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THE TECH.

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THE present number concludes the fifth volume of THE TECH. The editors have now laid down their pens, corked their ink-bottles, and the editorial board for '85-'86 has disbanded. Many of its members now close their official connection with the paper forever; a few will return and resume work with the next volume.

In retiring from the conduct of the paper, the editor takes this last occasion of expressing his thanks to those who have assisted him during the year; to the contributors, whose timely contributions have saved him many an anxious hour when short of copy for the next number; to members of the Faculty, for the kind interest which they have shown in THE TECH; and especially to Professors Drown, Nichols, and Atkinson, for the material and valuable aid which they have rendered; and last, and most of all, to the assistant editors.

It is unfortunate that it has become, or rather has been ever since THE TECH was started, the duty of the assistant editors not only to do their regular editorial work, but also

to supply the literary matter for the paper. It is always the aim of the editor to procure as many long articles as possible from outside sources, and thus avoid the necessity of calling upon his assistants. Consequently a considerable number of contributions are generally obtained, in most cases from his friends, but never without his personal solicitation.

The voluntary contributions which we should find in our mail-box, when we open it in the morning, are not forthcoming. Now this is not as it should be. The reasons why every student at the Institute should write for THE TECH have been set forth time and time again, so we will not bore our readers with a repetition.

Some will probably mentally remark, "Chestnuts," at what has already been written; but we write this not from pleasure, nor merely to fill space, but because we think that the future well-fare of THE TECH demands it.

It is a matter of fact that the number of voluntary contributions during a year can be counted on the fingers of the two hands.

Yet every one of its subscribers feels an interest in the paper, and takes pride in its successes, and credit in being one of its supporters. Does not the credit, now, belong to the editorial board alone?

The present year has, on the whole, been a successful one for THE TECH. Its financial condition has been good, and thereby enabled us to make improvements.

During the year the size has been increased from fourteen to sixteen, and finally to eighteen pages. A prominent feature of THE TECH during the present year has been its poetry, which has been quite extensively clipped. We also in this volume introduced the innovation into college journalism of publishing a series of illustrated descriptive articles, and a continued story

was well received. And in laying down our pens, we do so with the knowledge that THE TECH will be in good hands next year, and only hope that subscribers will take a little more practical interest in it by contributing now and then; and finally to all, whether you can write or not, our parting injunction,—

SUBSCRIBE FOR VOLUME VI.

ANOTHER year has passed since it has been the duty of THE TECH to review the events which it has recorded during that time. The year just passed has been an eventful one in the student life at the Institute,—perhaps the most eventful one in its history. Never before has there been so much enterprise in class, society, or athletic affairs.

Last fall, when we returned from our vacations, the athletic men began to talk about the foot-ball team, as usual, but nobody else thought anything of it. Then they went to work and were largely instrumental in the formation of an intercollegiate foot-ball association with other New England colleges. Students in general then began to take a little more interest in the eleven, but were still suspicious, and subscriptions did not come in so fast as they will next fall. The team was defeated in its first game, and chronic kickers (not on team) said, "I told you so." However, the foot-ball men went into strict training and practiced faithfully, and won the next game, and the next,—and—well, if we did not win the championship, it was on account of that unfortunate day at Springfield. Our magnificent foot-ball team of 1885, and the score, Techs 110, Tufts 0, will never be forgotten.

The next important event of the year was the publication of an annual by the Junior class. It was a good idea, well carried out, and the class of '87 deserved all the credit (and more subscriptions) than they got for it.

All the old societies have been in a prosperous condition during the year, and one new one established. The class societies of '87 and '88 were never in such a flourishing condition as

they are now, and the custom bids fair to be adopted by every succeeding class. There used to be a saying that there was no college in the country where there was so little class feeling as at the Institute; this would now become, Where is there a large college where there is so much?

In gymnasium athletics we have deteriorated. The out-door games last fall were among the worst it has ever been our fate to attend, and while the winter games were very successful in a financial way, and the Institute won its share of the prizes, no good records were made. The Institute has always stood high in this form of athletics, but many of the men who had made good records for themselves last year did not return, while others who did return did not enter the games this year. This last is something that should be looked after more carefully by the Athletic Club.

In tug-of-war our Freshman team pulled the Harvard champions, and wiped out our defeat of last year. Our base-ball team, however, shows no improvement over the '85; in fact, they show a slight deterioration, for the team of 1885 did win one game, and the team of 1886 has yet to do so. The poor unfortunate nine has now eight consecutive defeats to its discredit, and, worst of all, it has not even a friend, since the Base-Ball Association some time ago threatened to disband it.

One of the most important events of the year was the formation of a Co-operative Society, which now supplies a long-felt want. The Glee Club has not blossomed out so prettily this year as it did last, but the Orchestra has shown more signs of life. The Senior Ball of April 30th was characterized by the presence of as many as twenty-five Seniors! A chess club and banjo club have been organized; a tennis club has been formed, and by the kindness of the Faculty are allowed the use of the lawn between Rogers and Kidder buildings for courts.

Finally, the present Senior class is to have a class day—another innovation. With this fitting conclusion will end an important year in the history of the Massachusetts Institute.

IN this last number of THE TECH for 1885-86, we make the suggestion to those to whom the persons, affairs, and circumstances connected with their life at the Institute are of more than a passing interest, that they carefully keep all the numbers of THE TECH, both for use as a reliable means of reference, and for the pleasure they will give in helping to recall many a friend and many a treasured association. Have your TECHS bound. The expense is not great, and it is the only way to keep them well in order and in convenient form. It won't be long before you will be looking up this or that in the volume, and the older you grow the more you will value it, and the more you will enjoy glancing over its pages.

THE curriculum of the third and fourth years of the course in civil engineering has been quite materially changed. The idea has been to give the student some freedom of choice as to the particular line of work he wishes to follow. This has been accomplished by dividing the fourth year into three branches: 1, a general course; 2, railroads; 3, geodesy and astronomy.

The general course covers the whole field of civil engineering, and is intended for those who do not wish to adopt any special branch. An opportunity is afforded to those who desire to devote themselves more specially to some particular subject, by making several studies optional, as railway management, heating, and ventilation. In the second term mechanics is replaced by machinery and motors (optional).

The railroad course is intended for those who desire to pursue this branch of engineering. Machinery and motors is a required study.

The course in geodesy and astronomy is entirely new here. Those intending to take this course must take advanced trigonometry, stereotomy, and determinants in the third year.

A circular giving more details of these new courses will be issued in a few days.

We are unable to announce the next board of management of THE TECH as the classes of '88 and '89 have neglected to elect directors.

Good-bye, Boys!

As the closing days of college pass in swift, unheeding flight,
 Dreams of future times and places, that had once made life seem bright,
 Lose their charm and power to move us. In their place come thoughts of those
 Friends of youth — the dearest, truest friends that friendship ever knows, —
 Who will soon be widely scattered, nevermore to meet as now;
 Nevermore to feel the freedom that these happy days allow —
 Must these dear associations for a state untried resign?
 This it is that makes us murmur, Come what will, the past is mine!

G. K.

Boarding-School Reminiscences.

WHEN I arrived at the progressive age of thirteen years, my mother, and, in fact, the whole family, thought that I had attained a sufficient amount of moderate maturity to be sent to boarding-school, having made of myself an "*enfant terrible*," as well as obnoxious in the way the genus "small boy" knows so well how to do. Among my many (?) amiable qualities was an extreme love of playfully igniting neighbors' barns, or turning farmers' cows loose. My mother put up with these to some extent; but when I persisted in falling desperately in love with the new chambermaid, she quietly "drew the line there," and resolved to pack her "hope" off to school.

As for the school — my youthful ambition had always been to be a soldier, having had many ancestors and uncles graduates of West Point; so I wanted to be one, also. Now the mere fact of donning the female-destroying brass buttons was bliss itself, saying nothing of the joys to be obtained as a soldier. So a military school was decided on. The establishment was called the Rivoli Military Academy, and was situated on the left bank of the Hudson, directly under the Catskills, on an eminence overlooking the beautiful river.

I was brought to this place by my mother. I had come all the way from Connecticut, and it being about the first journey of any length that

I can remember, I was in boyish ecstasies most of the way. The thought of the dear home I had left, or the griping pangs of homesickness, had no significance for me then. As I watched the grand Hudson, as we flew along its banks, I thought of the swims, of the boating and skating to be had. Ah, reckless youth! I little knew what time would bring forth.

We arrived at Rivoli late in the evening, and getting off the train we saw a man approaching, whom my mother took for an omnibus-driver, and asked him if he "would drive us to Dr. Spark's School." He answered, "Yes, Madam; I can, and will. I am Dr. Spark." My mother apologized frantically, and I had some secret forebodings as to my future. However, my mother resolved upon being agreeable, and "showed me up beautifully." I couldn't blame her for the mistake about the omnibus, as his forte was never in "style," and on off-days he *did* resemble an antiquated herdic-driver; and this day (when I appeared) was one of them. We soon arrived at the school — several large white buildings, with a jolly large campus. I was soon introduced to the matron, and installed in my alcove. My mother left me the next day, and with tears in her eyes "hoped that I would be happy." I can see her now.

Alas! hardly had the "mater" left than the howling pack of small boys crowded and pushed to get a glimpse and a question at the "new boy." I stood this pretty well, but they ran it too far. Now, I never could take a joke easily, being born with a hasty temper. This "stuffing" process made me wrathful and indignant to such an extent that I proceeded to punch the nearest fellow's head, and as I never did succeed in choosing a smaller boy than myself to pummel, I got licked. I rushed to my alcove, head aching, and in a raging spirit. This was nothing as to what I endured later. After "study-hour" the boys again crowded around me, and pumped me to their hearts' content. I was an easy victim, and they had, I know, a beautiful time with me. Some of the questions resembled these: "Where do you live, teeth?" (I then having quite prominent tusks.)

"You will pitch into Blake, will you?" "Got any sisters?" "Well, you young freshie, you've got some pluck, I see," said a big upper boy, as he carelessly surveyed me. That fellow was my firm friend through the time he was there.

We were soon marched off to bed. Then my trials began. We slept in dormitories. There were three; each held about twenty fellows, with an upper form boy as captain. Each fellow had a little stall, or alcove, as his bedroom. These alcoves were nothing more than stalls partitioned off with a thin wall, which was only about eight feet high, so that you could, by stepping upon your bed, hold a conversation with your next neighbor; or, a missile or a cup of water could be unostentatiously dropped down upon an innocent sleeper in the next apartment. Well, in this case, I was the innocent would-be sleeper, but it was *not* to be. Scarcely had the lights been put out when I felt a stream of fearfully cold water coming from above, and completely saturating me and my bed, making it utterly worthless to sleep on; so, with a muttered sigh of revenge, I proceeded to investigate the inside, to see if it was thoroughly wet through. It was, sure enough and thus I had to pass the night. Oh! then the pangs of homesickness, those indescribable pains, came upon me with withering force. Oh for my mother, or a big brother to help me out of this! None came. Several raids were made upon me, in which I had the exceeding pleasure of breaking a pitcher of cold water on one youth's head, and of playfully spanking some small boys in my artless thirteen-year-old way. But I soon got to know the fellows, and having been taught to restrain my temper, they let up, and I helped to vigorously squirt water and to raid the next new boy with the rest.

We had drill three times a week, and trials of the "awkward squad" were many. I soon graduated from that, and was made a regular company man. How well I remember my first appointment as a corporal, and donning my two stripes. Nothing under heaven could be so great an honor to me as to be a corporal

at this school. There was a system of punishment at the school known as "*guard duty*." For every bad act you were caught in you would receive so many hours "guard duty": for instance, for "throwing chalk," five hours; for "hooking off" to the village, ten hours; for "cutting prayers," fifteen, and so on up the scale. One fellow, I remember, got indefinite guard for knocking a professor down, who persisted in roughly and repeatedly rubbing his "basswood head" into intelligence. This guard had to be served in all play-hours — walking in a squad and carrying a heavy Mexican war musket, with a sworn, unbribable officer to take charge of them. It was an awful bore; but oh! what an appetite for supper — and what a supper! I will not dwell upon it. There was plenty there, but it lacked something — variety — and that was seldom, if ever, found. We used to have, each one, a little round, hard, brown cake, which was of extreme value to us. This little cake we would sell at five cents per cake, two for fifteen, or three for a quarter. Why we gained in price I never could tell, yet we used to buy three of those hard, indigestible little brown cakes for a quarter, and think ourselves hugely in luck to get them at that price.

There was a gymnasium on the grounds, where we had compulsory exercise and served guard in the winter, and got a decidedly unwholesome hate for the place for these reasons. In summer we only used it for "pitching" pennies on the sly, for tossing an unpopular boy in a mattress, or for the forming of a schoolboy ring, to see "fair play," as we called it. I had my "fair plays" in that "gym" with the rest. A boy at school has got to fight, and the pluckier he goes in for it the better for him afterward, no matter whether he is beaten or not.

How vividly I can recall the time when I had, I believe, twenty-five hours' guard to my credit, and it had to be all served off before I could go home for the Christmas vacation. There were only four days before we went home, and only twelve possible serving hours. So I, with two other fellows, got up at 12.30 A. M., waked the officer of the guard, and made him register us

as on guard and serving it. We took our pillows and great-coats, and in the silent night went over to the "gym," adjusted our pillows, and with our muskets folded to our breasts, we slept off eight hours. We kept this up for three successive nights, and got home with the rest.

One poor fellow, I recollect, was kept over on the spring vacation by the Doctor, for something or other. He was afterward expelled, and he took it so hard that he got perfectly morbid and beside himself, and declared that life was a desert, and not worth living. I had the luck, with another fellow, to do him quite a service. It was as follows: We were returning late from the river, one evening, and the boys were all in at supper; so we rushed to the lavatory, to make believe wash our hands, when, to our utter bewilderment, we saw this poor devil in the very act of hanging himself. He had spliced some towels together, and made one end in a noose, and tied the other to a towel-hook, and was just on the point of strangulation when we cut him down. He had a narrow squeeze. We brought him up to time, though, and with some sound advice and a kick we took him in to supper.

I never attempted to run away; a few did, but were always brought ignominiously back — except one plucky little fellow. His name was Dean Hardy, a little Englishman. He started for the train, and was seized by the station-agent, who, of course, recognized his uniform; but Hardy escaped, and struck for the woods, where we fellows found him, and made arrangements to see him through it. We took him to the "gym," and he slept in the "gun closet," while we fed him through the fence and hedges in the daytime. He appeared one day, and the Doctor never said a word. He always did like pluck.

I went through many happy and rough times in my four years. I soon became a big boy, and from the chevrons and the musket I graduated to the shoulder-straps and the sword. Ah! those were happy days, and how I long to be back to them once more! How I pity any sturdy fellow who hasn't been to a real boarding-school. He will never know what it

is to look back upon those days when each fellow had his own little sphere in which he reigned supreme, and fought his miniature battle for the ownership. I am soon to leave my Alma Mater, and my college days, like those of my old school, will be but memories of the happy past.

LAURENS.

Cold Waves!

'Tis odd I should remember yet
Last summer's flame — that nymph so grave
And sweet; how hand in hand we met
Each parting wave.

I wonder if she guessed the grief
I felt, when from the car she gave,
With that dear little handkerchief,
One parting wave.

Students in Politics.

NOT much more than a year ago, the students of this and other colleges all over the country manifested, in mass-meetings, torchlight processions, and volumes of excited conversation, their interest in the quadrennial commotion over the usual change in our national Government. There was nothing particularly remarkable in this, or in the fact that in most institutions of learning approximately accurate canvasses of individual preferences were made, in order to ascertain the exact state of opinion among the students; for similar proceedings are the regular accompaniment of every Presidential election. But there was one point which calls for special notice; namely, the unusual amount of attention paid these demonstrations by the newspapers, and therefore by the country at large. This consideration may be attributed to that constantly growing demand for accounts of how our youth are being educated, which is making the College World column a necessary feature of every great paper; or to surprise at a class which had been so generally in sympathy with the party in power, suddenly developing such a large percentage of disaffected spirits; or to the interest taken by politicians anticipating a close election in the fall of every straw. There is another

theory, however, well worthy of attention. Our governmental machine, like many other machines, once carefully planned and built and started, will run for a considerable period even under the care of men who understand it but partially, and care for it not at all. But let some new exigency arise,—let it be required that the machine shall be adapted to perform some extra item in the way of work, or to meet increasing demands upon its efficiency, then our common laborers, our Celtic wire-pullers and manipulators, our "practical politicians," who have been merely carrying out more or less accurately the designs of wiser men than they, are obliged to subside temporarily, and yield to the ideas if not to the actual operations of the mere theorists, the "gilt-edged" idealists whom they have always scoffed at, and affected to despise. Now, the ranks of the latter are recruited largely from the colleges, where advanced ideas of political and social economy find their first foothold preparatory to gradual dissemination among the masses. Hence it happens that when new issues confront the nation and new questions perplex partisan leaders, they turn instinctively to men who have some pretensions to knowledge (in theory, at least) of statesmanship as well as of politics; experience is no longer entirely sufficient to cover defects in education; college graduates come largely to the front, while, as a natural consequence, the rising generation, particularly that cultivated portion of it who are to decide upon the final solution of the problems of the day, command an unusual amount of attention. The present age is fruitful in such issues, while governments abroad occupy themselves with resisting enlarging demands for liberty on the part of their people, or in yielding to the inevitable as slowly as possible, we at home are already wondering whether means could not be found to restrict suffrage, and whether, at least in our great cities, governments of, for, and by liquor-sellers could not be made a little more or a little less democratic.

Without stopping to observe the political standing of collegiates in our country, which is

sufficiently well known to us, we may find it interesting to note in such connection the actions of students in others. Crossing over to the mother country, we find their status too much like our own to be interesting. The English collegiate, more generally addicted to sports than his American cousin, and having usually more money to spend, finds sufficient diversion and occupation for his energies without dabbling in a pool from which the conservative prejudices of his countrymen naturally preclude all but men of mature years. Compared with the results of the boat race between Oxford and Cambridge, or the standing of his college on the University cricket-field and the river, political contests are simply side-shows, convenient for betting, because he is sure neither party will "throw" the race. If wealthy and ambitious, he may look forward with some interest to the day when a constituency of whom he scarcely knows anything may choose him to represent a borough of which he knows still less. But his political influence is all in the future.

Across the channel, however, his vivacious French neighbor is his very opposite in that respect. A Parisian student is a fair type of a French student; or, rather, all French students are cheap and feeble imitations of Parisian students, and every Parisian student is a politician. Untrammelled by any restraint from his parents, who may live almost anywhere in the provinces, he makes the affairs of the nation his sport and diversion. Under the first Empire, a writer who studied law at the University of Paris at that time, says that "out of fifteen hundred young men who nominally followed the lectures, scarcely fifty studied seriously. The others gave themselves up to pleasure, or sought amusement in miscellaneous reading. They generally contented themselves with going to the school to answer to the calling over of the muster-roll, after which they disappeared." Sometimes they would not even take that trouble, but arrange with comrades to answer to their names, and even to pass examinations for them. A man who made a paying business of the latter arrangement was once

arrested by the authorities, but eventually discharged, on account of lack of penalty provided by law. Professors generally winked at these practices, which are not yet entirely things of the past. Part of the leisure thus obtained is spent in coffee-houses and club-rooms, where the students imbibe those extreme liberal ideas for which, as a class, they are distinguished. When he goes back to his father's vineyards, the student may and commonly does settle down into a staid, common-place, conservative old agriculturist, but while at Paris he is simply and wholly a student, possessing those opinions characteristic of his class, and holding them with a temporary intensity and sincerity which may make him a factor of great revolutions or of a hopeless and rash uprising, a political leader or a mark for bullets behind a barricade. In times of peace he makes himself felt in continuous gibes and slurs at any government which does not suit his notions. Under the second Napoleon a statue of that ruler was installed with great solemnity and adulation in the amphitheatre of the Law School at Paris, only to have its nose knocked off the next day. Although the event was immediately magnified into a conspiracy, and hundreds of students were taken before the police and examined, no clue to the perpetrator could be found.

In his neglect of study, at least for the first year or two, the German student bears considerable resemblance to his French aversion. He, however, is on better terms, as a general thing, with the authorities. If "pulled in" for any offense he is simply called upon to hand his student's card, a sort of certificate of identity, to the magistrates, and permitted to depart. In a few days he receives a notice of the number of days he must spend in a special student's prison, to expiate his offense, and is, unless guilty of some grave misdemeanor, permitted to arrange the date of his time of confinement to suit himself, which he does with probably similar feelings to those of an American student making up a condition. He delights in playing innocent little tricks on the police; as, for example, two students will procure a plank, and, each tak-

ing an end, will solemnly promenade the streets at dead of night until arrested by some vigilant patrol, taken to a police office, whence, nothing being proved against them, they are ultimately permitted to depart and victimize the next patrol. It is said that the profanity of a police magistrate who sees the same two students and plank appear before him for the *n*th time in one night, is simply stunning. This little joke reminds one of a standard sell of our friends the Parisian students, who like to take a long line and stretch it across some populous street, keeping back vehicles with the potent words, "government survey;" then the student at each end of the line permits some officious bystander to hold his end for him "just a minute," and makes himself scarce, leaving his dupe to take the general maledictions of drivers and pedestrians, until some genuine official comes along and comprehends. Odd as it may seem, this trick is rarely known to fail.

The title of Russian student at once suggests to the mind all the terrors of Nihilism and dynamite. The Russian students feel that in their country they are the advance-guard of liberty, and they have the people at large behind them; consequently in no country are the students so distinctively a caste extending through the whole nation as in Russia. When trouble arises between the students of one university and the government, as is often the case, deputies are sent to discuss matters, and offer such aid as they can give from the others, and so the solidarity of the students all over the country is maintained. This is also intensified by the suspicion with which they are regarded by the government, and the share of the latter in the management of the colleges. Thus, when in '79 the students of the St. Petersburg universities marched in a body to the Anitchkow Palace, to present a petition for the removal of an unpopular instructor from his position as one of the judges in a university court appointed to try a dispute between himself and some of the students, the police became alarmed at the long procession pouring over the Neva, and put a stop to it by disconnecting the bridges across

that stream. This, of course, prevented the head of the procession from returning; and so while the leaders of the movement were promising the chief of police to go quietly home if he would present their petition for them, his subordinates were making it impossible for them to do so, and the whole thing resulted in great inconvenience to the citizens at large, and rumors of insurrections and risings among the students, which terrified the peaceable townsmen exceedingly. The next day a considerable number who were standing before the Medico-Chirurgical Academy, again aroused official fears, and not obeying the order to "move on," or its Russian equivalent, with sufficient celerity, troops were called out, and a fracas, wholly unprovoked, ensued, in which large numbers of the students were wounded. Naturally such unwarrantable and vexatious annoyance as this raised an indignant protest among Russian colleges generally, which did not subside for some time.

Crossing the Atlantic again, we find in our neighbor on the south the most striking illustration of what the educated youth of a country can do when sufficiently interested and properly organized. Space will not permit more than a brief account of the marvelous events in Mexico in the month of November, 1884. For the first time in the history of Mexico, the practical dictator of the country's fortunes was defied on the floor of that congress which hitherto had been merely an assembly met to confirm and register his decrees, and that by a young man but just graduated from college. When Miron boldly exposed the inexpediency of the finance bill submitted by the president in a half-hour's ringing speech, it seemed like signing his own sentence of death or banishment. But a force which hitherto had never even been heard of, arose like magic to support the champion of popular government. The students who throng in the City of Mexico, and spend part of their time idling in the galleries of the national chamber, were electrified by the daring and brilliancy of one who had so recently left their ranks. In twenty-four hours they had organized

to support him, arousing the people, and urging members of the assembly in circulars thrown from the galleries to support Miron's suggestion of postponing action on the bill until after Diaz's inauguration. Armed with pistols they boldly defended themselves against policemen and soldiers, drowned with their outcries every voice raised on the floor in favor of the obnoxious measure, and secured, for the time being at least, the postponement of the bill. To-day, in a country where there is practically no middle class, and but a weak upper one, they are the strongest bulwark of the liberties and progress of Mexico. Let us hope that if ever the elements of anarchy which have so recently displayed their strength and object become strong enough to seriously menace the welfare of our own nation, American students will be equally prompt to fall into line in defense of law, order, and constitutional government.

Manual Training.

AMONG the many improvements and modifications to our present educational systems is that of manual training, which has not, until quite recently, attracted much attention, but which has of late been quite earnestly discussed by many prominent educators of the day.

The question which is most hotly contested is this: Is manual training necessary and beneficial in connection with a school where other branches of study are pursued? or, in short, is it necessary to a general yet thorough education?

Some, opposed to manual training, claim that working in the carpenter or machine shop diminishes the interest which would otherwise be manifested in the academic or school branches.

This is a very important question, and can be best answered by those most experienced in this kind of schools. Director Woodward, of the St. Louis Manual Training School, states that his experience of eight years leads him to the conclusion "that not only does the workshop not detract from the interest boys take in

books, but it stimulates and increases it either directly or indirectly." He also believes that even the mental discipline acquired by shop-work is so valuable, that "to all students, without regard to future prospects in life, the value of the training which can be had in shop-work, spending only eight or ten hours per week, is abundantly sufficient to justify the expense of materials, tools, and teachers."

The opposing party denounce manual training as the "bread and butter" view of educating, and accuse its advocates as trying "to make the mass of mankind more machine-like than they already are, more skillful to increase the wealth and to feed the channels of the manufacturers' profits."

But this is a most mistaken idea. They seem to forget that the ever-changing conditions of modern life demand an equally balanced and more comprehensive education. They do not fully understand, as Dr. Henry H. Belfield, Director of the Chicago Manual Training School states, "that the education which the manual training-schools represent is a broader, and is not, as the opponents of the new education assert, a narrower education. It is the present system that largely fails to recognize the trinity of human nature, and is therefore a 'one-sided system.' Too long have education and the knowledge of books been regarded as synonymous; whereas, literary culture is only a part of education. Education is the training of the brain and of the body, the just and harmonious development of each part of every organ. The development of one part of the human organism at the expense of the other parts, or to the neglect of the other parts, is a partial education, whether done by the athlete or by the student."

Consider how many of our so-called educated young men, "even graduates of our high-schools," are totally ignorant of the simplest principles regarding the construction of our various machines and their practical applications; while the manual training school-boy "gazes with delight on the marvels of mechanism, wrapped in admiration begotten of a thor-

ough understanding of its construction, and strong in the consciousness of his mastery of it."

It is a humiliating thing to see a grown man content to employ, year after year, methods and forces of which he does not care to understand. Yet this is what the mass of mechanics do; while, on the other hand, the mind of the training-school pupil is kept constantly alert; when one principle is mastered he passes to another, his shop exercises being as carefully systematized as are his lessons in algebra and geometry.

"And here is the mistake of those who would degrade a manual training-school into a manufacturing establishment. The fact never ought to be lost sight of for an instant that the product of the school should be, not the polished article of furniture, and the perfect piece of machinery, but the polished and perfect *boy*." Or in other words: "The acquisition of industrial skill should be the means of promoting the general education of the pupil; the education of the hand should be the means of more completely and efficaciously educating the brain."

Yet not only for this purpose should manual training be urged, but, as Herbert Spencer claims, the primary object of education is to obtain that knowledge which leads to self-preservation, so will manual training, as it teaches the general principles of the mechanical trades, enable every boy to maintain himself in honest independence.

But manual training does not only teach the use of the carpenter's, blacksmith's, machinist's, and in general the mechanic's tools, but is a means of creating an equilibrium in our mental and physical health, and is a medium toward making our education more practical, and therefore more complete and equally balanced.

Manual labor is conducive to a sound mind in a healthy body, in that it counteracts the nervous effect produced by taxing the mind.

Manual training not only serves as a change of occupation from the regular school-work, but as such, is a means of refreshing and strengthening the mind. Another advantage which may

be credited to manual training is the following: By personally working at the bench or anvil one becomes aware of the skill and judgment which a good mechanic must possess, and thus, by personal experience, we learn to respect the workman or mechanic as a man of much judgment, and thus learn to appreciate his work as the result of much skill and practice.

Manual training has recently been introduced into the schools of Chicago.

Aside from public schools, there now exists in that city an institution that is known as the "Chicago Manual Training School," which is in a flourishing condition, whose success has been looked forward to with the deepest interest, not only by Chicago people, but by all the educators of neighboring states.

In accordance with the statements of Dr. Henry H. Belfield, "the Manual Training School is a school in which the pupil may acquire the elements of an English education and fit himself for the further pursuit of knowledge. In it he is introduced to the masters of literature, and has a glimpse of the vast fields of learning which lie before those who hunger after more than that bread which supports the life of the body. In it he gains a knowledge of the laws and forces of Nature, wresting her secrets from her by actual experiment. He learns to convey to others many of his thoughts in the ancient and expressive language, the language of drawing.

He is brought into contact with the grand ideas of modern life, as concentered in modern machinery. He lays the foundation of good scholarship and of good artisanship. He learns to think, but he also learns to work. He is able to do something with his hands as well as to answer questions. He learns to appreciate culture and refinement, but he also learns to respect labor and to reverence true manhood, whatever may be its outer garb. He is fitted to enter the ranks of the great army who are able to fight their own way in the world, to win honorable positions by their own unaided powers."

EXPERIENCE.

Absolute Purity.

The lilies white by sluggish water's side,
 Their petals opening to the glancing sun,
 Doth stand for purity, and there abide
 'Mid vile decay, as spotless as a nun.

The modest maid that on her father's isle
 No stranger's glance was ever known to scan,
 Is surely pure. No guilty human wile
 Has caused on her to rest suspicion's ban.

But if you will not in fair nature trust,
 And seek for purity among the arts,
 The Cleveland Royal Baking Powder must
 The want supply. For sale in all the marts.

J. E. SIMPSON.

An English Schoolboy's Letter.

THE following is the substance of a letter written by an English boy, twelve years old, who was attending a boarding-school in England. I was unable to procure a copy of the original, but obtained a few ideas from hearing it read, and present them, as they seemed very original and amusing.

Jan. 11, 1886.

Dere Mother:— I wright to tell you that I've got the chilblanes and that they are growing worser every day. I dont like it very well here at school cause the boys (most of them) are very rough and rude, but of course you didn't know that when you sent me here and I aint blameing you enny. One of the boys made the crown of my hat (a new hat to) a target the other day and I haven't got any new hat enny more. Another boy said he could make a nice water-wheel out of the wheel of my watch so we took it apart. He didn't make the water-wheel though and we cant get the watch together again and think we've lost one of the wheels. The eating here is horrible and this peace of meat I enclose is a sample of what we had Sunday. Its about the same week days only more stringy. Theres beetles to down stairs in the kitchen which sometimes get cooked in the eatables which aint very healthy especially when you aint strong. One of the boys has trained one of them and he sits upon his hind legs and dances to the tune of "Down in the coal mine." I suppose it reminds him of

home. I am glad Matilda's cold is better and I'm glad you and father are all comfortable even though I aint feeling very well. I think I've got consumption and dont think I shall last very long. Plese send on some money. I owe 8d, and havent got enough to pay it. If you think it is too much I guess I can borrow it of a fellow who is going to leave this quarter and wont come back so he cant ask for it again. Perhaps though you wouldn't like to be under any obligation to him as he is a tradesman's son and I think you trade with his father to but I dont know. Plese answer this letter anyway before he leaves. My trousers are all worn out at the knees and the buttons are all off my coat and its burstin behind. I think that tailor cheated you. Give my love to all who enquire after me and keep some of it for you and father and Matilda.

Your dere son,

TOMMY.

s. s.

The Annual Drill, C. C. M. I. T.

The annual battalion and prize-drill was held in the large hall of the Charitable Mechanic Building on the afternoon of Saturday, May 15th. An enormous crowd of spectators, including officers of other school battalions, and many ladies, was present. The line was formed promptly at two o'clock for a half-hour's battalion drill; and this was followed by the company drill for the prize flags, in which each company was allowed fifteen minutes. The sabre squad, under Maj. Fiske, next had the floor, and gave a good exhibition. Then came guard-mounting, with Capt. French as the officer of the day.

Adj. Smith drilled the squads for the individual prizes. Thirty-two were entered in the competition for the first and second prizes, and seventeen for the special prize for those who had never drilled before entering the Institute.

After the dress parade, in which the drum-corps were quite noticeable, Gen. Walker awarded the prizes. Company D, Capt. Mil-dram, received first prize, and Company A, Capt. French, second prize. The first and second individual prizes were awarded to Serg't

Van Nostrand of Company D, and Corp. Goodrich of Company A, respectively. The special prize was taken by Private Amory, of Company A.

The judges were Col. Austin C. Wellington, 1st Infantry; Capt. Isaac H. Houghton, 5th Infantry; Capt. James H. Barry, 9th Infantry. Baldwin's Cadet Band furnished music, and dancing followed the drill. The Company prizes were silk flags presented by '88. The individual prizes were gold and silver medals. The battalion drill was better than in previous years, and guard-mounting was introduced for the first time.

Society of '87.

The Society of '87 held its last meeting of the year at the Parker House, the night of May 14th. Preparations had been made to make this meeting one of unusual interest, and the result was highly gratifying. There were forty present, including Mr. G. W. Davenport, a former president of the class. The board was embellished beyond all precedent, cold meats, salads, fruits, and ices appearing and disappearing with marvelous rapidity, while there was evidently some sleight-of-hand done with a couple of punch-bowls. When all were full, Mr. Kirkham, as master of ceremonies, requested Mr. Spaulding to introduce, in a few appropriate remarks, whoever was called upon. Mr. Spaulding did the elegant for Messrs. Sprague, Patterson, Bullard, Wakefield, Brace, N. B. Smith, Underhill, Sturges, Shortall, Carleton, Schwarz, Brainerd, and others, who gave an excellent variety show of songs, speeches, piano solos, recitations and experiences, the utmost good-fellowship prevailing. The entertainment closed with a few selections from the Mikado ballet. Mr. Taintor was absent, but fortunately he was found in time to deliver a saluta-vaedictory address from the steps of Rogers'.

The Norfolk route offers special rates and unexcelled accommodation to professors and students of the Tech. Office, 290 Washington Street.

Brown, 12; Technology, 3.

Union Grounds, May 17th. The Bijou team now has a record of eight successive victories for the other side. Lots of money changed hands on the result of this game. Thomas was hit hard, and this gave the outfielders a fine chance to display their skill. In the first inning the boys lost a chance to score by wretched coaching. The base-running was poor throughout the game. In the fourth inning the Techs passed a chance for a double play as though it was beneath notice, and the Browns batted once around and two over, scoring seven runs. Clement made a fine catch of a foul fly in the fifth inning. In the sixth, Spencer pitched a few balls, but unfortunately Gunderson quickly came back to his box. Cooke caught a difficult fly in this inning.

BROWN.

	A.B.	R.	B.H.	T.B.	P.O.	A.	E.
Grime, 3b.	6	2	1	1	2	1	2
Brownell, 1b.	6	1	3	4	12	0	1
Clarke, c.	6	2	1	2	7	1	4
Gunderson, p.	6	1	2	3	1	10	4
Warren, l.f.	5	1	0	0	2	0	1
Cooke, 2b.	5	1	1	1	3	1	1
Blaisdell, c.f.	5	1	1	1	0	0	0
Spencer, s.s.	4	1	0	0	0	3	2
Hunter, r.f.	5	2	3	5	0	2	0
	48	12	12	17	27	18	15

TECHNOLOGY.

	A.B.	R.	B.H.	T.B.	P.O.	A.	E.
Thomas, p.	5	1	1	2	0	9	3
Carleton, 2b.	5	0	0	0	3	5	2
Clement, c.	5	0	1	1	11	1	6
Ayer, 3b.	5	0	2	4	1	1	1
Kendricken, l.f.	4	1	1	1	1	1	2
Smith, s.s.	4	0	2	2	1	2	4
Marcy, r.f.	4	0	1	2	0	0	0
Ewen, 1b.	4	1	0	0	8	1	1
Billings, c.f.	4	0	1	1	2	0	2
	40	3	9	13	27	20	21

Earned runs—Brown, 2; Technology, 1. Stolen bases—Grime (2), Clarke (2), Warren, Cooke, Blaisdell, Spencer, Thomas, Carleton, Clement, Ayer. Left on bases,—Brown, 10; Technology, 11. Base on balls—by Gunderson, 1; by Thomas, 1. Struck out—off Gunderson, 3; off Thomas, 5. Wild pitches—Gunderson, 2; Thomas, 2. Passed balls—Clarke 1; Clement, 2. Time of game, 2 hours, 30 minutes. Umpire, J. F. Green.

Concentration.*(From the German.)*

Thou hast a thousand friends, I ween,
 And home and ties. Ah me!
 I have no thousand friends to love,
 For I have only thee.

Thou hast a thousand miles to roam
 All earth, the land, the sea:
 Forever here must I abide,
 In dreams to follow thee.

Thy heart is large enough to love
 Thy thousand friends. Ah me!
 My heart is just as large as thine,
 Yet I love only thee.

Oh! love thy friends, thy journeyings,
 And all things fair to see,
 But, love, remember through it all,
 That I love only thee.

—ANON.

Noticeable Articles.

The *Quarterly Review* for April is an unusually interesting number. First comes a pleasant article on the old Mediæval chronicler, Matthew Paris, by that pleasant old antiquary, Rev. Dr Jessopp. Students interested in the details of English history should read his history of Norwich Cathedral in the series of Diocesan Histories, published by the Christian Knowledge Society, — a society which publishes so many valuable works. In this article we get a vivid glimpse of the life of the great mediæval monastery of St. Alban's, where Matthew Paris lived and wrote his great chronicle, and we can form some conception of the great part played by the monasteries in the intellectual and moral life of the Middle Ages. We get also some idea from Dr. Jessopp's account of the effect in reconstructing all our notions of mediæval history, and rendering even Hallam (and much more Hume) obsolete, which the vast undertaking of the British Government has had, — the printing of these chronicles and other mediæval records, in a series of handsome volumes, already over 200 in number, and the publication of which is still going on, — the "Rolls Publications," so called because issued under the supervision of a legal dignitary called the Master of the Rolls. Every careful reader of English history knows what a storehouse of valuable information the Prefaces by the learned editors of these volumes are, even when he has not the time or ability to read the monkish Latin of the chronicles themselves. The general reader, however, will find the best of them translated in Bohn's Li-

brary, and no one will really understand the Middle Ages who does not at least dip into their entertaining pages.

From mediæval we pass to modern times in the review of two recent noteworthy books of travel, the "Oceana; or, England and her Colonies," of Mr. Froude the historian, and "Through the British Empire," by the Austrian Baron Hübner. Of the first the reviewer says: "No one record of travel in a hundred deserves to be mentioned in the same breath with it; there are not very many books of the kind in the language which excel it in variety, in vigor of style, in picturesqueness of description, or in vivid glimpses of insight into personal character."

But the article that will prove of most interest to the general reader will be the one on Books and Reading, on which subject a great many writers seem just now to be uttering, some their wisdom and others their folly — Mr. Ruskin, for instance, who thinks that "any bank clerk could have written Grote's History of Greece," and who has nothing to say of Gibbon except that he is the chronicler of "putrescence and corruption." Surely Mr. Ruskin, with all his genius, is the greatest of literary cranks. Of the lists of "hundred best books" which Sir John Lubbock and other distinguished men have recently busied themselves with making, the writer gives this sensible opinion: "To make a choice of certain one hundred books for any man's persual in his youth or afterward is but a feat of cleverness, arousing curiosity or wonder, but evolving nothing — ending in the choice. A man may be possessed of any number of good books, and possibly a thousand might be selected, all of which would be by general consent called excellent and worth possessing, and perhaps he would be none the better for them all. Young men do not require a hundred books at once. Indeed, the fewer well-selected books a youth has to begin with the safer he is against excessive loss of time: . . . the student's care should be to read as little and to think as much as possible."

The truth is, that the art of finding his way about among books, is one in which the beginner may be judiciously assisted, but one which, in the end, every true student must absolutely learn for himself: to learn it, indeed, is to *be* a student in the genuine sense of the term. If you ask me what are the best books on a given subject, the question is intelligible, and I ought to be able to answer if I have really studied the subject; but to ask what are the hundred best

books in general is about as unmeaning as to ask what are the hundred best things in general.

The present writer certainly did not write the article in the *Quarterly*, but readers of THE TECH will recognize a familiar sound in the following: "How often has the young inquirer been imbued with a distaste for solid literature by being compelled to read 'masterpieces' long before he was able to appreciate their value, or even to comprehend their history! The system at many of our schools is much to blame in this respect. There are, we believe, comparatively few boys who acquire, until they seek it for themselves, even the roughest general outline of the world's history to which their various episodic studies may be applied, so that each may fall into its proper place and order. 'Periods' and 'Epochs' are studied without any knowledge of the grand structure of which each forms but a single fragment; and history is too often divorced from geography. . . . The Historical List which we have proposed should be prefaced by a chronological table indicating the epochs into which the world's history divides itself, and the periods covered by each of the works recommended. This would give the student a bird's-eye view of the field which he is about to explore, and enable him at any moment of his exploration to take his reckonings and verify his position. . . . If, to this main stem of history there be added the due complement of branches and leaves — memoirs and biographies — the Plutarchs and Pepyses, the Walpoles and St. Simonses, the Crokers and Grevilles of each generation, we should have a tree of knowledge that would yield to none in interest and utility. . . . Lord Erskine, we are told, was in the habit of making long extracts from Burke, and Lord Eldon is said to have copied out Coke upon Littleton twice, with his own hand. 'Writing an analysis,' says Archbishop Whately, 'or table of contents, or index, or notes, is very important for the study, properly so called, of any subject.'"

The current number of the *New York Nation* (May 13) is full of good sense and sound doctrine on the labor question that is now agitating the country.

W. P. A.

Bicycler to rural individual: "How far is it to Blankville?"

"Wall, for a hoss'n kerridge it's a good three mile, but for one of them blamed things I guess it ain't more'n a couple o' hundred rod. Fust road to th' left, mister, then keep ahead t'l ye get thare."—*Record*.

COMMUNICATIONS.

The editors do not hold themselves responsible for opinions expressed by correspondents.

MR. EDITOR:—

Now, at the close of the school year, is a good time for the students to look back upon the work they have done since September, and to look forward to next year, to try and correct the faults they have observed in their departments. With this in view, will you kindly allow us a little space to suggest a few reforms badly needed in the Architectural department. Briefly: We feel that the Faculty should be careful in their selection of an instructor to take charge of the drawing-room. He should interest himself in the students' work in such a manner as to gain their good-will, respect, and hearty support. In this, we are sorry to say, the present instructor has utterly failed, and we must admit the fault was not *all* his.

We think that there should be better order maintained in the drawing room; neither the order of a primary school (which was tried this year, and failed), nor the noisy frolics of some of the "*younger pupils*," but a sensible mean should be chosen. Then, if the Vandalism (I know no better word) attendant upon these frolics of the "*younger pupils*" cannot be stopped by the heads of the department, the older students should combine to "sit upon" this recklessness which has ruined or damaged so many valuable casts, models, and books belonging to the Institute.

There should be a set time at which each problem should be handed in, and on *no account* should this time be extended; and *no* problem not handed in at this time should be credited. The students who work hard and finish their problem on time, only to find that the time has been extended two or three weeks at the request of some of the easier workers, have not a fair show when their quickly studied designs are placed beside those which have had twice that length of study given them. Promptness receives poor encouragement with such an arrangement.

Last, but not least, is the matter of criticism. Quoting from the catalogue of the Institute, "Each set of drawings is examined and criticised before the classes." This should either be omitted from the catalogue, or else put into the department. In fact, not once this year have the designs of the first-year class been criticised at a time when school exercises

would allow the whole class to be present. It has strangely happened that the regular students have been the ones who have been obliged to attend recitations while their designs were criticised before the special students. No wonder there are so few regulars in our course!

We suggest these "reforms" to our professors and fellow-students, and any *bona fide* improvements in the "platform" of our course will receive the hearty support of

"THE ARCHITECTURAL MUGWUMPS."

List of Publications, M. I. T.

MASS. INSTITUTE OF TECHNOLOGY. — Entrance Examinations, 1886. Circular, 4 pp.

ALUMNI ASSOCIATION. Constitution, List of Officers, etc., 1886. Pph., 8vo, pp. 8. Boston, 1886.

CLASS OF '77. Class Directory, 1886-87. Circular, 3 pp., 8vo.

CLASS OF '84. Third Annual Directory, March, 1886. Pph., sm. 8vo., pp. 13. Boston, 1886.

ANDREWS, C. W. (Instr.) See Norton, L. M.

HINMAN, CHAS. W. ('70). *Annual Report as State Inspector of Gas and Gas-Meters*. Mass. Public Document, House No. 45, 1886. Pph., 8vo, pp. 18.

HOLMAN, S. W. ('76). On the Effect of Temperature on the Viscosity of Air and Carbon Dioxide. (2 plates.) *Phil. Mag.* (5), XXI., 199. (March, 1886.)

LUQUIENS, JULES (Prof.) French Prose of Popular Science and Descriptive Literature. 8vo, pp. 419. Boston, 1885.

MINOT, CHAS. SEDGWICK ('72). The Rotifera. Review. *Science*, VII. (1886), 402.

NORTON, L. M. (Certif. '75) and C. W. Andrews. The Action of Heat on liquid Paraffines. *Am. Chem. Journ.*, VIII. (1886), 1-9.

SEDGWICK, W. T. (Prof.). An Alcoholic Drip for the Thoma-Jung Microtome. *Am. Naturalist*, May, 1886, pp. 488-490.

WEAD, CHAS. K. (Certif. '72). Oil on troubled waters. Note. *Science*, VII. (1886), 214-216.

CHAS. W. DABNEY, Jr., formerly a special student at the Institute, has been contributing a series of articles on Slow-burning Construction, to *Building*, (N. Y.)

"Please help me to alight," she said, as she stood in the dog-cart, waiting for assistance; and he absent-mindedly offered her his cigar. — *Ex.*

To the Author of "Rot."

"The handkerchief! * * * The handkerchief?"—*Othello*.

[See last TECH.]

Though that dainty piece of linen
May be handy for a cold,
I will yield it to you, with a sigh.
There'll be gore upon the moon
If I meet you very soon,
You may need it to bind a black eye.

—DROMIO.

Calendar of Commencement Exercises.

Friday, May 28th. 7.30 P. M., reception to Senior Class by the Alumni Association, at Young's Hotel.

Monday, May 31st. Class day.

10.30 A. M., exercises by the graduating class, in Huntington Hall.

2.30 P. M., dance and promenade concert in Kidder Hall.

8 P. M., Commencement dinner of Senior class, at Young's Hotel.

Tuesday, June 1st. 3 P. M., graduating exercises, in Huntington Hall.

The following resolution was sent to Prof. Gray, of Harvard, by the committee appointed by the class of '86:—

Resolved, That the class of 1886 entertain a high sense of the value of the course of lectures in law delivered during the present term by Prof. Gray, and that they desire to express their sincere thanks for his uniform courtesy, and for the pains he has taken to make his instructions interesting and agreeable, as well as profitable to the class.

C. WOOD,

W. M. TAYLOR,

THEODORE STEBBINS,

Committee.

"You told me, Arthur, that your doctor advised you to drink whiskey. Has it done you any good?"

"Well, I should say so. I got a barrel of it two weeks ago, and I could hardly lift it; and now I can carry it about the room.—*Good Cheer.*

Technics.

A terrible bore—The dentist.

A hard case—A tortoise-shell.

O tired and old looked the Freshman bold
As he came from his fourth exam. ;
And, dreadful to say, as he went away,
He uttered a big, big "*d — n!*"

But the Sophomore, as he left the door
Of Room 22, *N. B.*,
Looked volumes, they say, as he crawled away,
But never a word spake he.

"Lick behind," as the small boy said to the
teamster who was trying to stamp a letter.

A Freshman wants to know why *drilling*
should be compulsory for any not intending to
take Course III.

And now the boding student would like to
say to each instructor, as the Irishman did to
his wife: "Be aisy, now; an' if ye *can't* be
aisy, be ez aisy as ye can!"

Professor X. has just finished an elaborate
witticism. *McToodle (who has been half asleep)*:
"Professor, will you please explain the last
part of that again?" Sensation.

First Chemist: "What's the matter with you
now? Can't you get a check on that analysis?"

Second do: "Yes; it's a check on the bank
I can't get now. My pater has struck."

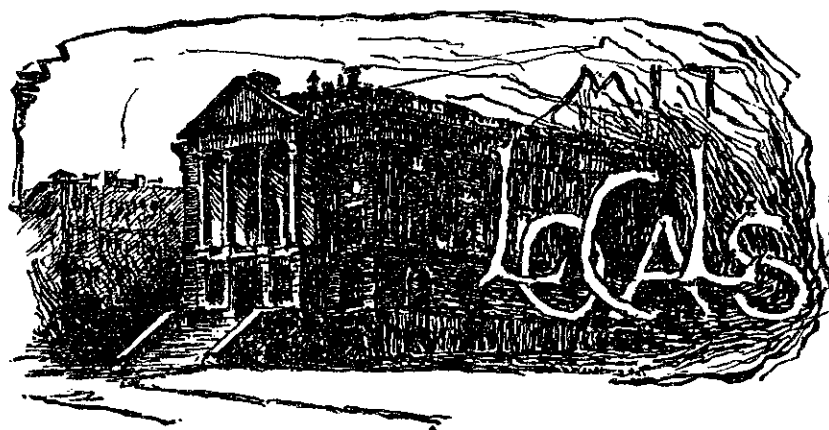
Tuffy 89 (indignantly): "You seem to
think, Miss Crusher, that I have no ideas on
any subject whatever!"

Miss C. (deprecatingly): "Oh, no; I think
perhaps you could write a very good *autobiog-*
raphy."

It is said that the issue of free railroad passes
is a source of corruption among State legislators.
If any instructor will give us a free pass on
railroads, Applied Mechanics, and one or two
other little things, we will corrupt him to any
desired extent.

Lecturer: "As my time, gentlemen, is not
yet quite exhausted——"

Wearied Soph. (sotto voce): "That's where
we differ from the time."



SONNET — SUSPENSE.

The fight is over. Drawing, Chem., and Math.
Are laid aside. It is vacation now;
And yet an air of doubt is over all,
And grave expectancy clouds every brow.
Suspense — thine awful sway is felt by all,
By Junior, Sophomore, and Fresh alike;
All wait in solemn silence for the shock,
And wonder where the dreaded blow will strike.
At home, the student scanneth every mail,
His heart like fire, and his face like snow,
Lest he perchance discover there a note,
All printed neat, and signed James P. Munroe.
The end — will it be P. or F. or D.?
We'd like an Honor, but — we'll take a P.

Soon scores of "fresh" faces will be seen
around our stately halls.

'86 was photographed on the steps of Roger's,
May 13th.

Prof. William P. Atkinson and family will
spend July and August at Campello.

F. E. Foss, '86, will enter the employ of the
Minnesota & North Western Railroad.

For battalion pictures apply to captains. The
price is fifty cents, or half a dollar.

A movement is on foot to secure a special car
for those who go as far West as Cleveland at the
end of the term.

W. L. Brainerd, '86, will work in the office of
Allen & Kenway, the well-known firm of archi-
tects, in this city.

Classes and societies having group photo-
graphs taken should not forget to donate a copy
to THE TECH.

Mr. F. H. Morgan, '78, is to have charge of a
summer school of chemistry in the laboratories
of Cornell University. Circulars can be obtained
by application to F. H. Morgan, Ithaca, N. Y.



IF YOU GET WELL TANNED THIS SUMMER, DON'T CUT OFF YOUR WHISKERS TOO SOON, NEXT FALL.

Four members of the orchestra were invited to play for a private party at Waltham on the 11th, and were most agreeably entertained.

W. H. Chadbourn, Jr., '86, has been appointed chief engineer of the construction department of the W. C. & C. R. R., in the Carolinas.

It is when a man packs his trunk, after a lively term at college, that the principle of the "survival of the fittest" comes into active play.

The Athletic Club, at a meeting held May 15th, voted to loan the Tennis Association \$55, to be paid within six months, provided sufficient security were given.

Previous to 1871, the colors of the M. I. T. were purple and orange. The class of '73 changed them to cardinal and gray, which they have remained ever since.

Mrs. Prof Richards, assisted by Mrs. F. W. Clark, entertained the Senior Miners and Chemists and several members of the Faculty at her home, Tuesday, May 11th.

"Hell will have no terrors for me!" remarks a third-year miner as he issues from the assaying laboratory.

The statement made in the last TECH, which was copied from the daily papers, that Mr. F. R. Young, '86, was to be assistant in the mining and metallurgical laboratory next year was incorrect.

A worthy professor gravely requested the third-year men the other day to refrain from cheering in the entries, being apparently in total ignorance that such performances are confined to Sophs. and Freshmen.

The *Herald* for May 10th contained an illustrated account of the Chemical and Metallurgical departments, thus continuing the series of articles on the Massachusetts Institute of Technology.

In the designs for a bridge and boat-house pavilion, there were about twenty-four competitors. Messrs. Fuller, Proctor, Shattuck and Bates divided first honors, while Messrs. Aldrich and J. E. Chandler took the part of seconds.

Messrs. Prescott and Wakefield, of the Architectural department, did some very creditable work on the same problem that was given out in the competition for a design for a court-house in Toronto, Ont.

There was a baker's dozen of drawings of restorations of Pompeian houses submitted by second and third-year architects. Messrs. Atherton and Perkins received first mention, Mr. Kirkham, second, and Messrs. Billings and Regan third.

The influence of early training and association was clearly shown in the result of the competition drill. Probably nowhere is the schoolboy so universally associated with the soldier-cap as in and around Boston, and as a consequence the prize-winners were almost without exception Bostonians.

A yachting cruise along the coast of Maine during the month of July has been proposed. The schooner-yacht *Arethusa*,—stanch and sea-worthy—which went to Newfoundland and Labrador last summer, can be secured. Any one wishing to join such an excursion will please communicate with Mr. S. R. Bartlett, '86. A party of six is desired.

Professors Drown, Pope, Nichols, and Norton have each given the Chemists a list of the ten works considered most necessary for a chemical library. Only three books,—Fresenius' "Quantitative Analysis," Post's "Chemische Technisches Analyse," and Sutton's "Volumetric Analysis" have received unanimous recommendation, Four are indorsed by three out of four professors, four more by two of them, and the rest have only a single backer each.

The Foot-ball Association met May 12th and elected officers for next fall as follows: president, S. W. Bowles, Jr., '87; vice-president, G. C. Dempsey, '88; secretary and treasurer, Quintard Peters, '87; manager, W. L. Dearborn, '88; captain, M. W. Cooley, '87; sub-captain, S. Sturges, '87. An executive committee, to draw up a constitution and by-laws, and provide a training-table for the eleven, H. D. Sears, '87, W. L. Dearborn, '88, and N. Durfee, '89. Messrs. Bowles and Cooley were appointed delegates to represent the Institute at the convention of the league in Springfield, next October. The captain was empowered to select the team.

THE COLLEGE WORLD.

HARVARD.—The proposed trip of the crew to England will have to be given up, as it has been found impossible to make satisfactory arrangements with Cambridge.—The sophomores won the boat-race, closely followed by the freshmen and juniors, while the seniors were distanced.—The Hasty Pudding Club has been offered \$1,000 and expenses to repeat "Papillonetta" in Baltimore.—At a recent meeting of the Intercollegiate Foot-Ball Association, Harvard was re-admitted to membership. The following changes in the playing rules were made: the opposing center rush cannot touch the ball until it has been put in play; a kick-out must be by a drop, or a place-kick.—Baker, '86, and Rogers, '87, ran the 110 yards dash recently in 11½ seconds. This ties the amateur record.—The nine has made ten home runs this year, an average of almost one to each game.—At the spring meeting, Chamberlain, '86, threw the hammer 90 feet 1 inch, breaking the college record. Wright and Bemis broke the college record in the mile walk, making it in 7 minutes 1 second and 7 minutes 2 seconds respectively.—An annual prize of \$100 for the best dissertation on the topic of Universal Peace has been established. It is the income of a fund willed by the late Charles Sumner for the purpose.—The twentieth anniversary of the *Harvard Advocate* was celebrated Tuesday, May 10th. May the *Advocate* live much longer is our hearty wish.—It is not generally known that the *Harvard Crimson* is printed in its own office, and that two compositors are employed by the paper throughout the college year. Its circulation is between eight and nine hundred.—Base-ball: Harvard, 13; Williams, 2.—One hundred of this year's freshmen have utterly discarded mathematics.

YALE.—The first University Nine was formed in 1865. In 1868 Yale played her first games with college teams, defeating Columbia (46 to 12) and Princeton (30 to 23), and being defeated by Harvard (25 to 17). From 1868 to 1886 Yale has won, in the Yale-Harvard series, 24

games, and Harvard, 25.—The Faculty have voted that in case any serious disorder immediately follows any game, all intercollegiate contests during term time will have to be given up.—John R. Chainey, of London, a professional oarsman, is instructing the 'varsity eight. (*N. Y. Tribune*.)—A Yale alumni association was recently started in Brooklyn.—Prof. Dwight, of the Theological School, is the most popular candidate to succeed President Porter.—A post-graduate course in political science is to be established.—The juniors, for the third conservative year, won the class-race.—The 'varsity crew also rowed and came in a close second, although her regular men did not row; the freshmen were second, and sophomores third.—The only championship Yale holds is in lawn tennis, and she probably will not hold that long, as Knapp will not play this year.—Base-ball: Yale, 6; Brown 1.—Mr. Carter, '77, now a minister of the Congregational Church, was the best pitcher Yale ever had. He performed the wonderful feat of striking out twenty-seven Harvard men in succession, in a championship game. (*Columbia Spectator*.)

PRINCETON.—The Faculty are negotiating for the purchase of a piece of ground adjoining the athletic park, for the purpose of the latter's enlargement.—Princeton men are very anxious that the October tournament of the Intercollegiate Tennis Association be held there.—Six of this year's graduating class will take up journalism as a profession.—It is a matter of self-congratulation that Princeton has, during the past year, been successful in base-ball, foot-ball, and lacrosse in encounters with Yale, scoring since the beginning of June, 1885, four consecutive victories,—two in base-ball, one in foot-ball, and one in lacrosse. (*Princetonian*.)—Princeton is the only team that ever defeated Yale at foot-ball, and she has succeeded in this twice.—The senior class will give a memorial to the college, valued at \$1,000. What the memorial will be is not yet decided.—J. H. Hodge, says that lacrosse is good exercise for foot-ball men.—Base-ball: Princeton, 3; Harvard, 0.



He caught the maiden unawares
As she came tripping down the stairs;
Her golden head lay on his breast,
His lips upon her own were pressed
"Do not be angry, dear," said he;
"No, Georgie, dear, I'm not," said she.
"George! George!" he said with painful thrill,
"You are mistaken; it is Will."

[Two minutes later.]

Ahem! love is a double game;
She left her head there all the same.

—*Law and Order*.

Talented Senior: "Pardon me, Miss Budd, is it true that you are engaged to my classmate Charley Howard?"

Miss B.: "That's rather a pointed question."

T. S.: "Excuse my asking, but I am historian for our class, and am getting all the grinds on the fellows I can."—*Life*.

HISTORY REPEATS ITSELF.

On leafy Ida, long ago,
When beauty's daughters met,
'Twas Paris then that set the style—
And Paris sets it yet.

—*Yale Record*.

A CHANGE.

Before examination-time
The student shakes in his boots,
And, dark conditions to avoid,
He has to dig up roots.
But when the year comes round again
He appears in other rigs,
And, as a bold subscription-man,
He has to root up digs.

—*Yale Record*.

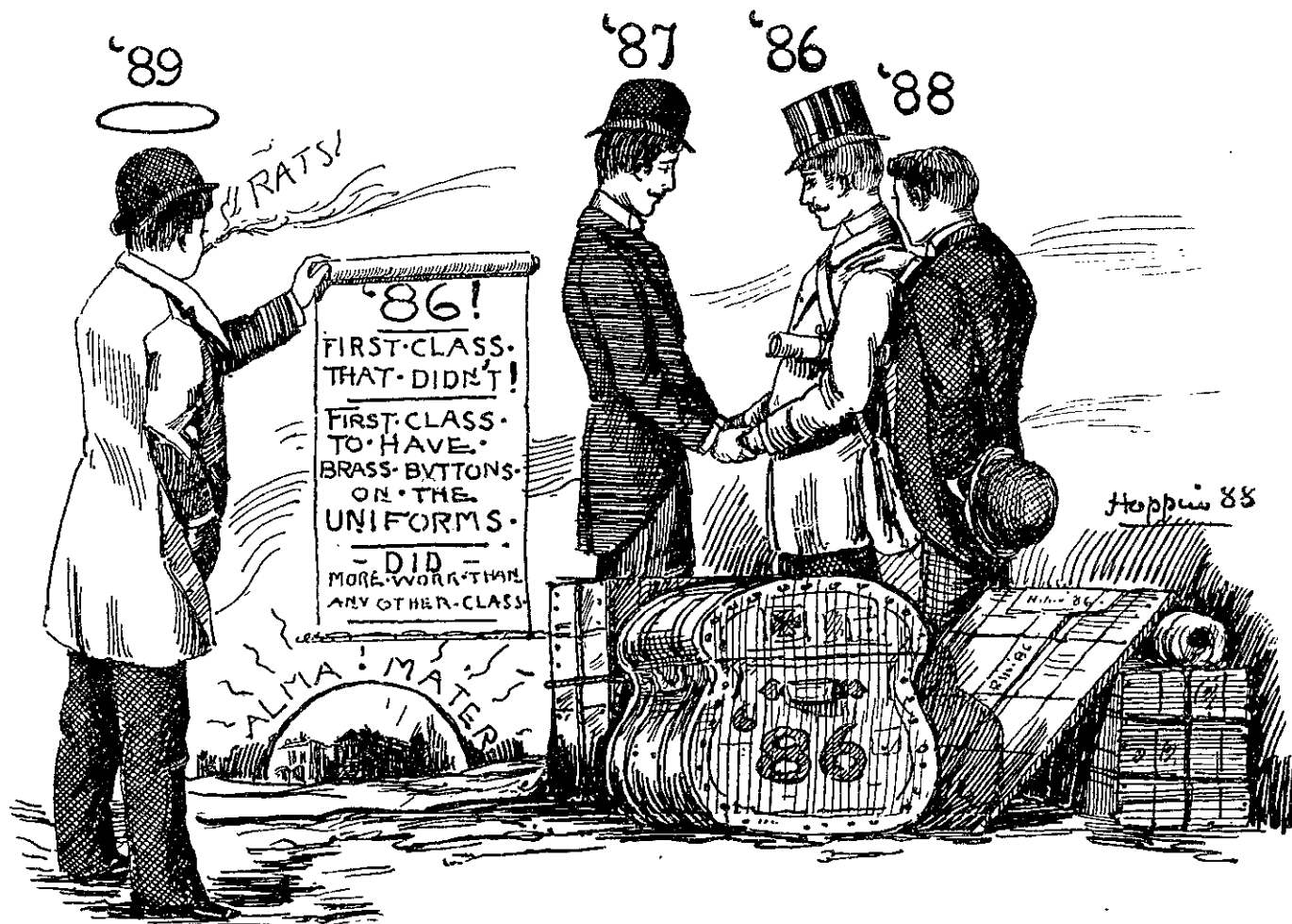
Little Tommy: "Can I eat another piece of pie?"

Mamma (who is something of a purist): "I suppose you can."

Tommy: "Well, may I?"

Mamma: No, dear, you may not.

Tommy: Darn grammar, anyway.—*Chicago Rambler*.



THE SENIOR'S FAREWELL.

REVENGE IS SWEET.

Small boy (to policeman in front of saloon): "Hey! hold yer breath; here comes der roundsman."—*Fudge.*

Nantasket beach was strewn with shingles Wednesday morning,—the result probably of a spanking breeze.—*Commercial Bulletin.*

From the small end of a horn—when tossed by a bull.

Lecture in Mor. Philosophy: Prof.—"Mr. R., don't you see the point?"

Mr. R.—"Yes, sir, I see it, and thought I made it clear to you."

("Shoe-tap" medley by the class.)
—*Brunonian.*

Lady (to her physician whom she has called from town to her country place): "O, Doctor, I am ashamed to have brought you such a journey; but I felt so wretchedly low that—"

Doctor: Don't mention it, my dear madame. Your neighbor, Mrs. Woodruff, is also a patient of mine, and I must see her while here. Kill two birds, you know, with—h'm! h'm—I mean—it's of no consequence."—*Ex.*

SOME HITHERTO UNWRITTEN HISTORY.

The following story comes from a school in the Midlands. The master told the boys of the third class to write a short essay on Columbus. The following was sent up by an ambitious essayist: "Columbus was a man who could make an egg stand on end without breaking it. The King of Spain said to Columbus: 'Can you discover America?' 'Yes,' said Columbus, 'if you will give me a ship.' So he had a ship, and sailed over the sea in the direction where he thought America ought to be found. The sailors quarrelled, and after many days the pilot came to him and said: 'Columbus, I see land.' 'Then that is America,' said Columbus. When the ship got near, the land was full of black men. Columbus said: 'Is this America?' 'Yes, it is,' said they. Then he said: 'I suppose you are the niggers?' 'Yes,' they said, 'we are.' The chief said: 'I suppose you are Columbus?' 'You are right,' he said. Then the chief turned to his men and said: 'There is no help for it; we are discovered at last.'"—*The London Standard.*

A weather-vain—the parasol.

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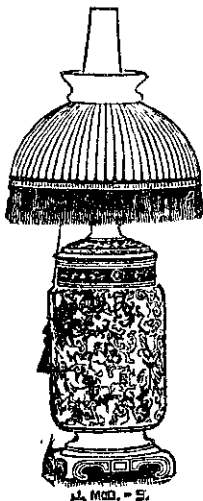
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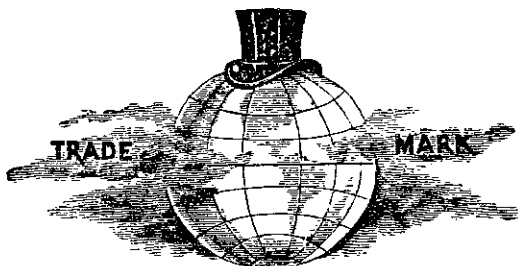
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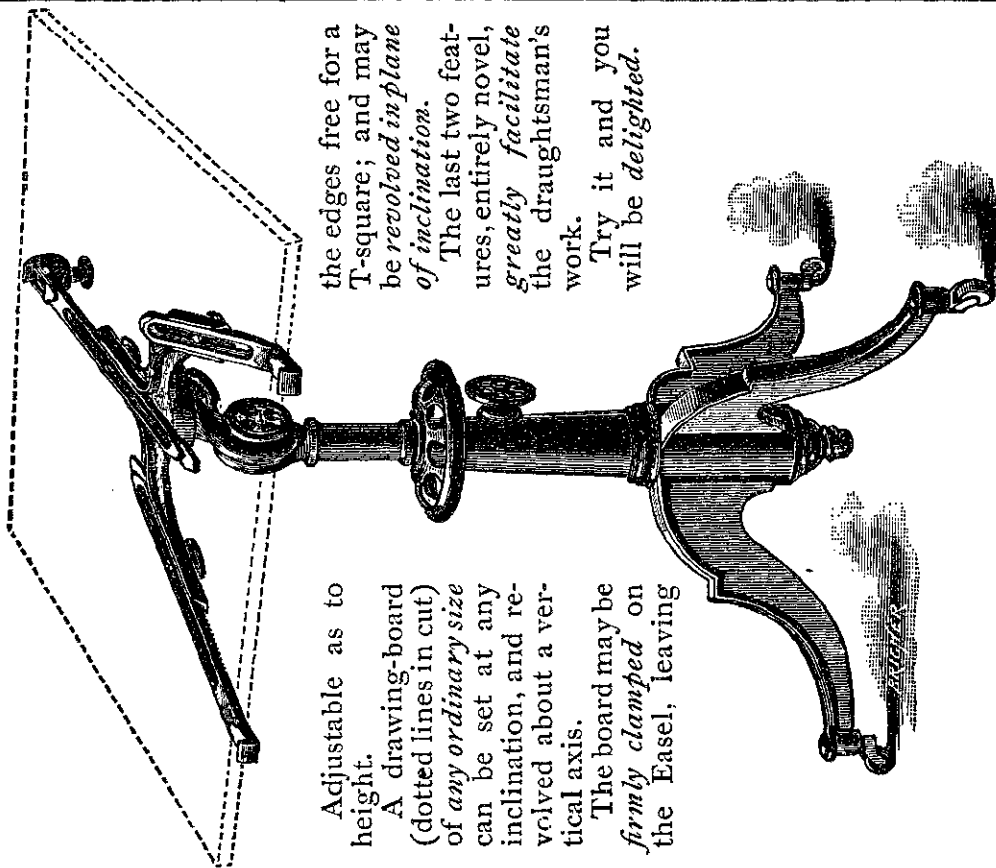
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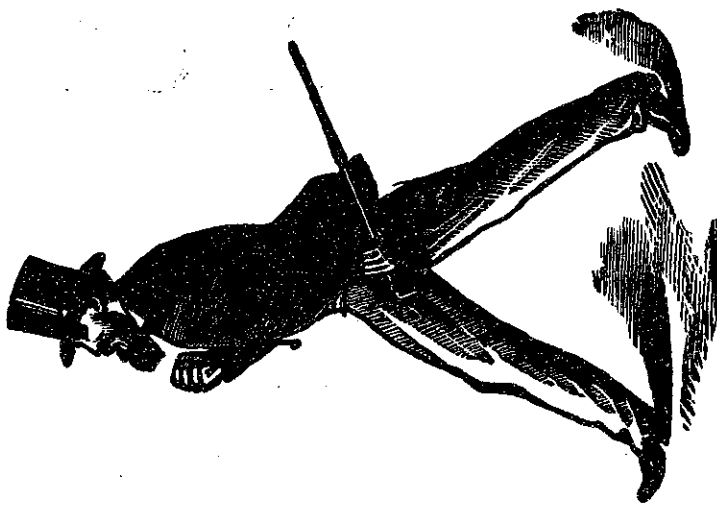
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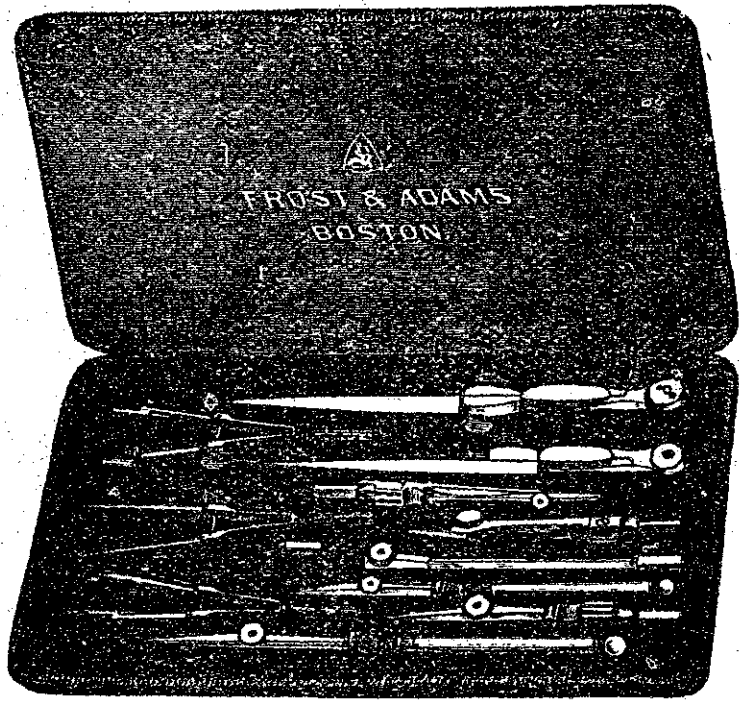
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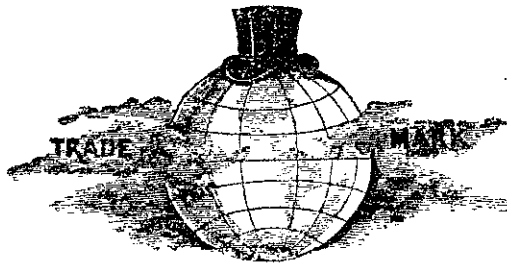
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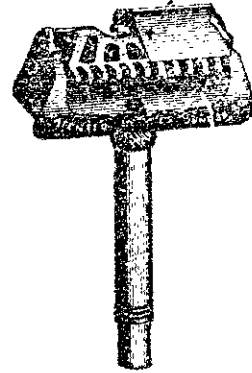
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Massachusetts Institute of Technology,

BOYLSTON STREET, BOSTON.

FRANCIS A. WALKER, President.

THIS school is devoted to the teaching of science, as applied to the various engineering professions; viz., civil, mechanical, mining, and electrical engineering, as well as to architecture, chemistry, metallurgy, physics, and natural history.

Besides the above distinctly professional courses, the Institute offers scientific courses of a less technical character, designed to give students a preparation for business callings. A four years' course in biology, chemistry, and physics has been established, as preparatory to the professional study of medicine.

Modern languages are taught, so far as is needed for the ready and accurate reading of scientific works and periodicals, and may be further pursued as a means of general training.

The constitutional and political history of England and the United States, political economy, and international law are taught, in a measure, to the students of all regular courses, and may be further pursued as optional studies.

Applicants for admission to the Institute are examined in English grammar, geography, French, arithmetic, algebra, modern history, and geometry. A fuller statement of the requirements for admission will be found in the catalogue, which will be sent, without charge, on application.

A clear admission paper from any college of recognized character will be accepted as evidence of preparation, in place of an examination.

Graduates of colleges conferring degrees, who have the necessary qualifications for entering the third-year class in any of the regular courses of the Institute, will be so admitted, provisionally, on the presentation of their diplomas, and will be given opportunity to make up all deficiencies in professional subjects.

The feature of instruction which has been most largely developed in the school is laboratory training, shop-work, and field-practice, to supplement, to illustrate, and to emphasize the instruction of the recitation and lecture room.

Surveying-instruments are provided for field-work in civil and topographical engineering. Extensive shops have been fitted up for the use of both hand and machine tools, and a laboratory of steam engineering has been established as a part of the instruction in mechanical engineering. Several steam-boilers and steam-engines of various types are available for experiments and tests, as well as a large amount of special apparatus for measuring power, for gauging the flow of water, for tests of belting, etc. The laboratory of applied mechanics contains two testing-machines,—one for ascertaining transverse strength, the other for tension and compression,—besides apparatus for time-tests on timber, for tests of mortars and cements, for tests of shafting, etc. The department of mining engineering and metallurgy has the use of laboratories in which the milling and smelting of lead, copper, silver, and other ores, in economic quantities, are regularly performed by the students themselves. The classes in architecture supplement the work of the drawing and designing rooms by the examination of structures completed or in course of erection, and by practical experiment in the laboratory of applied mechanics, testing the strength of materials and working out problems in construction. The Kidder Chemical Laboratories consist of a laboratory for general chemistry (288 places); a laboratory for analytical chemistry (108 places), together with a special room for volumetric analysis (20 places) and a balance-room with 22 balances; a laboratory for organic chemistry (30 places); a laboratory for sanitary chemistry (16 places); a laboratory for industrial chemistry (16 places); two convenient lecture-rooms; and a well-supplied library and reading-room. The laboratories are thoroughly equipped for the purposes of ordinary instruction, and they also possess excellent facilities for the promotion of original research. The Rogers Laboratory of Physics, the first laboratory in which instruction was systematically given to classes by means of elementary physical measurements conducted by the students themselves, is well provided with the needful facilities for laboratory instruction in both elementary and advanced technical physics, especially in the different branches of electrical engineering.

On the successful completion of any one of the four-year courses of the Institute, the degree of "Bachelor of Science" will be conferred. The degrees of "Master of Science," "Ph.D.," and "Doctor of Science" are open to persons pursuing advanced studies and conducting original researches. Special students are allowed to enter special divisions of any of the courses, on giving evidence that they are prepared to pursue with advantage the studies selected.

The fee for tuition is \$200 a year. Besides this, \$25 or \$30 are needed for books and instruments. There are no separate laboratory fees; only payment for articles broken is required.

For information, address JAS. P. MUNROE, Secretary.

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