The Tech.

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THE TECH.

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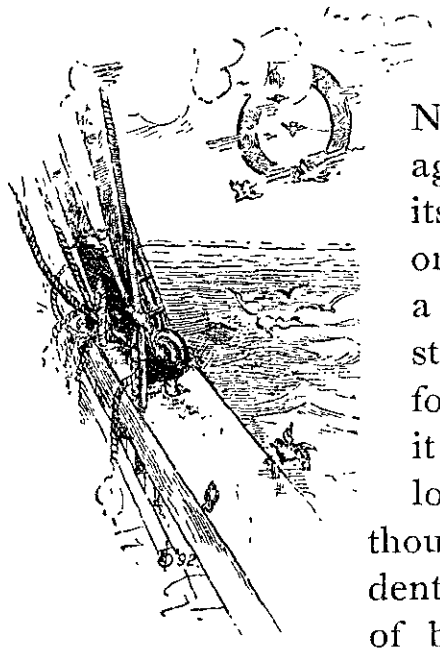


ONLY twenty-five years ago the Institute began its work in hired rooms on Summer Street with a class of twenty-seven students and three or four instructors; to-day it numbers in its catalogue more than a thousand officers and students, and is in possession of buildings and equipments which, in fitness for the purpose that they have to serve, are unsurpassed by any college in the country. The contrast between the first annual catalogue and the twenty-fifth—between an almost experimental enterprise and a great institution in the first rank of its class, is most striking.

Such a record of success is the strongest testimonial to the wisdom of the projectors of the Institute, and the ability of those who have had the conduct of its affairs. The maintenance of a high standard of scholarship and the thoroughness of its methods of instruction have, next to the exertions of its officers, been perhaps the most potent factors in the Institute's progress.

These causes of its popularity give us reason to be proud of Tech., while the increasing appreciation of its advantages, promises to advance it still further in usefulness and esteem in succeeding years.

WITH this term has begun the occupation of the new building on Trinity Place, and students in every department will profit by the increased elbow-room afforded. Some of the rooms are not entirely finished, and there still remains a considerable amount of machinery and testing apparatus to be put in position; but all will be completed in a week or two, and the building will lack nothing except a suitable name. May one that is acceptable to all be soon found!

The plans of the basement and first floor have appeared in the catalogue; the arrangement of the apparatus and engines is fully shown there. The third and fourth floors are occupied by the Department of Mechanical Engineering, and are divided into five recitation and two drawing rooms. The third floor will be occupied by second year men, the fourth floor by third and fourth year students, while the office and blue-print rooms will be common property.

Up at the top of the building are the Civils. On the upper floor there are two recitation rooms and two drawing rooms of a smaller size than those on the lower floors; these are for second and third year men. The fourth year classes occupy the fifth floor, consisting

of recitation rooms, drawing room, and library, together with a small office. Each floor is supplied with wash rooms and a blue-print frame.

The recitation rooms have a very natural appearance, with their desks and iron-legged chairs of the same familiar old pattern. Just at present the unscratched varnish gives a rather gaudy effect; but that will soon fade under the influence of ever-present pencils and knives, combined with a desire of putting names in public places, and by the time the Class of '94 makes its entry on the scene, the newness will have given place to the same business-like air that has long been a characteristic of the other buildings.

IT is but once in a year that we are called upon to tell the people of the world who fail to get a copy of "Technique" before its edition is exhausted, what an opportunity they have missed. To the smaller number of fortunate ones, this editorial is not addressed. To them "Technique" speaks for itself, and it does not need a helping hand from us to commend it to the possession of more than a thousand students and instructors.

Slightly increased in size, and in a binding more substantial and handsome than former editions, the "Technique" of the Class of '91 has surprised us very agreeably, although issued nearly two months beyond the time set by precedent.

The notices of the departments, the societies, and classes are complete and bright; but the charm of the book is in its illustrations, and much credit is due the artistic members of the publishing board who have given its pages such attractive settings. There are about thirty more cuts than in any number hitherto, and, as a whole, their quality is superior. It is to be regretted that a better grade of paper was not used; but we cannot have everything that we want, and the kickers would be unhappy unless there was given them at least one thing to growl about. THE TECH congratulates the Class of '91. As an artistic production your "Technique" is a success. May you feel as proud of yourselves as you deserve.

WE are glad to hear that the *Technology Quarterly*, which has been discontinued this year for business reasons, is soon to resume publication. It has been found inadvisable to continue the *Quarterly* as a students' publication, and the management has been placed in the hands of Mr. J. P. Munroe, '82, who needs no introduction to Tech. students. As heretofore its contributions will be from the officers of instruction, advanced students, and alumni of the Institute, and will consist of articles of permanent value in the physical, mathematical, mechanical, and economic sciences.

To students in the third and fourth years the *Quarterly* will be of especial interest and assistance, and should bespeak their hearty support; while the record which it will give of the scientific activity of the Institute in its various departments should recommend it to the favorable reception of the alumni, students, and friends of the college.

DURING the days of vacation visitors to the Rogers Building have seen carpenters busy at work in the basement, changing the Mechanical Engineering Laboratory into a lunch room, and although the work has been hurried along as rapidly as possible, it will be a few days yet before the rooms will be ready for hungry students.

The lunch room is to be managed by students and for students. It is not designed as an investment by the Co-operative Society, but in the interest of the Institute's hundreds who demand and need a hot lunch at noon.

Attention has been repeatedly called to the project through the columns of THE TECH., and we are assured that every man is preparing himself for the rush which will take place when the doors are finally opened.

An Idyl of Nantucket and the Cape.

MILLARD CHACE awoke on the morning of his wedding day, and glancing first at the clock on his mantel-piece and then at the weather outside, began to dress with great care. The clock showed that he had ample time before the train left for as elaborate a toilet as he could desire, and the weather indicated that the storm which had been raging for the past three days had abated but little. Millard was a man advanced in life, and he dressed, as he did everything else, with due deliberation and forethought. He had not decided to enter into matrimony until he had spent many hours in studying the pros and cons of the subject, and on this eventful morning he tied his cravat with a slowness and precision that showed his thoughts were busied with strictly material considerations, rather than given to the wandering which younger minds are supposed to indulge in on such important mornings as the one in question. Millard by trade was a retail dealer in boots, shoes, rubbers, etc., and had held a monopoly of the custom of his native village for fifteen years. But as the village was small, and the children all went barefoot in the summer, his fortune had not risen to anything prodigious. He was of some importance in the village itself, which was a Cape Cod town, and his opinions on matters of general interest were listened to with considerable respect, and his arguments on matters of national importance considered quite eloquent. A stir was occasioned in the little village during the preceding summer, by the appearance of a visitor from the neighboring island of Nantucket, by the name of Miss Ida Acorn; and a greater one some time later, when it was announced in the county paper that a matrimonial alliance was projected by this same Miss Acorn and "our distinguished fellow-townsman, Mr. Millard Chace." The gossips were unable to decide on the exact circumstances of the match. The older ladies presumed that Miss Acorn had come to South Jarmouth with Millard in her mind's eye, and that subsequent events were but the natural conclusion of a long attachment. Such a careful man as Millard, they argued, could not possibly fall in love and become engaged all in two months, when he had successfully withstood the combined feminine attractions of the village for five and forty years. The younger ladies, however, looked at the matter differently. To their minds the growth of true love was not measured by days and hours. The whole affair might have begun and ended in the short space of time necessary to try on a pair of shoes. In a book dear to the select few who held this opinion, Lord Layerdirk was distinctly described as "feeling a vein of quivering fire stirring his heart-throbs through" on a certain occasion when he had been engaged in tying Gwendoline Mayerdine's ball slipper; why should not Millard have been likewise affected while carrying on his trade? It was quite clear to everybody in several different ways. Cape Cod people, after they reach a certain age, are not in the least sentimental, and therefore only the young girls held the shoe-store theory. The rest either did not trouble themselves about the matter, or accepted the ready made opinion regarding a long attachment. The entire town agreed that she was wholly unsuited to him. In the first place, she was impulsive, nervous, and thoroughly wide awake. Millard, being a Cape Cod man, was entirely free from these qualities. She was not handsome, and she was surely over fifteen years his junior. Nevertheless the newspaper item was not contradicted, and while the particulars of the match were still unknown, Miss Acorn returned to Nantucket; and Millard informed his friends that he was to follow her there in two months, when they were to be married in her mother's house.

His usual discrimination was shown in his replies to all leading questions during this time, and at the end of the two months the village forgot its curiosity on the subject, and

let Millard get married in his own way, without further trouble,—realizing that he had taken excellent care of himself and his own affairs in the past, and could probably do so in the future.

The morning for his departure came at last; and having satisfactorily adjusted his necktie, and completed his dressing, he ate his usual quantity of breakfast, which he prepared himself, and wrapping up well against the storm, started to the station for the north-bound train. He met with many wishes of good will as he passed through the town, and while waiting for the train talked with the station master on the probabilities of the Nantucket boat being able to run during such bad weather. He advanced careful and convincing reasoning in this matter as he did in all others, and the train finally carrying him away, he turned the discussion into a soliloquy, and figured the probabilities and possibilities for his own satisfaction. Occasionally his face would light up and break into a smile, but whether from thoughts of his approaching happiness, or a new consideration added to his train of reasoning, it would be hard to determine. The train stopped at Wood's Holl, and Millard alighted. The Nantucket boat lay at her moorings, and with a glance at the sky and a neighboring weather-vane, as final points in the argument, Millard quietly stepped aboard. The rest of the passengers crowded about the Captain, to see if the trip would be attempted; but Millard seemed to have settled the matter quite by himself, and sat down in a warm corner of the cabin.

"We'll go outside and have a look at it," said the Captain; and the little boat drew away from the pier and steamed down the harbor forthwith.

Millard's deductions were correct, as usual; and the question of starting having been decided, he turned his mind to thoughts of his approaching marriage. For quite awhile he sat silent and alone in the little cabin; the rest of the passengers were awaiting the Captain's verdict on deck. The boat reached the mouth of the harbor, and the Captain surveyed the path before him. One "look at it" was enough, and turning the boat's head back again he returned to quieter water. An immense sea was running outside. It would have been fatal to attempt to reach the island. The engines stopped as the boat slowed up at the pier, and Millard rushed on deck to see the cause of the delay. Wood's Holl was before him, and for the first time in his life a conclusion that he had adopted was proven glaringly wrong. However, he could easily remedy the fault by telegraphing. He walked along the shore to the office, where a notice informed the public that, owing to the severe storm, the line was broken at the Nantucket end, and no messages could be transmitted for several days. Millard's wedding day was not only postponed, but he was entirely cut off from communication with his intended wife. He sat down by the stove in the waiting room of the station to think what had best be done. The wedding could not go on without him in the first place; secondly, the wedding party would know that it was impossible for boats to cross to the island, and consequently would not expect him. It seemed very simple from this point of view; and as no logical being would think of arguing differently, everybody had evidently make the best of it until the Sound was navigable. For himself, he started out in quest of a place to spend the night at Wood's Holl.

Meanwhile everything was in a state of excitement at Nantucket. Ida and her mother had been running about the house since early the day before. Mrs. Acorn had been deep in pies and cakes, while Ida herself had arranged the simple gifts received as wedding presents over and over again, without the slightest idea that she had done it more than once. Ida had not the calmness of mind and body that characterized her lover. She was all impetuosity and stir, and ran about the house mislaying things, that she might busy

herself in finding them again. When the eventful morning arrived she arose early and worked hard, putting the finishing touches on herself and her surroundings, and began to wonder two hours before the boat was due why Millard did not come. Mrs. Acorn was driven frantic by being asked the same question over and over again, and made a few caustic remarks about her daughter being old enough to know better than to act like a two-months'-old kitten. "The steamer leaves the Hole at half-past 'leven," said Mrs. Acorn, glancing at the clock, whose hands pointed to a few minutes after ten. Ida went upstairs and tried to busy herself with her wedding gown. When she came down again her mother had left the house, and she turned to the presents for consolation. They embraced all sorts of household articles from towels and bed-sheets to glass toothpick holders. She had seven of the latter, Nantucketers evidently thinking these recent additions to the stock of the village store quite elaborate enough to be posed about the house as bric-a-brac, if not in use on the table, and giving her a quantity for the purpose.

Eleven o'clock finally arrived, and Mrs. Acorn returned home. "Ida," she said, as she came in the door, "I've bin over to Cap'n Zeno's, and he ain't goin' to th' Hole to-day. The weather outside is tew pesky rough. What's more," she continued, as her daughter opened her lips to speak, "he nor I don't believe Cap'n Allen will try t'come over to th' island to-day. The trip ain't safe. I hev sent word to Parson Crowell not to come over onless you go an' tell him. Most of th' folks know the boat won't run, an' they consequentially hain't likely to expect a weddin'."

After delivering this speech Mrs. Acorn gathered up a pile of pieces of wedding-cake, which she had wrapped up in ruled note paper, carefully pinned at each end, and retired to the pantry.

The effect of the news on Ida was twofold; she knew that Millard was, and always would be, true to her, and that the wedding was postponed through no fault of his; but at the same time it was postponed, which meant another day of anxiety and restlessness, and probably a considerable confusion in the wedding arrangements. Ida's temperament was not one to battle successfully with confusion of any kind; and while she was not calm before, the news excited her to such a degree that her duty, under the circumstances, was far from clear. "I oughter go to him, Ma," she said; "I really oughter. Mill is probably expectin' me. He hes reasoned out an' cac'lated thet 'es he couldn't git here thet I'll git there; an' if he hes reasoned so, he certain won't move till I come."

"Ida Acorn," said a voice from the pantry, "ef you go chasin' roun' th' country arter Millard Chace or eny other man, be he off-islander er otherwise, you ain't got the sense of decency I thought ye hed." The abrupt closing of the cupboard door finished these remarks, and Mrs. Acorn went on with her work inside, meanwhile making mental comments on the "furriner," as she called him.

To Ida, however, the matter appeared in a different light. She knew her lover's peculiarities much better than her mother, and she knew, moreover, that Captain Zeno would run his boat from the island to the shore when Captain Allen and his steamer would not dare to leave the mainland. Exactly what Millard expected her to do from his position at the Holl she did not know; but that he expected something she was quite sure, and the only course open to her troubled mind seemed to be to take the morning's boat across. The day passed, and by evening the conviction that Millard was waiting for her gained ground. By morning she had decided to go, and a little before boat-time she left the house without stopping to inform her mother of her intentions, and with a small satchel in her hand took her way to the steamer's wharf. Captain Zeno was standing on the pier talking to some of the Nantucketers.

"Allen hain't likely t'come across t'-day neither," he was saying. "His powers es a seaman hain't alarmin', and he prob'ly 'll stay in th' Hole. Be I goin' 'cross? Well, I rayther reckon, yes. Me an' Allen wan't brought up on th' same ship, an' whether he stays in harbor er not, I make th' trip." Suiting his actions to the word, Captain Zeno began preparations for departure, and half an hour later the "Island Home" steamed away with Ida on board.

When the widow Acorn learned the truth, great was her anger against her daughter and the "dratted furriner" to whom she had gone. She had never liked Millard over well, and the less so since Ida's thoughts had been so much occupied with him to the exclusion of herself and her interests. This was the climax, and after eating her dinner in awful silence she cleared away the things and vented her anger in scrubbing the dishes with a spiteful energy. While engaged in this task some one knocked at the door, and she went to open it with a table knife unconsciously clinched in her hand. The visitor was Millard Chace.

"It's you, is it?" said the widow. "Wall, I want'er know." Millard stepped back at seeing his future mother-in-law formidably armed, and with a far from pleasant expression of countenance. By a careful deduction he had long ago surmised that Ida's mother had never been partial to him, and got Ida to visit his sister in South Jarmouth accordingly. He now hesitated somewhat in claiming his own identity, but finally intimated that he was himself, and ended up with a request to see Ida. Abrupt questions often put Millard at a disadvantage. He needed time for study.

"She ain't here," said the widow. "She's gone to th' Hole."

"No?" said Millard. "What fur?"

"Humph," said Mrs. Acorn, leading the way to the living room, "she went fur you, es long es you didn't seem likely to git over here."

"Couldn't git over," replied Millard, seating himself by the fire; "didn't you know th' steamer hed ter stop runnin'?"

"Millard Chace," said the widow, standing before him with one hand on her hip and the other flourishing the table knife, "when I consented to you marryin' of my daughter, I didn't know es I made any provision fer steamers, 'er fer runnin' around ter neighbors' houses ter tell 'em that there wasn't goin' to be no weddin', or fer anything of the kind. An when you come here an' tell me what you hev told me" (Millard had said just eight words), "an' attempt to git my daughter ter marry you away from her mother's house, where she wus born an' brought up, an' hev her go skylarkin' aroun' the country after any off-islander like you, it seems to me you air takin' upon yourself quite es much es your share of persumption!"

Having delivered this tirade the widow bustled out of the room, banging the door after herself as usual, and returned to her dishes.

Millard looked at the door she had slammed and then at the stove, and unconsciously sighed. "In some respects," he murmured, "in some respects they air similar." After this remark he gave himself wholly up to meditating what had better be his course of action in the near future.

Contrary to the predictions of Captain Zeno, Captain Allen had made a fairly easy trip from the mainland, and arrived safely at the island. Millard had found comfortable quarters in Wood's Holl during the previous night, and expected to find his wedding party arranged on reaching the island. In this particular, as we have seen, he was somewhat disappointed. His reasoning was now directed to what course of action Ida would pursue on reaching the mainland, and how he had best proceed to straighten the difficulty into which her erratic trip had thrown them. Ida, of course, would not find him in Wood's Holl, and therefore would go on to South Jarmouth

rather than pass the night there. His sister would undoubtedly keep her there after her arrival; and if he should return on the next day's boat he could intercept her, and his past hopes would be carried out by having the marriage take place at his sister's house. It was evidently an intervention of Providence; and, with inward exultation at being able to make the apparent misfortune turn so much in his favor, he went to make peace with the widow in hopes of somewhat diminishing the storm which he knew such a course of action as he intended to pursue would bring up in that quarter. His attempts at arbitration were fairly successful; for the widow had had her say without being contradicted, and prided herself on having won the fight. She therefore became quite lenient in her treatment of the defeated enemy, and Millard got through the evening far from unpleasantly. She was not over-curious regarding Millard's future plans, nor did she seem as anxious regarding her daughter's wellfare as Millard had expected.

She made him comfortable over night, and allowed him to stroll out of the house after breakfast without even asking his destination. As soon as a turn in the road concealed him from view of Mrs. Acorn's windows, Millard made straight for the steamboat landing, where he found Captain Allen busied in preparation for his return trip. He quickly went aboard, and, descending to the cabin, took up his customary dark corner near the stove. In a short time the vessel left the pier, and started on her journey across the channel. Opposite to Millard sat a gentleman with a pale cast of countenance, reading a missionary tract. Occasionally his eyes left the book and peered into Millard's corner, as though he looked for recognition from the occupant. Millard was busy with his thoughts, and kept his eyes on the stove.

"Do I see my friend Mr. Millard Chace before me?" said the pale gentleman.

Millard started, and glanced at the speaker.

"I believe I was to have had the happiness of officiating in your behalf at the Widow Acorn's on yesterday, had not the steamer been unavoidably detained by the inclemency of the weather," continued the man pompously. "I am the Reverend Uriah Crowell."

"Oh, yes," said Millard; "how d' y' do? You air goin' for a trip ashore?"

"Yes," said the clergyman; "I have some little business in Wood's Holl, but intend to return by to-morrow. I was informed by Mrs. Acorn that I would have the pleasure of her daughter's company on the boat on my return. She informed me she had been suddenly called to the mainland. As you might say, I am commissioned by our good friend Mrs. Acorn to take Miss Ida in charge."

The Rev. Mr. Crowell rubbed his hands, and smiled benignantly at Millard, who wondered what plot the widow had instituted against Ida. The conversation turned to a discussion of the tract the reverend gentleman had been reading, and Millard made himself as agreeable as possible. They chatted for about half an hour, when a hurrying of feet and sound of voices shouting from the deck above attracted their attention, and they ascended to see the cause of the disturbance. When they reached the open air they saw Captain Allen standing in the bows of the boat, with an old speaking-trumpet in his hand. A short distance to leeward the "Island Home" was wallowing about in the trough of the sea, evidently unable to make headway. Captain Zeno could be seen on the upper deck, and he, too, held an enormous trumpet, through which he tried to make himself heard on board the neighboring boat.

"The wind's tew strong, and I can't git a durned thing he says," said Captain Allen, coming up to Millard and the Rev. Mr. Crowell; "but I reckon from appearances he's bust his shaft."

The boats approached nearer each other, and Captain Allen's conjecture was found to be correct. A boat was lowered and sent over to the "Island Home," where it was arranged

to transfer the passengers from the disabled steamer, and to have Captain Allen send a tug out from Wood's Holl to tow Captain Zeno's vessel back to port. Millard stood watching the proceedings with his Methodist companion, when a slender woman, with loose hair blowing from under her bonnet, who was descending to one of the boats, attracted their attention.

"It is, ——" said the Reverend Uriah.

"Ida!" said Millard.

The boat drew near, and Mrs. Acorn's daughter, with an anxious face and considerably disturbed in her personal appearance, clambered up the stairs over the steamer's side. She held her small satchel in one hand, and a life-preserver hung over her arm. Her whole appearance suggested an excitement of mind and body of several hours duration.

When she saw Millard she fell almost fainting into his arms. The life-preserver and satchel fell to the lot of the Reverend Uriah.

"Parson," said Millard, "I think if its agreeable we'd better end this es soon es possible, er there'll be a calamity. If you've no especial objections ter marryin people out o' church, or out o' their Ma's homes, I wish you'd fix it fer me and Ida now."

These words restored Ida to consciousness. She looked up at Millard and then toward the rescuer of her satchel. "Yes, Mr. Crowell," she murmured, "if you please."

"Well," said the Reverend Uriah, "while not a prevalent custom, neither our faith nor our laws lead us to believe it is not as fitting to enter into the bonds of matrimony on the sea as on the land. If you will step down into the cabin I will speak to our good friend Captain Allen."

They were married in the cabin of the little steamer, with Captain Allen acting as father for everybody, and also best man. Exactly how the widow Acorn received the news, or what has been the subsequent history of this interesting pair, it is not in the province of the present historian to relate. As much as we have told we know for the truth.

M. I. T. Departments.

II. Mechanical Engineering.

Some time ago, when engineering was in its infancy, there were recognized only two kinds of engineers, viz., military engineers and civil engineers, the latter making a business of all kinds of engineering that did not concern the art of war; in other words, the engineer and the civil engineer were synonymous terms.

But the enormous development of industrial pursuits all over the world has been such, that it is no longer possible for one man to be an expert in all the branches of engineering, and hence we now find the mechanical engineer, the mill engineer, the steam engineer, the marine engineer, the mining engineer, the hydraulic engineer, the electrical engineer, the chemical engineer, etc., these terms indicating the branches of engineering to which the practitioner is especially devoted, some of them being more general than others, and some including more or less of the others.

The term mechanical engineer is one of the more general terms, and one which may, in the course of time, come to be considered too general a term to be properly used at all. At present, however, it is very largely used, and it denotes a man who is primarily an expert in the designing, building, and running of machinery; this including a knowledge of the steam-engine, water-wheel, or other motive power, and also of the construction of buildings suitable to contain machinery in operation.

In these days of competition, the financial success of a manufacturing establishment does not depend as much upon the ability of the selling agent to make good bargains in selling its goods, as it does upon the ability of the concern to make the goods cheaply and well, and hence upon the skill with which the machinery is designed and run, and the economy of their power plant whether steam or

water. This renders it imperative for them to have in their employ one or more men who are competent to solve these engineering problems for them, and they cannot afford to do without the services of such men, as the margin of profit is too small for them to take the risk of failure, due to running their establishment in an uneconomical or inefficient manner.

The nature of the machinery to be dealt with will be more or less special, according to the nature of the goods manufactured; but, in any case, such a man, if he is to meet with success, must be well grounded in the fundamental principles of engineering, as otherwise he is likely to be a source of expense rather than a source of profit to his employers.

He must be familiar with the principles of mechanism, with the strength of materials, with the thermodynamics of the steam-engine, and the ways of obtaining economy in the steam-plant, and in most cases in the principles of hydraulics and hydraulic motors, all of which may be called the fundamentals of all engineering, and in order to acquire these, he must, of course, possess a familiarity with mathematics, and physics.

Moreover, whether a man designate his profession by the general title mechanical engineering, or by some one of the more special titles referred to, he must be primarily an engineer, and those men who are not versed in the fundamentals of engineering are finding fewer and fewer chances every day. Hence it follows that the greater part of Course II. is devoted to as thorough a study as possible of the fundamentals mentioned, and the later portion of the work of the Course deals with the development and the application of these fundamentals in the directions most needed by an engineer who is liable to be called upon to perform such duties as pertain to the mechanical engineer of an industrial establishment.

Thus the drawing is machine drawing, there is a course in machine design, the laboratory work gives practice in making a great variety of tests of steam-plants, of water, or of other machinery. The shop work bears of course upon the side of machinery, and also the three options of marine, locomotive, and mill engineering deal more directly with practical engineering problems.

As to the class of work which a graduate of Course II. will be likely to be called upon to perform after graduation, it may be said that the two most natural places for starting in his life work, are either in the draughting room or in the shop of some industrial establishment, and that in these places he can gain experience, which is necessary for his professional success, and which cannot be given him in any school. How fast, and how far he advances will depend on many circumstances, but mainly upon himself, upon his own energy, judgment, intelligence, and industry; and, when he does advance, he will find that he is most fortunate who has not merely a certain routine work to perform, but who is called upon to solve problems by which the economy or efficiency of the work can be improved, and he ought to grasp every such opportunity with alacrity, even if it does require him to work extra hours.

As to the variety of establishments in which he may find employment, perhaps the best idea can be gained from the list of graduates and their occupations, in the catalogue. I may mention here, marine engine works, locomotive works, manufacturing establishments of all sorts, the motive power, or test departments of railroads, and a great variety of establishments where industrial pursuits are followed.

Before closing however, a few words will be said in regard to the choice of Courses by the Freshmen:—

1. Do not raise the question as to which Course affords the best chances for making money; for by the time of your graduation conditions may have changed, and you may find yourself disappointed if your choice has been made upon this basis.

2. Do not choose a certain Course because your friend Tom is to take that Course, as you

may thus be sacrificing your success in life to the chance of seeing a little more of Tom for the remaining three years of your Course.

3. Do not choose Course II. on the ground that, when a small boy, you always enjoyed pulling machinery (notably watches) to pieces and finding out what was inside. Such a taste may, or may not be accompanied by an aptness for mechanical engineering.

4. After having decided which Course you ought to take, do not allow a failure to obtain the necessary credits, to deter you from taking it, but go to work and get the necessary credits, even if you have to repeat the first year in order to do it.

5. There are only two reasons which (in my opinion) should influence a student in choosing his Course: *(a)* If he knows that when he leaves the school there is a place already prepared for him in a certain line of work, which he must follow, he will then take the Course which bears most closely on that line of work. *(b)* If this is not the case, and, as a rule, it is not, he should choose the Course for which, upon careful consideration, he thinks he has the most aptitude, and in which he can do the most earnest, and whole-souled work.

If he does this he may be sure that, whatever he may do in after life, his course at the Institute will have been a benefit to him.

Now, applying these considerations to Course II., he should observe that it is primarily an engineering Course, and he should first raise the question whether he really wants to pursue an engineering Course of any kind.

If he finds that mathematics are dry and uninteresting to him, and that he could not devote himself in a whole-souled, and earnest manner to a Course which involved a constant application of mathematical principles, together with physics and similar subjects, he should not choose an engineering Course, as that is not the line in which he can succeed best.

If, on the other hand, he has a taste for mathematics, then he may proceed to base his choice upon a careful consideration of the distinctive features of the different engineering Courses, and of the class of work to which each is likely to lead him in after life.

To explain these features, as far as Course II. is concerned, is the object of the first part of the present article, and the articles written by the other Professors will doubtless explain them for the other Courses.

GAETANO LANZA.

A MISCONCEPTION.

Oh! she was a maiden blonde, blushing, and bashful,
And I a young man with coffers of cash full,
Who was spending my time in pleasure's gay dance,
And a fortune bequeathed me by two maiden aunts.

She seemed such a simple and innocent dunce,
I resolved to be naughty, and just for that once
To play the deceiver, her heart to waylay,
To capture it, break it, and cast it away.

Quoth I: "I will court her as all lovers do,—
I will send her confections and fond billets-doux;
I will play on her feelings a discord of woe;
Yes, she'll be a fiddle, and I'll be the bow."

Well, I played all the pranks that my fancy could tell me,
But when I would leave her, misfortune befell me;
I found to my cost that she wasn't so silly,—
For she ate the confections, but saved up the billets.

She chid me—the damsel I tried to softsoap;
But I found I had got to the end of my rope.
She declared that a breach of my promise I'd rue,
For *she'd* make a breach in my pocket-book, too.

And so, as the smoothest and peacefullest path,
I married this small incarnation of wrath;
An act which my relatives never forgave,
And made each maiden auntie turn o'er in her grave.

Our marital life has this secret revealed,—
That her delicate tongue is a weapon concealed;
And little by little I'm coming to know
That I was the fiddle, and she was the bow.

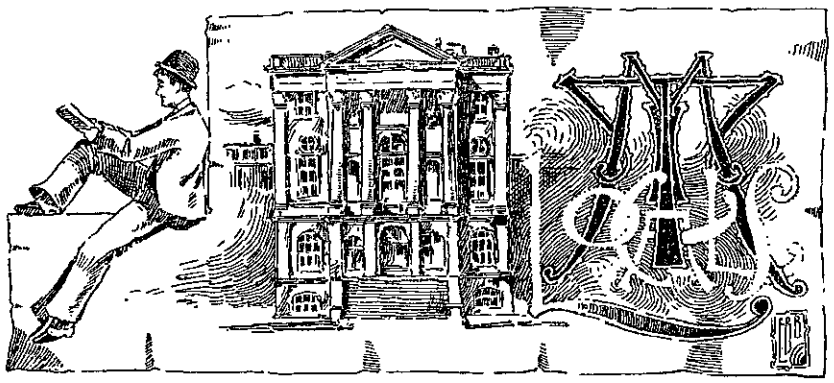
—*Brunonian.*

Professor: "What is carbon?"

Charles Boylston, '93 (who has vague memories of lime-water and CO_2.): "Carbon is a milky white substance, somewhat heavier than other gases."

Professor (to inquiring student): "Look it up for yourself sir. Nobody but a fool would ask such a question."

Student (humbly): "Excuse me, professor; I found it on your last examination paper."



Wanted! Lucrative positions.

The new tabular views give general satisfaction.

Mr. C. H. Cromwell, '89, has left the Institute.

The editors of "Technique" can now appear in the role of "boodlers."

A good proportion of '92 went down before the Physics examination.

Why should not Signor Gregori's lunch counter be a part of the co-operative enterprise.

Mr. Arthur Winslow, '81, a graduate of Course III., has been appointed State Geologist of Missouri.

T. H. Curtis, a graduate of Yale, who studied civil engineering here last year, is now on a survey in Washington.

Otto Germer, Jr., '91, who has just recovered from several weeks' illness, will not return to the Institute this term.

The Open Handicap meeting of the Boston Athletic Association comes off February 15th. There are a large number of college entries.

The *Technology Quarterly* will hereafter be published and edited by Mr. J. P. Monroe, '82. The first number will appear this month.

Professor Lanza's article in this number is of especial interest to '93 men who are intending to take the course in Mechanical Engineering.

Columbus Avenue has been a deserted thoroughfare during the vacation. Some of its four hundred Tech. denizens will not return again.

Of the 237 men who entered with the Class of '91, 108 are back at the Institute. About 60 per cent of the original number have found outside employment.

There are fifty graduate students at the Institute, including eight from Tech., ten from Harvard, and five each from Yale, Brown and Boston University.

The Freshmen can congratulate themselves that their drawing room is moved down a flight, while the Civils must grin and bear it now theirs is moved up three.

The co-operative lunch room will soon be in operation. We understand that the Woman's Educational and Industrial Union has contracted to furnish the eatables.

At the last meeting of the Society of Arts, Mr. A. C. White, of the Bell Telephone Co., read a paper on a Combination Volt-meter and Am-meter for Battery and Electric Light Work.

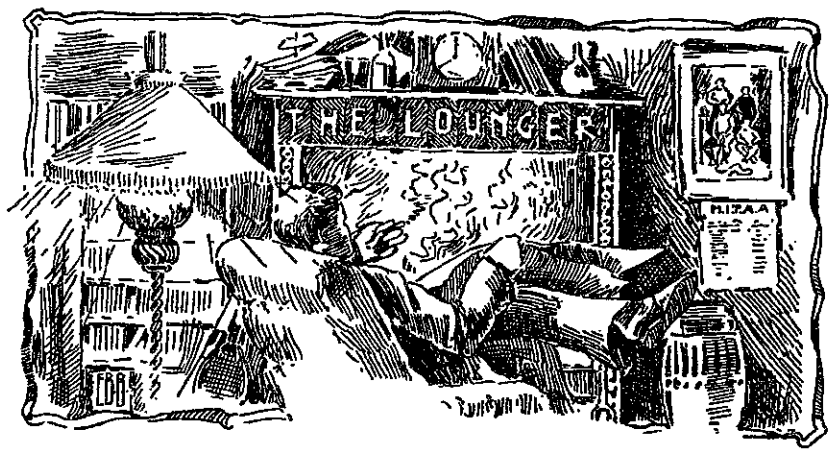
A quartette from the Glee Club sang at Fitchburg during the vacation.

Mr. French, who has resigned his position as instructor in Mathematics, has gone into the wholesale optical business.

President Walker has an article in the February Atlantic on Edward Bellamy and the Nationalist Party, in which the absurdities of a society founded on "Looking Backward" are clearly and wittily outlined.

It has been moving day for the past two weeks between Boylston Street and Trinity Place. A large amount of apparatus and fittings have been transferred from Rogers and the new building, and put in place in the Engineering Building.

Course III. has been thoroughly revised, and the schedules as now arranged in the catalogue embrace distinct lines of study in Mining, Engineering, and Metallurgy, and the options have been so arranged as to include in each an increased number of subjects of direct technical importance.



The Lounger, availing himself of the leisure that the mid-term recess gives to those who have to remain in Boston, has been making a tour of observation and inquiry in the precincts of Winslow's Rink and the Art Museum. The object of his inspection was the latest addition to Tech.'s "houses of industry," the future home of the Mechanicals and the Civils. Passing up a stairway, which was left outside for a sample of others within, and opening the outer door, the Lounger at once found himself at the head of one of those charming corkscrew stairways, a fac-simile of the one in Rogers. He wound himself down its helical incline in a very serpentine manner, and had only taken a half-score of steps before he found another of the spiral ingenuities; and conjecturing that it might serve to destroy the torsional strain produced by the first one, he proceeded to wind himself up in the direction reverse to that in which he had descended. When he had arrived at the top he found that in thus straightening himself out he had made no advance, and was practically where he had started. It then occurred to him that a slight twist might be essential to the true understanding of Mechanical Engineering; so he proceeded to the turret at the southeast corner of the room, and descended to the basement once more.

The Lounger is the merest novice in the science of machines, and begs to refer you to other sources of information for a professional description of what he saw. There were certainly a great many wheels and pulleys and belts, in position and out, and a boiler-iron tank that looked like a town reservoir, and a multitude of pipes and machines and unknown apparatus, all of which no doubt is accurately mentioned in the catalogue. There was a row of heavy iron columns extending through the centre of the building, as there is in many mills, and altogether the place had quite the air of a combined factory and machine shop.

The Lounger now imagined himself in the place of a third-year Mechanical, who wished to visit his Course I. friend in his drawing room among the clouds. He began the climb, and after lifting himself over one hundred and fifty steps, more or less, he found there were no more stairs to conquer; he also found that he had come a flight too far by mistake, and was in a kind of cupola or deck-house, from which a door opened out on the roof. The weather was not favorable for promenading, and he felt no longing to walk around the battlements or lean over the parapet. He contented himself with looking through the unwashed windows at the roof of the Skating Rink, three stories below, and the switch engines in the freight yard, as much farther beneath his point of observation.

Leaving the extended prospect of roofs and steeples, the Lounger returned to his purpose, and went down one flight. He opened the door at his right, which admitted him to one of the Civil Engineering drawing rooms. The cross-legged tables and the high stools were in no way different from those with which he was familiar. In the corner was a glass enclosure or cage for the instructors — an arrangement that prevails throughout the building. At the rear of this floor, as on the two under it, are placed the recitation rooms. The Lounger noticed that the blackboards were made from substantial slabs of slate,— the only case of extravagance that he had seen in the building. The library was situated on the fifth floor, or thereabouts, and contained a great many bookshelves not yet filled with books.

Everything was in a state of preparation and confusion, and most of the rooms were given up to the painters, the carpenters, or the machinists. These artisans seemed to regard the Lounger with suspicion and disfavor as he pursued his investigations, and evidently much preferred his room to his company. He also was becoming wearied by the succession of drawing rooms, recitation rooms, and laboratories, and resolved to defer his further researches until things should be in running order. He proceeded, therefore, to the circular turret which is so prominent on the exterior of the building, and by carefully curling himself around the central column, was rapidly projected to the bottom with a whirling motion which produced a dizziness, of which this memoir is only an inadequate exponent.

College Notes.

A new scholarship to be known as the Scott-Hurrt scholarship has been founded at Yale. It is the income of $5,000, and will be conferred upon two students, one Junior and one Senior, for intelligent industry and approved scholarship without any specific competitive examination.

Hotchkiss, '91, has been elected captain of the Williams football eleven for next year. He played centre rush on the Andover eleven in '87, and since he has been at Williams has played right guard. He is a cool-headed man, and always plays a careful, steady game.

Arthur J. Irwin, lately signed by the Boston team, has been secured to train the Dartmouth nine.

The *Dartmouth*, the fortnightly published by the Senior class of Dartmouth College, is celebrating its semi-centennial, having been established under its present title by members of the Class of 1840, in 1839.

The entire membership of college fraternities is nearly seventy-five thousand.

Candidates for the Yale freshmen crew are taking practice in the rowing-tank now, and will continue to do so until spring. An unusually strong lot of men are candidates, and it is expected that the crew will be a fast one.

The University of Berlin has seven thousand two hundred and eighty-six students matriculated this year. Of this number 632 are foreigners, and 6,654 are Germans. It is estimated that during the past year the number of students in attendance at the German universities has more than doubled.

Vassar College receives $6,000 by the will of Ex-Pres. Kendrick, of that institution.

The candidates for the Yale nine began active training February 1st.

The New York Brown University Club has secured $34,000 toward the $100,000 which it proposes to present to the University.

The increase in students at Princeton for the past year is 102.

Vassar's new gymnasium, just completed, is the largest one connected with any woman's college. The building is in the form of two parallelograms, one 200 x 47 feet and two stories high, the other 67 x 40 feet, the whole topped by a tower.

Princeton, Yale, and the University of Pennsylvania, will send each about a dozen men to the coming Boston Athletic Association meeting.

The total number of men graduated from all departments of Cornell this year will be about two hundred and forty.

The recent exhibit of American college papers at the Paris exposition excited great interest in foreign educational circles. Undergraduate journalism is practically unknown in Europe, there being but one college paper in England, and none in France.

Three winter athletic meetings will be held at Harvard this year, the first on March 17th, the second on March 22d, and the third on March 29th.

The Harvard Co-operative Society has declared a dividend of $1,723.20. This is to be divided among 621 members. The smallest dividend will be 58 cents, and the largest $21.44.

There are thirty-four candidates for the Amherst nine. But two of last year's team will play.

The difficulty between Andover and Exeter over athletic matters has been satisfactorily arranged, and the annual baseball game will be played this year.

The mid-year examinations at Harvard began on Thursday, January 23d, and will continue until Saturday, February 8th.

The cinder path which is to be laid around the Andover campus, will be four laps to the mile. The track will be ready for use early in the spring term.

It is said that there are eighty-seven college professors now on duty who have been pupils under Dr. McCosh, Ex-President of Princeton.

A considerable addition was made to the Yale tank last week in the form of a mirror, to enable the men to watch themselves row. The glass is about six feet long and three feet wide, and is hung from the ceiling in such a way that it is just above the oars and can be moved opposite any place in the boat. The idea originated with Captain Allen, and it is thought that it will materially aid the men in learning and correcting their faults.

The Cornell Football Association has a debt of $600 for the past season.

In the intercollegiate football battles of 1889, Cornell had 21 men injured. Yale and Lehigh had 6 each. Wesleyan had 9 and Princeton had 5. Cornell men were the most seriously injured.

Mr. J. D. Rockafeller, of New York city, has given $600,000 for the establishment of a university in Chicago.

A mandolin club has been started at Princeton.

The annual convention of the New England Intercollegiate Athletic Association will be held in Boston, Saturday, February 8th.

Williams is to have a new recitation building to be known as the Hopkins Memorial. Its cost is estimated at $109,000.

A committee of eleven from the Junior and Sophomore classes at Amherst has been chosen to prepare an Amherst song book.

The Princeton catalogue for this year shows that the library has increased to over 140,000 volumes.

In answer to the statements which have of late appeared in various papers intimating that certain players on last year's Princeton football team have not returned to college, it is reported: "Every man who played on the team, except Ames, has returned to college, and is doing regular work."

Some College Verse.

THE BRIDGE.

The bridge was but a single rail
  Above the brooklet's flash and gleam;
And, that your footing should not fail,
  I held your hand across the stream.

Ah! but the bridge was very frail;
  We swerved to left, we swerved to right,
Yet never did your footing fail,
  I clasped your hand so fondly tight.

Oh that life were a bridge, my sprite,
  Is all my wish and all my dream,
That I might hold your fingers tight,
  And lead you safe across the stream.

—*Haverfordian.*

Miss Marigold! How sweet a name
Adorns the maid whose hand I claim!
Her heart, like rose's heart of gold,
Abounds in sweetness half-untold;
She's angel's self in mortal frame.

Ambition ruled before you came,
And on the scroll of moneyed fame
I hoped to see my name enrolled,
  Miss Marigold.

But now you put my pride to shame,
For I am bald, and cross, and lame;
Yet your fond love, so rich, deep-souled,
You shower upon a man so old,
I almost fear some little game,
  Miss "Marry-gold."

—*Williams Weekly.*

DECEIT.

I thought that I had won her heart,
  That she was mine alone;
No more would rivals rouse my fears,
  Henceforth her love I'd own.

For she had asked in tender tones,
  In which true love-sighs were,
If I my latest photograph
  Would kindly give to her.

Deceitful wretch! She gave it to
  The maid who cleans the halls;
But first she wrote upon the back,
"I'm out when this one calls."

—*Yale Record.*

LOVE'S TACTICS.

A war was declared near the fender,—
  Last night Mabel sounded alarms.
I called on the foe to surrender;
  She made an appeal unto arms.

Of course she was conquered completely;
  My booty quite precious I found.
You'll find you can overcome neatly
  If only your foe you surround.

—*Brunonian.*