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Students of Worcester Technical Institute

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"How various his employments whom the world
Calls idle, and who justly in return
Esteems that busy world an idler too!"—Cowper.

For the thirty-ninth time that voracious monster, the semi-annual examination, has had us in his grasp. For the thirty-ninth time he has sorted out his victims, retained those that best suited his taste, and branded the rest with deep scars from his scorching fingers. We have to regret the loss of a few men from our ranks, and with several others we have to sympathize in their added burden of one or more conditions. As the reports are read we hear the customary murmurs of discontent on every side. Again we are brought face to face with the clearly apparent evil working of the present marking system. Men, who in the judgment of their classmates should be in the first half of the class, find themselves without apparent reason thrust far down toward the end. Others, in whom the special merit assigned them seems to be almost wholly lacking, calmly survey their less fortunate classmates from a comparatively exalted position. In many instances it is an undeniable fact that the most rank injustice has been shown. The system of giving a personal mark may have its advantages, but its disadvantages are so overpowering that we have never yet found any evidence in its favor. The unlimited power given to the instructor to influence the average mark of the student has tempted many a professor to favoritism in its most extreme form. Perhaps this may have been acquired unconsciously. If so, then so much the worse for the system which caused it. What worse incentive for future effort than for a man to find his professor's favorite with a rank that he scarcely even dared think of, while he, almost in disgrace, makes way for the fortunate one, and is pushed to the rear. Cannot such evils in some way be eradicated? The system at Amherst seems to work to the satisfaction of the majority of the students, as does that in use at Harvard. We admit that it is a difficult problem to properly estimate a
student's ability, and give him a mark which will correctly represent it, but let us approach as nearly as possible to that end. Better to leave the matter in a more indefinite form, and merely establish the limits between which the student can be placed, than to so compare one student with another that the one will be exalted far above a fair estimate of his ability, and the other be made so conscious of his insignificance that his ambition is entirely checked. It is an easy matter to end up a discussion on this subject by saying that marks are nothing, and that we should pay little attention to their import. We could say most heartily "Boys, never mind the marks; you'll get there just the same," but human nature is human nature, and every man, if he has a mark to work for, will work for it more or less, and will be disappointed if he does not attain his end. Now take away the mark, give us nothing to strive for but to get the most we can out of our college life, and we dare to prophesy with certainty a kind of harmony which is as yet unknown under the present system.

In connection with this subject we would beg leave to call attention to the first editorial in our last month's issue. If some of the unfortunate ones desire any consolation we trust they may gain a little by perusing it a second time.

Each member of the Apprentice class will receive a copy of the present issue of the WPI. Those wishing to continue their subscription are requested to hand the wherewithal at once to their editor, Mr. F. H. Metcalf.

Most brave and dauntless Preps, upholders of the banner of '91, we salute you. To you who have withstood the fiery ordeal of the entrance "exams," to you who have comprehensively reviewed the life of James G. Blaine, and who have located for all future time the capital of Japan, we extend our congratulations. You are living in the most progressive century the world has ever seen. Consequently, you find yourself entering the Tech at a period of activity which has never been equalled in its history. Make yourselves equal to the occasion, and be prepared to help sustain the reputation of the institution of which you now constitute a part. Long have we awaited your coming. Many are the estimates we have formed of your probable capabilities. In the short time which you have been with us we have surveyed your ranks, and we find nothing of particularly ill import in your appearance. With the aid of a field-glass we have discovered a microscopic specimen of a moustache, which is really something quite encouraging for a Prep class. Though this mark of manhood is an object to be sought for, do not let your ambition produce an unhealthy growth. Treasure up your best efforts for the Senior year. In athletics your outlook is promising. By all means, begin at once to practice the school yell, and then when Field-day comes you can join in and cheer with the other classes and gain some good practice. By the time you reach the end of the Junior year, you will be expected to cheer for your own class occasionally, and you can then do it in good shape. In proportion to your in-
terest in athletics will your popularity be established with the upper classes. If you have any base-ball talent do not hide it under a bushel, but bring it out where we can all see it and measure its dimensions. Remember that the rules of the wash-room will not work both ways. Never go so far as to subject yourself to rebuke for tampering with an upper-classman’s drawer. Never subject yourself to popular disapproval by paying any attention to depredations upon your own drawer by upper-classmen. No rules apply to this time-honored custom.

In conclusion we may say that your class is by far the best class that has entered the Tech this year, and it now lies in your power alone to make the class of ’91 an important factor or a nonentity in the annals of the Institute.

In the December number of the Forum there is a paper on “College Disturbances” by President Bartlett, which has attracted considerable attention on account of its able presentation of a certain phase of college life. To all that the author says concerning hazing and law-breaking as distinguished from playful pranks, every high-minded college man will agree. To his views on rushing, many will subscribe. But to his strictures on “college honor,” there will go up a grand howl in opposition. We suppose that this subject of “college honor” has been the most vexing problem of teachers ever since a company of students first came together, and it will probably continue to be a vexing problem as long as mankind is constituted as it now is. On most things educators are agreed, but their views on this subject, which lies at the foundation of all that is noble and true to the school-boy, are widely at variance. President Bartlett says: “In other communities it is the acknowledged rule that the whole population is banded together to detect and punish wrong-doing. In college communities the case is reversed, the combination is to prevent detection.” What is said about other communities is true only when sympathy and pity for the wrong-doer does not enter into the case. Let the community sympathize with the criminal and see how quickly they unite to shield him from punishment. The criminal of the outer world has sympathizing friends always, and they unite to protect him. Certainly President Bartlett will give his college criminal the privilege of having friends. The friendships formed in college are strong, and with this fact in mind it is just as illogical for one college man to betray another as it is for a thief to hand his brother thief over to justice, thieves’ honor being proverbial. The wide-spread aversion to “spotters” shows that the case in college does not differ materially from that outside, in spite of what President Bartlett would have us believe. The tell-tale is despised everywhere, and rightly.

It is with pleasure that we announce the election of the Worcester Polytechnic Institute to membership in the N. E. Intercollegiate Athletic Association. We also learn with no small degree of satisfaction that the Spring meeting of the Association is to be held in Worcester. We trust that our college friends will not be disappointed in Worcester hospitality.
THREE hundred years ago the experimental philosophy of to-day was unknown. The study of Euclid and Archimedes had indeed been renewed and considerable progress been made in Algebra. Guido, Urbaldi and Benedetti had established in some measure the principles of statics, but, with these exceptions, there had been no attempts at a systematic application of mathematical methods and reasoning to the phenomena of nature. The philosopher of those days was an observer. He made no experiments; he reasoned from law and principles considered as causes to natural phenomena as an effect of those causes, ignoring, or failing to perceive the truth, that the general cause upon which his attention was fixed might be only a single fact common to a great number of the phenomena, and that accurate scrutiny of the latter must precede any safe reasoning as to the former. Belief in the infallible demonstrations of mechanics was considered a degradation by philosophers, who preferred the evidence of their books to the evidence of their senses, and persisted in gravely maintaining that a weight of ten pounds would reach the earth in a tenth part of the time taken by one of a single pound, because they were able to quote the chapter and verse in which Aristotle assured them of the fact!

It was at such an era, that Galileo, studying medicine at the University of Pisa, listened one day outside the door behind which Ricci, the court mathematician of Florence, taught the pages of the Grand Duke a little Euclid. An eloquent commentary upon the scholastic privileges of that date is furnished by the fact that the young student continued to absorb his Euclid for two months through the key hole, and owed his introduction to Ricci, at the end of so arduous a novitiate, to chance.

Not long after, watching the swing of a lamp from the roof of the cathedral, and observing the times of its oscillation, he found that though the arc through which it swept diminished until scarcely visible, the time required from each extreme right hand point to the succeeding extreme left hand point was always the same. Before leaving the church he compared the vibrations with the beatings of his own pulse, and shortly after constructed an instrument for ascertaining its rate and variation from day to day. This instrument was rapidly adopted for use by physicians, and in it we find the first development of the idea which culminated in the later invention of the pendulum clock.

With Galileo the power of observation and of immediate application of such observation to some practical end went hand in hand. It was the secret of his greatness—he knew that science is measurement three centuries before Comte laid it down as the definition of mathematics. He not only knew it philosophically, but was able to give to the world splendid practical illustration of the principle on this point. Hume, comparing him with his great contemporary, Bacon, says, "Bacon pointed out at a distance the road to true philosophy; Galileo both pointed it out to others, and made himself considerable advances in it. The Englishman was ignorant of
Geometry; the Florentine revived the science, excelled in it, and was the first to apply it, together with experiment, to natural philosophy. The former rejected with the most positive disdain the system of Copernicus; the latter fortified it with new proofs derived both from reason and the senses.”

Measurements of space at that date were much more accurate than those of time. From his observation of the pendulum, Galileo completely established the laws of motion in ordinary small oscillations. He also investigated motion along a slope or inclined plane, and first showed that whatever the incline, the speed acquired by a body moving on it depends, not on the ground it has covered on the plane itself, but on the vertical drop between its starting point and its position at any moment. In solving the problem of falling bodies and of projectiles he anticipated the principles of the fluxional calculus. He laid down the principle covered by the ordinary maxim that what is gained in speed is lost in power, in other phrase, the Law of Virtual Velocities, and thus answered, once for all, the question,—Has the earth a common action on all bodies at its surface?

The discovery of the telescope in 1609, distracted Galileo’s attention, temporarily, from those broader mathematical inductions on which his great successors, Newton and Leibnitz, founded the system of the universe. In the minds of many, this is the principal, if not the sole, invention associated with his fame, and has cast into the shade his superior merit as the founder of a school of experimental philosophy. It has been said that it required far less genius to point a telescope to the heavens than to trace the unheeded, because daily recurring, phenomena of motion, up to their simple and primary laws. This is undoubtedly true, but in considering our debt to the great astronomer, we are to take into account his completed service to his age and to the world. We are to remember the entire series of indefatigable and minute observations which preceded and followed his later discoveries, and the courage through which, undismayed by censure and persecution, they were carried to completion.

When the eye which had penetrated to the satellites of Jupiter, and resolved the nebulae of the milky way, had leisure for the inductive reasoning which would have revealed to him the great secrets reserved for a later day, he was an old man.

His uncompromising boldness had united against him, not only the professors of old opinions who could not submit their pride to the new position which destroyed their reputation as teachers of science, but the still greater influence of the Jesuits and the pseudepiscopal party, who found in his writings a spirit and temper which they deemed dangerous to the authority of the church. But he came very near the great secret. He held the keys which unlocked the experimental sciences, keys to methods abstract in form, but constantly applied to concrete things. The debt we owe him is none the less, that to those who followed him we owe more.

Galileo’s life emphasizes another lesson also. It never occurred to him that in order to attain a given measure of
success, he must dwarf his intellectual
growth at any point.

He was not a mathematician, an in-
ventor, but a discoverer only. He was
a superior musician, an admirable writer,
a painter of genius and skill. At every
stage of his career he combated the des-
potism of ignorance, and appealed from
the judgment of tradition to that of rea-
son and common sense. Idolized by his
friends, he deserved their affection.
Alike benevolent and generous, he had
always an open hand, ready to advance
the talents and fortunes of those who
needed his care. The history of his
controversy with the Romish church is
not within the limits of the present dis-
cussion. It is enough to say that
through it all he deserved our sympathy,
our admiration, and our gratitude.

A GLIMPSE OF SUNNYSIDE.

I FIRST saw the home of Washington
Irving, April 4th, 1883, the morning
after the celebration at Tarrytown of the
one-hundredth anniversary of his birth.
Though my first visit was a short one, it
aroused in me sufficient interest in the
old estate, to make me improve early
opportunities of seeing Sunnyside more
at my leisure. Sarcely a pleasant
walk can be imagined, than by moon-
light on a summer evening from Irving-
ton, along Broadway and down Sunny-
side lane. The lane runs beside a noisy
brook, closely following its windings,
and it is by such a rustic path that we
are led to the confines of Sunnyside.
Irving’s old groom still occupies the
place, and almost any afternoon one may

see the old man walking to or from Irving-
ton. His form is bent but his walk
is brisk, and, with his long white hair
falling from under his tall silk hat, he
seems a well-preserved specimen of “ye
olden time.”

The house is built of coarse concrete,
which is now much worn by the long
continued action of the elements. It is
of antique Dutch architecture with steep
roofs and terraced gables, and is over-
grown with English ivy. The ivy was
brought from Melrose Abbey by a friend
of Irving, and was planted by the au-
thor’s own hand. Several of the stems
are nearly six inches in diameter. The
south door is sheltered by an arched
portico, and on either side is an iron
settle just wide enough for two. The
grounds are well shaded, yet from be-
neath the branches of the trees may be
had a fine view of the Hudson and the
hills on the western shore. I could im-
agine, as I drank in the beauty of the
scene, how Irving, as he sat on the
broad piazza, must have enjoyed watch-
ing the river in its varying moods, some-
times as it mirrored the white sails full
length in its glassy surface, or some-
times as it dashed with white-capped
fury on the shore. I could imagine,
too, how he must have been disturbed
when the railroad was projected. Once
the place was almost solitary in its
seclusion. Now, trains rush by hourly
within a few rods of the house. It is a
change indeed from the time when Ichab-
od Crane was pursued by the headless
horseman through Sleepy Hollow. It
is said that Sunnyside was the scene of
that evening’s merry-making from which
Ichabod so sadly departed. Nor is it
improbable, for it is surely, “a green sheltered nook on the banks of the Hudson” in which a quiet old farmer like Baltus Van Tassel might like to nestle. Also “hard by the house is a barn” with its queer little steep-roofed cupola, not “vast” as barns go now-a-days, but which might well “have served for a church.”

Upon a tablet above the south door of the mansion is this inscription in Dutch:

BUILT
A. D. 1656.

Repairs by
WASHINGTON IRVING,
A. D. 1835.

Geo. Harbey,
Master-builder.

This indicates an age of something more than two centuries and a quarter, and this in itself is enough to inspire a certain feeling of reverence for the place, even were it not for the charm which is thrown about it by association with the name of Irving.

Though anecdotes of the author of Rip Van Winkle are so common, yet I cannot forbear in closing to add the following little incident which serves to illustrate his genial humor in every day life. In conversation with a fellow officer of the church one day he remarked, “I have passed up and down these aisles holding out the contribution box every Sunday for so many years that it seems as if on meeting one of the brethren on the street I must stop him and say, ‘your money on your life!’”

AN EDITOR’S TROUBLES.

LAST December we made the acquaintance of a Sophomore of College who had returned home to enjoy the holidays. He appeared so worn and emaciated that we instinctively reasoned that he had over-trained in the football season, or had just left the hospital after a long siege with broken limbs, or something of that sort. So we remarked, as a starter, that “he had been rather unlucky in his position as half-back, this year.”

“Oh, I haven’t been playing football,” he said.

“No? Perhaps, then, he was in the cane rush?”

“Wrong again,” he replied, “neither have I been waylaid by tough Freshmen, or arrested for stealing signs, or been licked by a pretty girl’s brother. To tell the plain truth, I’ve been ‘running’ a college paper,” and he sighed as if the remembrance overcame him.

We couldn’t see why that should affect him so dismally.

“Well,” said he, “you haven’t the slightest idea of the responsibilities connected with that position. The trouble commenced last September, when, in an unguarded moment, I accepted the office of editor-in-chief for the ensuing year. The paper was a weekly, and it seemed as if the first number could never be filled with news. Finally I got it out about three days late. I flattered myself that the paper was unsurpassed among college journals. I soon changed my views, however. Twenty-four hours after publication a wild-eyed Senior came into the sanctum,
locked the door and remarked, ominously,

"You remember that item on the fourth page, second column, six lines down?"

"Yes."

"That item about Stobbs, '88 and his girl."

"Certainly. True, isn't it?"

"True, you libellous old villain, I'll show you whether it is true or not,' and then he assaulted me with a stove-leg for the space of two or three minutes. While I was gathering the remains together and calculating the damage done the furniture, three Juniors entered and playfully kicked me under the table. I afterwards found out that a 'personal' had displeased them. From various other sources, too painful to mention, I learned that my management of the paper had not met with popular approval. In short, I concluded to resign. My friends heard of my determination and scoffed at the idea. 'I ought not to mind little things like that,' they said. Finally I consented to try it a while longer.

"Before the second number was issued I was made aware that editorial boards and associate editors are of no earthly consequence. The only literary work they did from week to week was to consume the chief's Havanas and choice Turkish tobacco. This rather annoyed me at first, but I became accustomed to it, and the annoyance gradually wore off.

"In the second number we published an account of the cane-rush, in which the Sophomores, luckily, were victorious. The following week I kicked down the back stairs seven Freshmen who came to demand 'retractions.'

"After this episode the outlook seemed brighter. My blood was up, and I was determined to take no further insults from enraged subscribers. About the middle of October, I wrote quite a long criticism of the 'varsity eleven, which I thought would be appreciated. It was. That night the centre-rusher (weight 250 pounds) came up to my room, and kindly showed me his appreciation. The paper was edited by a substitute that week.

"About that time the exchanges began to arrive. I had fondly imagined that they would laud the —— Weekly and its editor to the skies. With this thought in mind it was anything but edifying to read:

"'The —— Weekly is a disgrace to the college from which it emanates. It is a sad commentary on a university situated in a license town.'"

"Or, again—

"'The editor of the —— Weekly, in his lucid moments, complains that we do not have enough literary matter to suit his tastes. Our readers would object if we reprinted Mother Goose stories and Æsop fables.'"

"Most of the remarks concerning the Weekly were of similar tenor. The only complimentary notice we received was from a Kentucy editor who discovered that our cover could be used as a 'Fox and Geese' board. From that time on we were deluged with infant periodicals desiring to 'exchange.'

"About three times a week some well-meaning but misguided friend would offer unsolicited advice concerning the management of the paper. One wanted more locals, another more short stories,
one thought the press-work could be improved, another yearned for editorials. I foolishly tried to follow some of the suggestions. As a result, the complaints came in faster than ever.

"The climax came the first of December. Up to that time I had been called before the faculty five times for rash statements in the paper. They warned me that a sixth offence would result in suspension. On that day the business manager happened into the printing office and was informed by the foreman that copy was short,—a single line to start off the local column was wanted. The paper was to go to press immediately and it was too late to notify the editor-in-chief. So the business manager sat down and after incredible labor ground out this:

'Prexy's whiskers are leaking.'

"On the morrow I received a polite note requesting my withdrawal from college until February 1st. The week following I spent in the hospital, recuperating. Yes, editing a college paper is great fun,—for everybody but the editor."

AN ENGINEER'S STORY.

UPON a recent railroad trip I fell in with a distinguished mechanical engineer, with whom I had a slight acquaintance. There chanced to be in front of us a recently married couple who were making themselves quite prominent after the customary manner, and my friend could not refrain from giving me a little of his early experience in that line. Following is his story in the characteristic language in which he gave it:

"I had been at work a long time for my father without any rest, and, seeing that I needed a little relaxation, he offered to let me visit a country uncle of mine for a few weeks. As no reference was made to a cut-off in my wages, I concluded to accept his offer, and expand my chest for a time in the pure air of the country clearance. I did not have much of a load to carry, so I spent little time stuffing boxes, but, packing a thick jacket and a little clothing into a trunk, I was soon on my way. I met a friend on the train who acted as a guide, and whose agreeable conversation lubricated my otherwise tedious journey. In due time I arrived at my destination, which I found was decidedly a dead-center. Though I was quite exhausted, and felt as if I were working on a vacuum, I oiled up my bearings and soon found my uncle's residence. My uncle, by the way, was rather eccentric, in fact he was somewhat of a crank. His wife, too, was quite a cross-head, and occasionally it would become impossible to "gauge her pressure, as a result of which she would blow off steam at such a rate that her husband would have to draw her fires for fear of an explosion. However, after I had taken a few moments to get acquainted with them, I found them quite a pleasant old couple. The rest of the family consisted of a daughter, whose "port was so dignified that I could not drum up courage to speak to her at first, and a hired man whose frame indicated power, but whose shambling gait reminded me of an old, worn-out link-motion.

As I failed to find much to interest me in the country journals, on my first
evening I retired at an early hour. I was aroused the next morning by my uncle's foot-pounds on the door. A quick start on my part had a rotary effect on a large brass ornament which was insecurely held at the top of the bedstead, and, had not a pillow-blocked its course, serious damage might have been done. I found my cousin Delta already up, and upon screwing up my courage I made myself more familiar with her, so that by the time breakfast was over my awkwardness had vanished. During the morning a note came directed to Miss Delta E. Smith which proved to be an invitation to a dance given by an ex-governor of the place. As these Governor balls were quite the thing, of course we attended. It was there that I met Miss Adia Batic. All that evening my spirits were at a high pressure. Talk about triple expansions, I expanded myself to such a degree that the very air seemed a burden. In the Grand March, in which we made a complete cycle of the hall, and in the dances, with their reciprocating parts, I felt myself elevated above mortals. My fair partner wore a wrist-plate of gold which I jealously feared indicated some other admirer, but I soon found my advance was well received. Before we parted that evening, following my lead, she promised to accept a ring from me, and I felt that my happiness was complete.

Oh, those many blissful evenings thereafter which we enjoyed! Oh, how much energy I dissipated during the remainder of my stay! How many a diagram I constructed and destroyed in striving to attain the greatest per cent. of efficiency. My results were always unsatisfactory. Again and again did I vary my methods and strive to attain a more regular curve. Sometimes she would sit in my lap, and cushion her head upon my shoulder. And then my arm would run to waist. At such moments I always found it hard to regulate the compression and determine the point of release.

But everything has an end. A card from my father called me back to business, and I soon left the place. However I may say in closing, that I afterward made several other experimental trips, and at last I had the satisfaction of being able to secure a complete vacuum, and Miss Adia Batic vanished into Mrs. C. R. Ankpin.

WANTED.

WANTED, a poet who can write
Something witty, and something bright,
And who can soar to heights sublime,
And address the gods in measured rhyme;
A man who knows the ins and outs,
And whose veracity no one doubts;
A man to cuss faculty and trustees,
And say, "we'll do as we darn please;"
A man to put our ills in rhyme,
And find a remedy for next time.
Our gratitude and millions more
For the bold bad man we have in store,
Who rises in this hour of need,
And to our express'd want gives heed.
But all poets born are, and not made;
Hence do not call a club a spade.

CHEERFUL Citizen.—"Well, Mr. Ice- man, you won't have much excuse for putting up the price of ice on us this year."
Gloomy and Sad Ice-man.—"Don't know about that—the ice is in a very bad condition."
Citizen.—"How so? It looks remarkably clear and solid."
Ice-man.—"So it does, but you see, this last cold snap has frozen all the life out of it."—Springfield Union.
89'S HALFWAY SUPPER.

THE night of Wednesday, January 25, was a most important season to the class of '89, for it marked the completion of the first half of their course of study at the W. P. I. According to the time-honored custom, the class assembled for a banquet to celebrate the happy event. Insurance and Ideal halls had been secured for the occasion, and at 8 P. M. these sumptuous apartments were filled with the alert, fun-loving students, who now comprise the Middle class. After having gone through the important ceremony of registering at the suspended scroll, the time was spent in treading the mystic measures to the sound of the piano, while, at intervals, the cornet and flute streamed forth "in the midst, like the music of a ghostly choir."

At 9 P. M. the long procession marched round the hall and joyfully passed under the arch, down the broad steps to the inviting tables, set by caterer Zahonyi with luscious fruit and beautiful flowers, which later in the evening found repose in the button-holes of the revelers. While the nimble sons of Africa were serving the first course, each Middler was attentively examining the attractive menu-card, designed by Messrs. Baldwin, Smyth and Allen. The front was adorned with characteristic cuts of the loafing Prep and the plugging Junior, while a horse-shoe with "Half-way through" upon it, in connection with the scene below, suggested that the class was to be congratulated on having gone so far in their course, but that they would need all the good luck they could muster to go ahead and get out of the scrape. But after hastily looking over the card, each one let his glance rest upon the good things to come, and, with a sigh of enjoyment, laid down his card in order to proceed to action. Do you wonder that a smile of satisfaction stole over each countenance?

"Well, possibly, but better, better!"
Oysters on the Half-Shell.
Mock Turtle Soup.
Fillet of Beef, with Mushrooms.
Quail on Toast.
Boneless Chicken, with Jelly.
'Bring in your tools.'

Potatoes, a la Flirt. Olives. Celery.
Pickles. Lettuce.
'it isn't any more use, don't you know—than two tails to a cat.'
Ice Cream. Charley Ross.
Bananas. Grapes.
Oranges. Figs.

Kaugphby and Rolls.
'Mawnin All!' Cider.

'It has no more to do with it than last year's apple crop.'

The viands disappeared as they only can before the stalwart and hungry Middler.

Roars of laughter proclaimed all care forgotten in the enjoyment of the occasion. The tables were soon cleared of food by the boys, and after everything else had been removed except glasses and suitable beverages, the second part of the feast began.

Mr. A. B. Kimball filled the position of toast-master to the satisfaction of all. His remarks were in his happiest vein, full of wit and humor, while his introductions of the toasts were most felicitous. The responses called forth bursts of laughter and rounds of applause from the appreciative audience. The first toast was "The Class of '89—Her success and prosperity," to which Pres. E. G. Penniman responded. Then followed:
"The Chemists—The knights of bottle and sponge," H. V. Baldwin.
"The Faculty," H. L. Houghton.

Music—"Stephanie Gavotte," Guitar Quartette.

The whole class then sang the Faculty song with such fervor and good-will that the belated pedestrians upon the street stopped and listened to the strange harmony. Next:


This last toast was drank with especial ardor by all, and then the indefatigable company repaired to the hall of music and listened to the following "Class Phenomena:":

**Piano Duet—Dreams of Heaven,**
Messrs. Houghton and Merriam.

Flute Solo—"Medley Polka," H. V. Baldwin.

Male Quartette,

Flute Solo—"Charmant Valse," H. V. Baldwin.
Reading—"The Dandy Fifth," J. L. Barnes.
Coronet Solo—"Bohemian Girl," W. S. Ball.

Guitar Quartette—"Slide Waltz,"

Much enjoyment and many encores greeted all the members. At the close of these exercises it was only three o'clock, at which early hour a class meeting was convened, and Mr. A. B. Kimball elected class historian. It was then voted that Mr. Desper favor the class with an address. The said gentleman accordingly arose and gave a ring-

ing speech upon the wrongs of woman, which electrified the assembly. Mr. Mills followed with a humorous and touching story. Mr. Bigelow then favored the company with a characteristic address, after which the meeting adjourned. Fun was now the order of the day. A tug-of-war, so dear to the hearts of '89, was suddenly organized, and cries of "B! B! A! A!" resounded through the hall. A few moments of intense struggle, and then the well-trained strength of A began to tell, and victory perched upon their banners. The class finished their celebration soon after, and left for their homes, but before repairing to his downy couch, each man, as he thought over the events of the night, vowed eternal allegiance to the grand old class of '89.

**Communications.**

**EDITOR W P I:**—

I desire to call your attention to an unpleasant episode connected with the semi-annual examinations which, it seems to me, might have been avoided. I refer to the circumstances attending the dismissal of four members of the junior class. These men were allowed to remain in painful ignorance of their plight for some time after the close of the examinations, and when they were finally notified it was brought about in a way that must have been extremely trying to persons at all sensitive. It would seem that, at least, the men who went so far as to make up practice during examination week should have been notified of their doubtful standing. A little exercise of tact in the future ought to prevent the repetition of a thing distressing alike to professors and students.

* * *
Mr. Editor:

It takes no very observant eye to note the general dissatisfaction that exists about the results of our last examinations. Indeed, so long as the present system of marking is in vogue, it cannot be otherwise. There are very many of us who cannot see why, if everything is all straight, our marks should be shrouded in so much mystery. As matters stand, the only safe criterion we have is the consciousness of having done good work. But a greater evil than this is the fund left by "a benevolent friend of the Institute" to furnish prizes of $75 for each the "first six." The pernicious effects of a prize system, when based purely upon scholarship, are too numerous and well-known to be mentioned here, and how much more so are they when based upon a personal mark.

The "benevolent friend" would have done a far wiser and more benevolent deed if he had left the money to be bestowed upon the most needy of the students at the discretion of the faculty.

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Mr. Editor:

I think that some mention should be made in your paper of the many unjust estimates of a student's ability, as expressed in the semi-annual reports which have just been received, and which are claimed to be a fair representation of the work of the past term. The ranking of some of the men in my class especially, is almost outrageous, and I can cite numerous other instances nearly as bad in the other classes. Either our system of marking is worth absolutely nothing at all, or else the judgment of our professors is much biased by the element of personal dislike, and the determination to place their favorites in a false position. The subject of changing the present marking system is becoming a serious consideration, and it seems to me unless it is soon accomplished it will have not the best influence upon the reputation of the Institute.

Senior.

[The above communications seem to be fair samples of the general feeling of the students at the Institute concerning our present marking system. The only comment we have to make upon them is that they all seem to tend in the same direction as indicated by our leading editorial of this issue, i.e., toward a general reform.—Eds.]

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Athletics.

Corbin, '88, and Cowan, '89, are to captain the Yale and Princeton elevens next fall.

Cornell expects to have a strong crew in the field, or rather, on the water, this year.

The Dartmouth nine has applied for admission to the league of which Harvard, Yale and Princeton are members.

H. G. Shearman, '89, has recently raised the Yale record in the running high-jump to 5 ft. 7½ in.

The intercollegiate base-ball season will be opened March 30th by a game between Yale and the University of Pennsylvania at Philadelphia.

There is a movement being made in Boston to have the American game of foot-ball replaced by the English and Scotch game. Those who are interested in its favor claim great superiority for the English game, as being less dangerous and brutal, although just as interesting. We do not think the American colleges will make the change this year however.

Harvard and Yale athletes are now busily training for the coming contests at Mott Haven. Harvard feels quite confident of winning the running and bicycle races, but is weak in the high-jump, pole-vault and putting-the-shot.
Therefore to improve the records in these events, weekly contests have been held, and prizes offered to the men making the best record and most improvement. The Yale team has been divided into four squads, which are trained by their individual leaders according to their needs. The jumpers and short-distance runners jump three days a week and run or walk three days, while the long-distance runners and other contestants run five days and jump one day.

**Scientific Notes.**

An interesting mathematical discussion of the trajectory of a projectile in a vacuum is to be found in a paper edited by Capt. Greer, U. S. A. He introduces important conditions hitherto neglected, and demonstrates that the path of a projectile is not a parabola, as has been supposed, but an ellipse.

Experiments conducted at the government torpedo station at Newport have shown that an incandescent lamp of 100 candle-power will illuminate a circle 300 feet in diameter, when sunk in water to a depth of twenty feet. Thus a vessel provided with powerful incandescent lamps might easily detect and remove torpedoes from the path of an attacking fleet.

An ingenious, self-illuminating buoy has been constructed on the principle of the self-exciting Geissler tubes. Stout glass tubes are mounted on an ordinary buoy. A small quantity of mercury is introduced into the tubes, the air is exhausted and the tubes sealed. As the buoy rises and falls with the waves, the agitation of the mercury in a vacuum produces electricity which renders the tube luminous.

Flash-light photography is the latest thing in that line, and promises to fill "a long-felt want." It furnishes a means for securing photographs in the dark. The camera is duly prepared in the usual manner. The operator then ignites a powder consisting of an intimate mixture of twenty grains of gun-cotton and fifteen grains of magnesium. A quick flash and a remarkably clear negative is the result.

The "Scientific American" devotes considerable of its valuable space to a late invention for facilitating locomotion. The contrivance is "fearfully and wonderfully made." It consists of a rocking chair mounted on wheels. The rocking motion of the chair is converted to the rotary motion of the wheels by a very elaborate system of gearing. The weight and the enormous friction of the machine may easily be imagined. The inventor fondly imagines that a man will rock himself about at a high rate of speed. All that is necessary to render the machine a perfect success is the application of the Keeley motor to propel it. If the "Scientific American" is to indulge in that sort of thing very often we should like to suggest that the editor start a funny column.

Considering the unanimity with which the organic theory of the origin of petroleum has been accepted, we are somewhat surprised to find an entirely different theory asserting its claim to consideration. This theory claims to have the substantial support of actual experiment. Petroleum is of mineral origin if we accept the latest explanation. Water has filtered through the soil until it has come in contact with an incandescent mass of the carburet of a metal. On reaching the heated mass the water is decomposed, forming an oxide of the metal and a hydro-carbon, which is petroleum or natural gas according to external conditions. In this manner a liquid exactly similar to petroleum in physical characteristics, and yielding the same results on analysis, has been produced in the laboratory.
The theory is plausible to say the least.

The smallest oscillating engine in the world is about half as big as a collar button and is hidden completely beneath a child's thimble. Its bore is one-sixteenth of an inch, and the stroke one-eighth. The wheel, shaft and crank weigh eight grains, the cylinder five, and the stand and pillar twelve grains, making the whole weight one pennyweight, one grain. Run by compressed air, it makes three thousand revolutions a minute.

**College News.**

Twenty-six Cornell Freshmen failed to pass the semi-annual examinations.

Of the 93 Freshmen at Amherst but 17 smoke tobacco; the rest smoke cigarettes.—*Life*.

The non-fraternity men at the University of Michigan controlled elections this year for the first time in the history of the college.

The *Review*, published at Oxford University, is the only English college journal edited by undergraduates.

The proposed new gymnasium for Yale will be built of brownstone, trimmed by some lighter material, and will cost $300,000.

The Sophomore class of Columbia College has been assessed $2.50 for each member, to pay the debt of the crew for their Freshman year.—*Ex*.

At Ohio State University, students are required to sign their names on examination papers to the statement that they have neither given nor received assistance.—*Ex*.

The Cornell *Sun* complains of the attitude of the Faculty in dropping the athletic men at the examinations. It says that Cornell does not hold the position in athletic sports to which her size entitles her.

Two thirds of the Dartmouth students work their way through college. A few years ago a certain student's principal source of income was from sawing wood. At present, the same man draws a salary of $5,000 a year as a civil engineer.

The Columbia College library is said to be the best managed in the world. Writing materials are furnished for the visitors, and light meals are supplied to those students who are too busy to leave their work.—*Princetonian*.

Oberlin boasts of being the first college that admitted women on equal terms with men, but to the University of Wisconsin belongs the honor of having graduated a larger number of women than any other co-educational institution.—*Pennsylvanian*.

A summer school in Mining has been established at the Mass. Institute of Technology. Next summer the school will be located either in the anthracite regions of Pennsylvania or the iron region of Michigan. The school will be under the charge of Professor Clark, and it is intended to give the students an opportunity to actually work in the mines.

The Johns Hopkins University now requires all undergraduate students to pass an examination in gymnastics before obtaining a degree. Vaulting, jumping and simple exercises on the parallel bar, horizontal bar, and ladder are required. The maximum mark is 36, of which 20 is necessary in order to pass.

Cornell is soon to have an experiment station. Besides the directors of the station, there will be appointed the following assistants: In experimental horticulture, experimental agriculture, chemical analysis, veterinary science, experimental botany, and experimental entomology; also two second assistants in experimental agriculture, and one in chemical analysis.—*Ex*. 
Prof. Lyon of Harvard, says in the Independent that the abolition of compulsory chapel has proved highly satisfactory at that college.

At Harvard, work on the College paper is accepted as a substitute for regular literary duty. Such a plan lives the interest in the paper and conduces to a large increase in the contributions to the same.—Princeton.

This statement was manufactured out of whole cloth about two years ago, and has maintained a healthy existence ever since, appearing at least once in every college paper in the country.—Crimson.

**Exchanges.**

The list of weekly college papers has been increased by the addition of the Northwestern, formerly a semi-monthly. The new paper certainly shows as much ability in reporting the news as any of its eastern contemporaries and is warmly welcomed as marking the beginning of a new era in western college journalism.

The Illini, in a three-line paragraph, has awarded the championship of the Eastern Intercollegiate Foot-ball Association to the W. P. I. Under the manipulation of our far-away brethren of the scissors and mucilage-bottle this item would probably grow into the statement that Worcester defeated Yale and sent its team on a starring tour through New England. In order to prevent such an unpleasant misstatement we feel obliged to say that the W. P. I. doesn’t belong to any foot-ball association, as yet, although it can play pretty good football when occasion calls for it.

We think the newly-elected ex.-ed. of Student Life makes a mistake in using the first personal pronoun. Of course the use of “I” is all a matter of taste, but it seems like infringing on a good old custom that ought to be retained. In the November number of the

"Writer" Mr. J. R. Perry says, "I in the unsigned article, the author of which may be anyone, and certainly is no one of interest to any very large number of readers, the use of ‘I’ is manifestly in bad taste.” We might add to this that the practice becomes doubly objectionable in the case of an editor.

The Varsity with a fully developed exchange department is a vast improvement over the Varsity without that pleasing accompaniment. Much has been written in opposition to the exchange column, and certain college journals have even abolished it altogether because of its “tickle me and I’ll tickle you” tendencies, but the fact still remains that no part of the paper is a better index of the character and ability of the sheet. If the paper is loosely edited, or conducted without that grasp of affairs which seems to come instinctively to the true journalist, the exchange column will reveal it instantly. The best exchange columns are generally found in the best papers, and it is also true that one or two of the best papers have no exchange column, but this is due to a disinclination, rather than an inability, to sustain one.

The Niagara Index complains because its exchanges were rather slow in coming, after the Christmas vacation. Then the Index, as if to shame the laggards, issues two numbers with but a week intervening. We hope that the Index has not changed from a semi-monthly to a weekly. The prospect of wading through the ex.-ed’s. column every week is appalling. We don’t suppose any body ever reads this part of the paper except the author and his exchange brethren, and so its baleful influence isn’t very far-reaching, but in the interests of the English language the production of such literature ought to be discouraged. This criticism, however, does not apply to the paper as a whole. We esteem the Index as one of the ablest of our exchanges.
We have to take the ex. man as a sort of typographical error. Last December, without the slightest provocation, and without any intimation that we were in need of such advice, he offered to give us some “pointers on political economy.” Perhaps when he reads this he will offer to tell what he knows about the value of an eclipse to the average Fijian, or something equally remote from the subject under discussion.

The gossipy little sketch in the Tuftonian called “The Pirates’ Christmas” must grate harshly upon the nerves of those finely-strung critics who judge “literary matter” to be good or bad according to the length or shortness of the paragraphs and the absence or presence of quotation marks. The grip which the encyclopedia has on some of our contemporaries shows no signs of relaxing.

Personsals.

Dr. H. P. Armsby, ’71, recently professor of agricultural chemistry at the University of Wisconsin, assumed, Oct. 1, 1887, the position of director of the experiment station at Penn. State College.

F. W. Bateman, ’71, is assistant engineer of the Fitchburg R. R., with his headquarters at Fitchburg, Mass.

W. A. Nelson, ’71, is employed as head draughtsman for the Simonds Rolling Machine Co., Fitchburg, Mass.

Arthur M. Morse, ’73, is manager of the engineering department of Crane Bros. Manufacturing Co., Kansas City, Mo.

W. S. Locke, ’74, recently designing engineer at Boston, Mass., is instructor in the mechanical department of the Rhode Island School of Design, Providence, R. I.

Perry F. Smith, ’77, is about to start a bakery at Hyde Park, Mass.

We have to congratulate J. A. Vail, ’78, superintendent of the St. Louis Car Wheel Co., St. Louis, Mo., on the birth of a son, Jan. 3, 1888.

C. L. Allen, ’79, has very recently accepted the position of head draughtsman at the Holyoke Hydrant and Iron Works, Holyoke, Mass.

H. D. Bush, ’79, is superintendent of the Dominion Bridge Co. (limited), Lachine, Canada.

Chas. H. Wright, ’79, has become principal assistant engineer of the Smith Bridge Co., Toledo, Ohio.

Chas. E. Wells, ’80, has been appointed division engineer of the Chicago, Santa Fé and California, R. R., with his residence at Galesburg, Ill.

E. A. Williams, ’81, is draughtsman for the Fitchburg Machine Works.

John E. Casey, ’82, holds the position of chemist and foreman of the chemical dept. of the S. S. White Dental Mfg. Co., Prince’s Bay, Staten Island, N. Y.

Albert L. Tucker, ’82, has just entered the employ of the Western Electric Co., Chicago, Ill.

Chas. A. Clough, ’83, is president of the N. E. Association of polo clubs, and is manager of the Hartfords.

Willard Fuller, ’84, is at Cleveland, Ohio, with the Union Rolling Mill Co.

A. D. Stevens, ’84, is president of the Merrill-Stevens Engineering Co. (incorporated), which transacts general engineering and repair work throughout the State. At the shops in Jacksonville, Fla., the manufacture of boilers and general iron work is carried on.

J. G. Aldrich, ’85, is with the Diamond Machine Co., Providence, R. I., and in addition teaches mechanical drawing evenings under W. S. Locke, ’74, at the R. I. School of Design.
S. M. Green, '85, is with the Merrick Thread Co., Holyoke, Mass.

C. A. Bennett, '86, is instructor in charge of the manual training dept. connected with the St. Paul High School, St. Paul, Minn.

Wm. H. Drake, '86, is an instructor at the Pratt Institute, Brooklyn, N. Y.


W. H. Oakes, '86, is in the employ of Mr. King, who has bought up the patent of Rogers & King for the U. S., and is not employed by the Montreal firm, as incorrectly stated in our last issue.

G. W. Burr, '87, is expert for the Thomson-Houston Electric Light Co., Lynn, Mass.

Landsing, '87, is with the Pratt & Whitney Co., Hartford, Conn.

J. W. Pierpont, '87, is pursuing post-graduate studies in pure mathematics at Yale University.

C. J. Sawyer, '87, is in Pasadena, Cal., where he has bought an orange grove. He anticipates a fine crop. He is also about to open a bakery there, in which he will have the assistance of a gentleman from his former home, Bolton, Mass.

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**Technicalities.**

The additional light gained in the shop by the removal of the partition in enlarging the tool-room is very noticeable.

Student (in German class).—"Is not the adverbial phrase in the first line of the fourth stanza an adjective phrase?"

The semi-annual hat has been shaken, and the names drawn. The first six and the last six have our hearty congratulations.

And now we learn that '90's learned man wants to construct a toboggan chute with the line of descent in a parabolic curve.

The Preps are thinking up lots of new schemes. It is said that the members from sunny California contemplate organizing a toboggan club when summer opens.

New York is saved. All the Juniors who were expecting to go there succeeded in passing the examinations.

The Prep in his new overalls looks sweet enough to kiss. When the girls come up in the spring they will jumper 'round over-all the benches to capture him. A piece of waste goes with this joke.

The chief difference between the Prep and the Junior is that the Prep uses the Golden Rule. The Junior's is made of steel, and the man who can see anything funny in this item can have ours.

'90's officers for the ensuing half year: President, Rice; Vice-President, Larcher; Secretary and Treasurer, Booth; Athletic Director, Lake; Base Ball Manager, Crosby.

'90's base ball enthusiasts are complaining of the lack of a "cage" to practice in. The remainder of the school would gladly furnish a cage if it were possible to securely lock the nine in until spring.

A select leap-year party was given at Continental Hall, Jan. 30. The predominance of Techs was noticeable, and indicated the ladies' appreciation of the recent Tech Social.

The report that Prof. Higgins feeds his horse on the hay taken from under the Preps' collars is a mistake. Mr. Higgins uses the dried, not the green variety.
Sixes: Seniors—Goodell, Shimomura, Griffin, Hunting, Lovell, Patterson.
   Middlers—Bigelow, Penniman, Allen, Stowe, Hadley, Smyth.
   Juniors—Rood, Larcher, Gardner, Mumford, Nutt, Devlin.

Prof. in Mineralogy: "Here is a mineral of the hexagonal system, and its angles should be 120° each." (Measures them.) "Yes, they are all 120° except one, which varies several degrees."

The exterior of the standard instrument building is completed, and work is being pushed on the inside. We regret to see such small window-panes, otherwise the building presents quite an imposing appearance.

Prep (to landlady, as he looks about his room and sees nothing in it but a chair and an old clock): "Why what am I to sleep on?" Landlady (pointing to the clock): "Oh, on the tick, of course."

The Seniors have organized for the term as follows:—Pres., H. E. Rice; Vice-Pres., A. S. Cushman; Sec., J. F. Temple; Treasurer, G. H. Frary; Athletic Director, R. L. Lovell. J. B. Chittenden has been chosen Class Poet, F. W. Speirs, Class Historian, and J. H. Jenkins, Class Prophet.

She: "George, do you know why this year is called leap-year?"

He (thinking anxiously of the price of diamonds): "No, unless it's because the fellows have to be on the jump all the time to skip the girls."

Our matter went to press this month too early to include an account of the emergency lecture by Dr. Woodward. A full report will appear in our next issue.

The Seniors' cabinet lathe is progressing finely and there seems now to be but little doubt of its completion by Commencement.

The Preps have already begun to carve themselves with the buzz-saws and chisels.

Mr. Cole and the big valves for the Hatch elevator have been wintering in New York.

Now the Prep
With manly sweat
His forehead doth bedew;
And that same head,
'Ere June has sped,
Will be "sans hayseed," too!

The new order of things in chapel, by which the choir rise and face the school, appears to be a success. We hope now to see the choir lead the school, not the school lead the choir.

Prof. (explaining a problem in geometry): "If g equals one division and there are n divisions in all, then the whole distance is ng is it not?"

Student (vainly trying to see through the problem): "It seems to me, Professor that the whole business is n. g."

Since the new building at the foot of the hill is nearly done, why not arrange appropriate exercises for its dedication? There is room and material enough for a nice bonfire, and enough fellows to make a good procession. Address communications to the "office."

From the minutes of a certain Prof's lecture to the class after an "exam" on the review topics of the previous month: "Well, I feel very sure if you had all had the mumps, and stayed at home during the review, the papers would have been much more satisfactory."

Student (translating German): "The sound of the music and weeping ceased. The bier disappeared and."

The student looks up in surprise at the general laughter.

Prof. (to class): "There is indeed nothing to occasion laughter, I'm sure. Nevertheless, however, indeed, I can already, yet, have no more levity, that is, any longer, even, in this recitation, I'm sure."
The hour plan for this half seems to have been "gotten up" with a reckless disregard as to the number of hours in a day, and after working by it for a week we can confidently recommend it as an effective anti-fat remedy. The Seniors, however, seem to be gaining flesh under the new order of things.

Once upon a time there was a certain man, call him Jones, and another uncertain man, call him Smith. Said Smith to Jones, "What's your name, please?" Jones answered, "Jones, Jr." Theret said Smith to Jones, "Now what's your father's name?" And straightway the silence became so intense that a fly on the table was heard to say "Rats."

A would-be Prep got lost in the office of the shop during "exams," and was heard to inquire, piteously, of a Senior, "Say, how do you get out of this place?" If he succeeded in his "exams" we can assure him he will never again be troubled in that direction. Very few have any difficulty in finding their way out of the institution.

The following schedule of tunes for whistling in the corridor has been made out and will soon be posted:

Selection from:
Mikado—10 min. in office.
Erminie '1111"
Mother's Darling—30 min. in office.
@15 in various locations—30 min. and lecture.
Any other popular song—15 min."
N. B.—Preps are admitted to the office for 30 min. regardless of tune or price-list.

There is a man in A '90 who continually sings while at practice. Some one stole up alongside of him one Monday afternoon and heard:

"Oh, I'm the dandy,
Gum drops and candy,
I'm cigarette McCarthy,
The masher, the swell."

His name is suppressed out of consideration for his youth.

We have been asked by our friends of the class of '91, who are as yet unacquainted with the city, to publish a list of the places of amusement. We are pleased to comply with their wishes:

THEATRE COMIQUE, in Mechanics Hall. All the standard attractions.
WORLD'S MUSEUM, Washburn Hall. A wonderful exhibition of curiosities. Half price to Techs.
BIJOU FAMILY RESORT, opp. Walnut St. The favorite resort of the elite.
BRISTOL'S PAVILION OF MUSIC AND MIRTH, No. 321 Main St. Hourly performances from 2 to 10 P. M. Popular prices.
DIME SHOW, follow the crowd and you'll get there. Admission, 10 cts. Preps and other children, half price. No stamping or spitting on the floor.

89's Class officers: Pres., Houghton; Vice-pres., Bigelow; Sec. and Treas., Bartlett; Athletic Director, Penniman.

91's Class officers: Pres., Kinsley; Vice-pres., Fisk; Sec., Rice; Treas., Carleton; Athletic Directors, Dadmun and Bradford.

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