business Manager would urgently request that these subscriptions be paid immediately.

A free copy of this month's issue of the W P I. is sent to every member of the Apprentice class. Each man will be considered a regular subscriber from this time on provided he does not notify the Business Manager to the contrary. The subscription price is $1.00 a year.

Four extra pages this month. Just our luck! Washington's birthday comes on Saturday, this year.

What a noise [pardon, musical sound] we do make in chapel since the Preps arrived!

The Pol Econ Club is still in existence and apparently thrives without any visible means of support.

A new mineral has been discovered by a Middler. It is "oligobite" and a general laugh goes with it.

This startling fact has just come to light: that the tower clock used to strike forty-four about chapel time every morning.

A time-honored but much-abused privilege has been withdrawn, viz., the reception to students in the monitors' room at the end of every recitation.

The next issue of the W P I. closes volume five and is the last under the present management. With the April number representatives of '91 assume control.

Let's take up a collection for a new organ. The old one may then be taken to the new building, where the chemists can use it in their frequent entertainments.

Cat raising is a new branch of industry that has been started at the Washburn Shops. A sample of the breed can be seen by applying at the blacksmith shop.

New excuse for tardiness: "My hat blew off" as I was coming from the Salisbury Laboratories, and did not stop until it had reached the stone wall on Boynton street.

That examination in Senior physics came very near being expensive for the Institute, for there was a narrow escape of several students from becoming grafted to the chairs.

The picture taken by flash-light of the class of '91 during the half-way through ordeal seems to show that most of them were too weary to try to get completely through.

The proposed public exhibition of the Camera Club will furnish a good reason for our young lady friends to visit the Tech, and we trust that such a chance will not be overlooked.

To let—Three full dress suits until July 1st, 1890. Owners have no use for them, having turned grinds. Can be had dirt cheap. Apply to —— '90, —— '90, and —— '90.

"Big head" seems to be a common malady in the Prep class. A Prep was seen in the wood-room, the other day, just after he had overturned the glue-pot. He was stuck on himself.

Middlers will learn by-and-by not to have cartoons of professors on their menu card of the half-way banquet which occurs about examination time and generally before the marks are made out.

The quality of the towels thus far furnished by the Preps has been very good and if they are regularly replaced by clean ones each week, the mechanics in the upper classes will find no fault.

All those who are not good swimmers ought to perfect themselves in the art immediately, for, if the water at the foot of Tech hill rises much higher, they will find a little knowledge of it very useful.

Ninety-One has elected as class officers: President, Herbert A. Warren; vice-president, Edmund P. Power; secretary, George W. Booth; treasurer, Edwin S. Phelps; athletic director, Edwin A. Taylor.

The city papers of Jan. 23 announced a gift to the Institute of $5,000 from Mr. Nathaniel Thayer of Lancaster. It is to be called the "Thayer Fund" and the income only is to be expended, in such manner as the donor may indicate.

Some of the Seniors, having heard that Nellie Bly is about to start out on a lect-

[Continued on page 224,]
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Stop a moment and consider.

Whom do you see, at any hour of the day, interested observers of all that is here?
Is it any one special portion of our community?
Not at all, for you will find the whole world of Worcester represented at our various departments during the hours between 8 in the morning and 6 at night.

The lady who controls unlimited means can find here what exactly suits her, and therefore she comes here.

The lady who has exquisite taste, and yet must needs be careful of expenditure, finds here exactly what she wants—therefore you find her here.

The wives of the men who work day in and day out for the comforts that are in their homes, the men who make Worcester what she is, the men whose wives seek with admirable and commendable care for things of use and beauty within their means, find what exactly suits them—therefore they are here.

Everybody comes here.

We are very close to the people these days.
We will grow closer still every day this year, with a greater and constantly changing variety of what every lady wants.

With goods made for ladies.
With goods made for service.
With goods that have a character.

With goods at prices that you can pay and be sure that every cent has brought you its full equivalent.

Yesterday came into our store some new American Chailles, full 36 inches, in the very nicest of dress styles, 12½c. a yard.

If there is a lady in the whole city of Worcester who will fail to find something pretty enough to entirely please her, then we don't know the goods our ladies like.

Look at them and see if it is not so.
While we are on this question of low priced dress goods, let's tell you again of the Chaille Beiges at 5c.

These Beiges are about the only awfully low priced dress goods we ever saw that were worth your buying.

One thing is certain, they are the best very low priced dress goods we ever saw.

The patterns are like the best of the all wool goods. Really, they are good for the little asked for them.

Have we forgotten the Gingham? Oh, no! not at all.

Our Gingham have won their way into your affections. Our glorious window exhibit has told its own story.

You cannot know what Gingham really are until you see the lavish display we make for you.

The lace department offers new this morning a new and unusually pretty Van-dyke collar for children, 50c. to $1.75.

Seventy-five Madras Tidies out of 30 dozen left. They are great at 25c.

A few new patterns in embroidered flannels, 87½c. to $1.50, may be of interest to you.

The new Hamburgs, opened Thursday at 12½c. and 25c., were sufficient to hold your interest in the greatest Hamburger sale in 40 years. You can still be pleased and delighted with the lovely goods at low prices.

If you want to get the most for your money in dainty Underskirt, take our advice and select the one at $1.37½.

If you want ANYTHING, see if we have it—if so, you can depend upon it.

We have everything in dry goods for every lady.
We are close to the people.

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uring tour, propose to star as lecturers after graduation. They would find more remunerative employment as the "terrible examples" for anti-manual-training speakers.

There may be lots of poetry in a shady, up-hill path when you can tread it in mid-summer, but when you have to climb twice a day for a very definite purpose through the six inches of mud which constitute the ascent up Tech hill, then the poetry vanishes.

The man who steals the pictures from the photographic publications in the library will have his goose cooked for him by the Camera Club if he does not refrain from his evil practice. Only regard for his instructors prevent them from blasting his reputation by immediate publicity.

A popular professor at Salisbury now furnishes jokes, ready-made in the class-room, for the WPI. In the latest side-splitter a hen walks to the middle point of a wrought-iron beam and lays an egg, thus producing permanent set. Everybody laughs except ye editor and he doesn't laugh because the laugh is on him.

The Senior mechanics are now being initiated into the secrets of the mechanical laboratory and boiler-room, where they take great pleasure in making cartoons of apparatus. Free-hand drawing comes right into play, so we would advise Middlers and Juniors to live up to their high privileges and make the most of their opportunities.

By the counting in of the Republican contestant from West Virginia there is now one member of Congress named Smith. It is a little remarkable that, among the 329 representatives and eighty-four senators, he is the only man bearing that somewhat familiar name. The Smiths are now vindicated.—[Boston Herald.] We congratulate our many friends by the name of Smith at the Tech. The vindication is rather slow in getting here but it has arrived notwithstanding.

The electric observatory near the entrance to the grounds seems to have fallen into a state of desuetude. The dark corners of its entrance frequently furnish concealment on dark evenings to lads and maidens, or, perhaps, more correctly, lad and maiden, but ever since the time that the horizontal component of the earth's magnetism became frightened by the passing of a crowd of students with iron nails in their shoes, and flew out of the window, the place has been looked upon with more or less suspicion and doubtless it will soon gain the reputation of being haunted.

The Seniors are laughing about one of their number who had quite an experience with an excuse book. He was absent at mechanics one day through a misapprehension. It was the first time in the whole course that he was called upon to enter an excuse: he had never been absent or tardy before. He entered his excuse in the regulation manner, but made a bad break and signed his name at the end where the professor's signature is placed. It is thought that many others will now fall in line and sign their own excuses. This plan has many advantages over the old method.

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