

The Tech.

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VOL. I.

THE TECH.

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THE demand for lighter reading is continually being made by some of the friends of THE TECH. We are told that "All other college papers have it"; furthermore, that "It is necessary to the welfare of the paper"; "Most of the matter is thoroughly scientific"; "Who wants to read nothing but the results of scientific investigation"? "We need more jokes." Such remarks as these have been made in our presence by several of our patrons, and it is indeed true that more light reading is necessary to interest a large number of our subscribers. The question then arises as to how we shall supply that demand. THE TECH is a paper "published by the students of the Massachusetts Institute of Technology," and every student of that institution is responsible, in part, for its contents. The editors merely superintend the work, and

draw the line between that which is worthy of publication and that which is not. Those who demand literary rather than scientific articles are presumably the ones who take the most interest in that class of reading, and hence are best fitted to contribute literary matter. It is impossible to give the attention to literature that other college papers give, for this is distinctively a scientific school, and those who attend it are interested in scientific subjects. The paper represents the students, and must treat of the matter in which they are most interested. Thus far the students who have tried to help the paper along, by contributions and otherwise, have been of a scientific turn of mind; now let us hear also from those of literary taste. Nothing would give us more pleasure than to have all branches of science, art, and literature fully represented.

WE have received, through the kindness of Prof. John D. Runkle, a copy of his paper on "The Manual Element in Education." This paper gives full accounts of all the principal mechanic-art schools, a large number of pages being devoted to our own Institute. The arrangement of our shops and the kind of work done are shown by numerous illustrations. Included in Prof. Runkle's account is a report by Mr. Thomas Foley, instructor in our shops. This report deserves the careful attention of every member of the Institute. Written by a practical man, and in a practical way, it is a most convincing argument in favor of shop instruction.

It would be only repetition to say anything in support of this mode of education. It is being adopted all over the world. It seems hard to imagine the existence of such a school as this without a practical course in shop-work.

The shops are perhaps as important as the chemical laboratories. Our present accommodations, although admirable as far as they go, are far too small. We hope the day is not far distant when the Institute shall have all the facilities it deserves for this part of its instruction.

Contributions.

Stained Glass.

II. ITS HISTORY.

THE origin of glass-making is veiled in obscurity, but that it was known to the Egyptians in very early times is amply proven to us both by their hieroglyphics and some specimens which have been found in graves at Thebes. It is extremely doubtful, however, if they ever used it in windows, the climate of Egypt not calling for a protection from the inclemency of the weather, and all the pieces found being either ornamental objects or imitations of gems. This last shows that they possessed a knowledge of the coloring powers of the metallic oxides. The Chinese have also been acquainted with the art of glass-making from the earliest times, but they seem never to have developed the industry to any great extent, confining themselves, like the Egyptians, to the imitation of precious stones. Most of the glass used in China at the present day is imported. In Ashantee there have been found numerous glass beads, called by the natives *aggr*y beads. As the country thereabouts presents no facilities for glass-making, and as the natives possess no tradition regarding the manufacture of these beads, their occurrence there is accounted for by supposing the Gold Coast to be the Ophir of Solomon, and that they were carried thence from Tyre in large quantities as an article of commerce. The *glain neidyr* or snake ring of the Welsh may also be noted. These are small opaque glass rings, usually of a dark-green color, found all over Wales. The peasants believe them to be shed by snakes, and to possess remarkable luck-giving properties.

They were in all likelihood, however, manufactured by the Druids, and used by them as fetishes of some kind to impose upon the ignorant. Lastly, at Pompeii and Herculaneum fragments of sheet glass have been discovered; and at Pompeii, in a room attached to one of the baths, a window actually filled with colored glass was found. This window is the earliest known real glass window, and the fact of the glass being colored makes it especially interesting in the discussion of stained glass.

Having cited briefly the known examples of (so to speak) prehistoric glass, I will now turn to the first authentic accounts we have of glass-making. During the Roman Empire the great seat of glass-making was Tyre. Pliny tried to account for this by the trite fable of the shipwrecked sailors, attributing the invention of glass to the Phœnicians. The tradition is that a Phœnician ship, laden with "kale," an alkaline sea-plant, encountering a heavy storm, was obliged to seek shelter in the mouth of the river Belus, on which Tyre is situated. The sailors, wishing to cook some food, looked about for some stones on which to support their pot, but finding none, they used some of the ship's cargo. The fire under the pot caused this alkaline material to unite with the sand on the beach, and glass was thus unintentionally formed. The inhabitants of Tyre and Sidon, becoming acquainted with the fact, put it into practice, and established large glass works. This, though ingenious of Pliny, and a pretty fable, will hardly bear the light of modern science, since the temperature required for the combination of carbonate of sodium and silica is considerably higher than that necessary for the ordinary operations of cooking. Be this as it may, Tyre possessed exceptional advantages for the manufacture of glass, both geologically and geographically. The sand at the mouth of the Belus being pure silica, and the extensive commerce of Tyre affording ample facilities for the growth of such an industry as glass-making. From Tyre the manufacture was transferred to Rome, and then in turn to Venice.

Down to the reign of Nero all the glass made at Rome was in the form of articles of luxury and the famous lachrymatory vases, and all colored. In his reign, however, white crystal glass was invented; and Pliny tells us that the emperor gave six thousand sesteria, or about two hundred and fifty thousand dollars, for two cups of crystal glass. Later, during the reign of Severus, the glass-makers had acquired such great wealth, and their industry had assumed such gigantic proportions, that the emperor imposed a tax on them. Many writers seem to think this was the principal cause of their deserting Rome for Venice. The glass-houses of Venice were and are to this day all situated on the island of Murano. In Howel's *Familiar Letters*, under the date of May 30, 1621, we find the following quaint observation on the glass-making at Murano: "Among other little gentile ilands which attend the cittie of Venice, ther is one called Murano, about the distance of a little mile, where crystall Glasses are made, and 't is a rare sight to see a whole street, where on one side there are about twenty furnaces at work perpetually, both day and night. It hath bin observed and tryed that if one shoed remove a furnace from Murano to Venice herself, — nay, to the other side of the street, — and use the same men, materialls, and fuell, and the same kind of furnace ev'ry way, yet one cannot be able to make cristall Glasse in the same perfection, for bewty and lustre, as they do at Murano; and the cause they alledg is the qualitee and cleerness of the circumambient air which hangs ore the place, and favoureth the manufacture, which air is purified and attenuated by concurrent heats of so many furnaces together, which never extinguish, but are like the vestal fyres that allwayes burn."

The government offered peculiar encouragement to all who would engage in the art of glass-making; and it is no doubt due to this fact that Venice, although not the only place by any means where glass was made during the Middle Ages, was at least the leader in the art. For example, it conferred the title of "gentleman"

on all the artisans in the glass houses, and Baron von Souher states in his "Analysis of Nobility in its Origin" that "so useful were the glass-makers at one period in Venice, and so considerable the revenue accruing to the republic from their manufacture, that to encourage the men engaged in it to remain in Murano, the Senate made them all burgesses of Venice, and allowed nobles to marry their daughters; whereas if a nobleman marry the daughter of any other tradesman, the issue is not reputed noble."

From Rome and Venice the art of glass-making was introduced into all the countries of Europe; but during the dark ages, like all the other arts, it was very much at a stand still. The art, however, was not entirely abandoned, but was kept alive in some of the monasteries; for it was some time during the sixth century that glass first came to be used in windows. During this century we know that windows of colored glass set in marble frames existed both at St. Sophia, at Constantinople, and in St. Peter's, at Rome. Later in 709, Wilfrid, Bishop of York, invited workers in glass from France, no doubt in order to construct windows in his cathedral church.

G. T. S.

Base Ball.

THE season for out-of-door athletics is again at hand, and it remains to be decided whether the Institute shall be well represented on the diamond field this year. Already a considerable number of applications for positions on the nine has been received by the secretary of the Athletic Club, and notices have been posted appointing regular hours for daily practice. Owing to inclement weather, no systematic work has yet been entered on, although every suitable day has seen a good number of men on the practice ground.

It must be conceded that, apparently, the disadvantages afforded by our institution for the maintenance of a first-class ball team considerably exceed the advantages, in comparison with those of the ordinary college. Our students are supposed to come here for work, and by some

professors and others it seems to be concluded that they care, or should care, for nothing else; and that all energy expended in physical sports, out-door or in-door, is simply so much time and strength thrown away. It is needless to restate the old maxim that "All work, etc.," or say again what has already been many times repeated, that the complete man requires physical culture as well as intellectual and moral: and that to develop such culture he must have systematic and continued exercise in the open air. To this end there must be excited an interest in out-door sports, which can be developed in the student in no better way than by such games as base-ball, foot-ball, and the like. But here comes the question, usually the stumbling-block to our intellectual guardians: Will not this interest rapidly become too absorbing, and prove a detriment rather than a help to symmetrical development? Probably this question is decided by each for himself, according to his own bias or the interference which such exercise may bring about in his special department of study or particular work in the school. But it is not our province to attempt to prove or disprove the value of athletics; the majority of us regard such proof as self-evident, and we come back to the special question now before us: Shall the Institute support an organized base-ball team?

Our record so far has not been extraordinary. Some years ago there existed what was called a representative nine; but all signs of such a club had disappeared when the movement was set on foot last year to organize a team which, if actively supported by the students, might in the future do credit to the institution. It was not without some difficulty that a sufficient sum was raised to procure uniforms and carry on the team; but by perseverance of those interested and the help of the Athletic Club, the team was organized and a number of games played. Viewed as an experiment, last year's work cannot be regarded as unsuccessful; for certainly a nine was established, uniforms procured, and games were played, and under circumstances much more adverse than those presented to us

this year. We now have a field which, by a few afternoons' work in removing the material accumulated during the winter and a thorough rolling, will be in condition for practice; we have men already at work preparing for active play; and we have, it seems to us, an increased interest in the sport among the general students. Our disadvantages are lack of a first-class practice ground, and especially lack of time for visits to distant colleges. But situated as we are, within easy reach of one of the best professional base-ball grounds in the country, with college and amateur clubs all about us, ready to play if we prove ourselves of the right mettle, there seems to be no good reason why, by determined effort, we cannot overcome the difficulties presented, and at least do as well in our spring sport as was done by our foot-ball men in the fall. If it is decided to have a nine and support it as should be done, let every student feel a personal interest in its success, and stand ready to help out when the time comes with substantial coin assistance as well as by encouraging words.

H. S. C.

Changes in our Curriculum.

MR. EDITOR: The addition of the three "general courses" outlined in the new catalogue will meet the approval of every student at the Institute. Some of the studies added are, if properly carried on, of the utmost practical utility. Special reference is intended to the courses in political economy, the political and constitutional history of the United States, modern history, international law, finance, and business law.

It may well be questioned whether the above subjects are not of more vital consequence in a practical education than are some other branches whose names adorn the pages of our catalogue in connection with all the regular courses. Many students would be glad to substitute one of these studies for the somewhat rambling lectures on English affairs, which, from a student's point of view, have been allowed to occupy too much of the limited time that can be spared

from professional work, to the exclusion of subjects belonging to our own times and our own country. It is a significant and perhaps a humiliating fact, but nevertheless a fact, that many of our students know less of the political history of the United States than they do of that of some countries of Europe. The value to every citizen of a knowledge of his own country, and of the principles of political economy, can hardly be overestimated. A knowledge of business law, too, will be valuable to every one of our students when they, as engineers, chemists, architects, or business men, are called upon to take charge of practical enterprises. The want of instruction of this character has always been keenly felt by students of the Institute, and we may congratulate ourselves now that this want is beginning to be appreciated, and that the subjects referred to are placed in the hands of a gentleman qualified to teach them in a thorough and scientific manner.

G.

Cold Saw for Iron and Steel Rails.

MOST of the rails made in the Cambria Works at Johnstown, Pa., are cut hot as they come from the rolls, as is the case in all manufactories; but small lots of special lengths are cut by means of a saw, made by Wm. Sellers & Co., of Philadelphia.

The saw is of hardened steel, and is capable of cutting through a steel rail 4" high in $1\frac{1}{4}$ minutes, although the usual time is nearly 2 minutes. Following are the data concerning the saw and the engine which runs it:—

Thickness of saw, $\frac{1}{4}$ inch. Diameter (exterior), 4 inches. Chord over six teeth, $4\frac{5}{8}$ inches. Depth of teeth, $\frac{1\frac{3}{16}}$ inch. Radius of curve connecting base of teeth, $\frac{3}{32}$ inch. Diameter of pulley on axle of saw, 16 inches. Diameter of pulley on axle of engine, 8 feet. Cylinder of engine, $11\frac{1}{2} \times 20$ inches (Porter-Allen). Revolutions of engine per minute, 330 to 340. Revolutions of saw per minute, 1,980 to 2,040. Average steam pressure, 50 lbs.

Going as this saw does at an average speed

of a little over 4.8 miles per minute, the metal of the rail escapes before it in a state of fusion.

W. N., '81.

M. I. T. A. C

THE in-door meeting of the Athletic Club last Saturday was attended by over five hundred people, and may be said to have been, with a few exceptions, a great success. Those exceptions, which consisted in a falling behind of the average record in two or three events, and an unavoidable delay in the carrying out of the programme, can certainly be excused by the excellence shown in the majority of the competitions, particularly the tugs of war and the pole vaulting. The order of events is as follows:—

STANDING HIGH JUMP.—1. W. T. Ripley, 4 ft. $8\frac{1}{4}$ in.; 2. E. D. Dorchester, 4 ft. 5 in.; 3. H. P. Barr, 4 ft. 4 in.; 4. B. F. Copeland, 4 ft.

CLIMBING ROPE.—*1st Climb*: 1. B. F. Copeland; 2. H. M. Mansfield. *2d Climb*: 1. C. A. Deshon; 2. J. L. Kimball. *Trial Climb*: 1. C. A. Deshon; 2. B. F. Copeland.

HEAVY-WEIGHT TUG OF WAR (Five minutes' time allowance).—*1st Tug*: 1. Jamaica Athletic Association (H. R. Tarbell, Captain and Anchor; E. D. Palmer, I. S. Phinney, W. A. Barr), by 1 in.; 2. M. I. T. A. C. (D. Baker, Anchor; T. C. DuPont, Captain; F. H. Cutter, W. D. Fuller). In this the Jamaicas gained an inch on the drop, and neither side were able to gain any advantage during the tug.

PUTTING THE SHOT.—1. F. O. Harriman, 29 ft. 6 in.; 2. D. A. Campbell, 28 ft. 4 in.

HEAVY-WEIGHT TUG OF WAR.—*2d Tug*: Resulted in a tie between the Jamaicas and the Institute. Tarbell, as usual, got about an inch better on the drop, and then, by some first-class sawing, got still more; but towards the last our men managed, by some frantic pulling, to make it a tie, when time was called.

RUNNING HIGH KICK.—1. E. D. Dorchester, 8 ft. 5 in.; 2. J. K. Simpson, U. A. C.,

8 ft. 5 in.; 3. T. C. DuPont, 8 ft. 4 in.; G. L. Heins. Simpson and DuPont both failed at 8 ft. 5 in.; then on the pan's being lowered both did 8 ft. 4 in.; but on raising an inch, Simpson did 8 ft. 5 in., DuPont failing.

HEAVY-WEIGHT TUG OF WAR. — *Third Tug:* 1. Jamaicas, by 0; 2. Institute. This was a most exciting tug, the Jamaicas gaining little if anything on the drop, and both teams pulling for all they were worth. The result was a tie; but Tarbell's protest against the Institute's being coached was sustained by the referees, and the heat was given the Jamaicas, who took the first prize.

POLE VAULT. — 1. J. K. Simpson, U. A. C., 9 ft. 4 in.; 2. E. T. Sturgis, 9 ft. 4 in.; 3. R. T. Gibbons, 8 ft. 8 in.; 4. E. D. Dorchester, 8 ft. 4 in.; 5. H. F. Mandell, H. A. A., 8 ft. 2 in.; 5. C. A. Deshon, 8 ft. 2 in. Simpson and Sturgis failed at 9 ft. 6 in., and on lowering the bar to 9 ft. 4 in. Simpson went over again, Sturgis failing. Both men vaulted finely; and had they been wise enough to have resisted the temptation to go over the bar at low heights, and saved their strength, they would undoubtedly have done 9 ft. 6 in. As it is, their records are, with one exception, by far the best ever made in Boston.

MIDDLE-WEIGHT TUG OF WAR (Five minutes' time allowance). — *1st Tug:* 1. M. I. T. A. C. (E. C. Hillyer, Anchor; F. M. Haines, Captain; J. Duff, Jr.; F. O. Harriman), by $8\frac{1}{2}$ in. 2. H. A. A. Team (R. Delaney, Anchor; W. H. Manning; H. E. Smith; A. F. MacArthur, Captain). In this tug, Harvard got caught by about a foot on the drop, and this they reduced to $8\frac{1}{2}$ in. when time was called; our men doing no pulling, but reserving their strength for the Jamaicas.

TWO-HANDED FENCE VAULT. — 1. W. T. Ripley, 6 ft. $11\frac{1}{2}$ in.; 2. C. A. Deshon, 6. $11\frac{3}{8}$ ($10\frac{3}{8}$ in. handicap); 3. J. L. Kimball. While Ripley's vault is in every respect first-class, his previous records have been so far ahead of this that it is but justice to say that he was completely tired out in making those preparations

for the games which his office as president of the club called for.

MIDDLE-WEIGHT TUG OF WAR. — *2d Tug:* 1. Jamaicas, by 3 inches; 2. Institutes. Our men got the drop by several inches, and caught the Jamaicas at first on Tarbell's sawing; but then the ribbon began to crawl gradually over to the Jamaicas, slip, slip, from our side, and heaving on the Jamaicas, till finally all our advantage had gone; and then one more saw from Tarbell placed three inches to the Jamaicas' credit, and this was held till time was called, one of the Harvard team having through a misunderstanding gone home. The first prize was awarded the Jamaicas; and they well deserved it, having pulled three tugs before with heavier men, and also being handicapped by not having all of their regular team. We wish Tarbell would take a special course at the Institute.

RUNNING HIGH JUMP. — 1. J. L. Kimball, 5 ft. $3\frac{3}{4}$ in.; 2. G. L. Heins, 5 ft. $2\frac{1}{2}$ in.; 3. R. T. Gibbons, 5 ft. 1 in.; 4. W. T. Ripley, 5 ft.; 4. H. P. Barr, 5 ft.

Referee. — Dr. Sargent.

Judges. — H. H. Cutler, '81; P. F. Ferris, H. A. C.

Clerk of Course. — H. Ward Leonard.

THE Chauncy Hall School Battalion gave an exhibition drill last Thursday. The assembly was sounded at three o'clock, and the first in order was company drill. Of the four companies, Company A excelled both in appearance and in the manual. Next came battalion drill and dress parade. After dismissal a picked squad participated in the sword exercise. On the whole the young gentlemen acquitted themselves well, and reflected honor on their instructors and the school. After the exhibition the floor was cleared for dancing, and two hours spent in "tripping," etc., to the music of the Cadet Band.

Seen at night by the electric lights on the Brunswick, the Institute is quite a grand old building.

Mechanical Engineering.

AN article on the Lynn boiler explosion, in the *Journal of Commerce* for March 25, will be found interesting to mechanicals, and also "Steam-Boiler Notes," in the *Scientific American* of same date.

The condenser for the laboratory engine has arrived, and preparations are being made for placing it.

'83 has begun experiments with the indicators, the preceding work being of a general nature about the engine. In the shops, steel forging has been completed and chipping and filing begun.

Mr. Davis read a very interesting paper on gas engines before S. M. E.

The third-year civils, at the instance of President Walker, will shortly make an accurate survey of the square which contains the Institute buildings, as a basis for plans and estimates on the large building to be erected. The overcrowded condition of our lecture-rooms and laboratories evinces the pressing need of increased accommodations for our students, which can only be supplied by the erection of a convenient and commodious building. It is also stated that probably the shops and gymnasium will be removed to the Ross field, as the new building must occupy their present position.

During the absence of Prof. Vose the civils visited the "City of Berlin" in a body, spending an afternoon in examining the vessel.

'84 mechanicals have made the annual visit to the Charlestown Navy Yard.

It is stated that belts made from mineral tanned leather are not only cheaper but considerably stronger than those made from leather tanned by the usual process.

A belt was made in Berlin lately, six feet three inches wide, and weighing a ton and a half. It required 200 of the largest and heaviest ox hides to make it, and its cost was over \$4,000. It is to transmit 500 horse-power.

Department of Architecture.

MR. KIDDER has been taken quite ill, and Prof. Clarke has been obliged to assume his duties. Prof. Clarke has set several members of the department to writing criticisms of some of the prominent buildings in town.

The three regular Seniors are at work on a solution of one of the arched ribs in the train house of the Providence Depot.

The new problems are, for the Seniors, a gate and lodge at the entrance to a French Chateau; and for the Juniors, the six-column problem.

Mr. Crowninshield delivered a lecture on stained glass, at his studio, on Thursday afternoon. The Art School and the department were both well represented. Quite a number of outsiders were present also.

The lectures we spoke of in the issue before last will begin with three lectures on ornament, by Mr. Cummings, on Thursday afternoons; the first lecture to be given on Thursday, April 13. Mr. Rotch will come along later. Mr. Van Brunt has informed the department that unfortunately he will be too busy to give his course this spring.

The architects have organized a boat crew, and will begin practice on the Charles as soon as a boat can be obtained. The members of the crew are as follows: Hooker, Trowbridge, Kingsbury, Fisher, Jenney, Sunderland, Drach.

The finest of the Amherst College buildings was partially destroyed by fire last Wednesday evening. Fine collections of minerals, physical apparatus, paintings, etc., were destroyed, the estimated loss being about a quarter of a million dollars.

Messrs. O. D. Skinner and W. B. Myers, of Lafayette College, Easton, Pa., have been visiting brother "Sigs" in the Institute.

The date for the annual ball has been fixed for Friday, April 21. Tickets now ready.

In General.

EIGHTY-FOUR'S class supper comes off at Young's this evening at half past six.

Examination in qualitative on the 10th, for '85.

'85 is slowly recovering from another trigonometry examination.

Miss Geraldine Ulmar was at the dance on Thursday.

The Senior miners have begun a course in the blacksmith shop.

The janitor has put a much-needed coat of paint on the gym. boxes.

The second and third divisions in assaying complete their work in that subject next week.

One of the Techs has a goat which he says is more æsthetic than Oscar Wilde, — it's all butt.

A cutting from the *Herald* on the bulletin board announced that "Chip" was "doomed to death."

A special '84 has been testing the action of acid sulphate as a flux in reducing chloride of silver.

"Where's Mr. Robbins? Oh, there he is. Why, what's the matter with him? By gracious! he's got his w—— c—— off!"

No more slamming of doors! The portals of this institution have been supplied with a patented device for stopping the noise.

The social life of the Institute is "booming" just at present with athletic meetings, prize drill, Senior ball and class suppers, besides various secret-society banquets.

Prof. Vose has just returned from a few days' absence in Maine, bringing joy for the poor civils, who were getting quite despondent at his prolonged stay.

Mr. A. N. Hardy, photographer of the graduating class, has just issued a neat little paper entitled *Boston Photographer*. It is published quarterly, and is instructive to all.

Two Sophs and two Freshmen tried duck-hunting at the Cape a week ago last Saturday. Never mind the results. They will assure you that the *hunting* was fine.

Supt. Johnson, with Col. Ball and several ladies and gentlemen, recently visited the mining laboratory to see the working of some of the gold ore from their mines near Lisbon, N. H. About 2,400 lbs. is being worked.

Hadley's "Notes on Stirring" have not yet been papyrographed. They will, however, be out in a few days, and with them will be given a few notes on "Decantation." We advise the Sophs. to immediately provide themselves.

At a meeting of the class of '84, held March 15, Messrs. Jarvis, Rotch, and Pratt were elected to serve on the Senior ball committee. Messrs. Jarvis, Otis, and Johnson were chosen as a committee of arrangements for the class supper.

It is with pleasure that we note the establishment of a chapter of the Sigma Chi fraternity in our midst. This is one of the five largest college fraternities in America, and will, it is hoped, be a great benefit to the social and literary life of the Institute.

Mr. Manning, '82, with two other mechanicals, recently indicated the engine in the mining laboratory. The evidences of good order shown by their instruments were very flattering, and are due to the efficiency and watchfulness of our worthy friend "Jack" Gooding.

A reward is offered for a method of generating pure chlorine, on a large scale, for the conversion of stannous chloride into stannic chloride, and then for a test for the stannic in presence of the stannous. Apply to M—s R——, '82.

The ingenuity displayed and time wasted by Mr. Smith, '83, in making watch glasses, etc., from broken flasks, is remarkable. We move that all cracked flasks, etc., be handed to him for utilization. A recompense would be the presentation of nine tenths of the product.

A short time since the Institute was treated to a novelty in company drill. All the privates were excused and the non-commissioned officers acted as privates. Major Alexander took command of the company, Capt. Hunt acted as lieutenant, and the rest of the officers filled the places of sergeants and corporals.

Quite a large-sized mouse was caught in the quantitative lab. the other day. No harm was done, but several speculated wildly as to what in the world that mouse lived on in that locality. Whether he, she, or it lived on wood, bricks, bottles, or the reagents therein, was left to the learned chemists and the janitor.

At a meeting of the officers of the C. C. M. I. T. held last Wednesday, it was decided to offer two medals, one gold and the other silver, for the competition in the manual of arms. The drill will take place about the first of May. It is hoped that every man will take an interest in the affair and compete for a medal. The non-commissioned officers and privates have decided to hold a dance immediately after the prize drill, and a committee consisting of Sergeant McKim, Corporals Ames and J. M. Kimball was appointed to make necessary arrangements.

Our '82 physicist is making some curious discoveries. He inserted two standard thermometers in an oil bath and heated them to about the boiling point of mercury. In an Alverquist thermometer the zero point before heating was $+ .2$; but after heating for two weeks at 280°C. , and one week at 350° , the zero point was raised to $+ 18.5^{\circ}$. The other thermometer, a standard Bowdin, changed 12.5 degrees. The experimenter explains it as follows: The glass bulb, after blowing and filling, is always under an initial strain due to rapid cooling. When it is again heated to high temperatures, the initial strain is removed by the glass becoming viscous. Now, by the slow cooling in the oil bath, no new strain is introduced, and the consequence is a change in volume of the bulb.

Exchanges.

THE new names which appear in the lists of editors in the last issues of many of our exchanges indicate that we have reached the season of the annual change in editorial staffs. In most cases the control of the paper passes to members of the Junior and Sophomore classes, relieving the Senior of all editorial responsibility in anticipation of the extra work incident to the final term of the four-years' course. The manner of making the appointments varies in different colleges. By the most commonly accepted plan, the incoming editors are elected by the retiring board from those members of the third and second year classes who, by their contributions to the paper during the preceding year, have shown themselves best qualified for the positions.

In a few colleges the competition for positions on the leading papers is oftentimes excessive; and of some, the *Yale Lit.*, for example, it is said that an appointment on the staff is regarded as the highest literary distinction that the college can bestow. In the cases of other papers on our table, judging from their contents, we do not imagine that this competition is extraordinary.

Under the common arrangement the whole responsibility of the management of the paper rests with the editors; and according as the management is a failure or success will they find themselves with a deficit to be made up or a fund to be divided at the end of the year. Each man being individually and pecuniarily responsible, it is for his own advantage to make the publication as interesting as possible to his brother students and others; while his pride in his own work and in the reputation of his college abroad, which depends not a little upon the quality of the student publications, combine to incite him to do his best.

Our own plan differs somewhat from this arrangement, the editors being appointed by a board of directors, elected from the four classes, who are responsible to the school for the man-

agement of the paper and the proper selection of the staff. By this method it was intended to relieve the editors of all pecuniary responsibility, and leave them at liberty to carry on the paper in the manner deemed for the best interests of the school. Whether this arrangement will work as expected yet remains to be proved; so far it appears to be generally satisfactory, although the greater part of the work for the paper has been done by a comparatively few members of the institution. The time for election of the new boards, both of directors and editors, has not been decided; and it may be well for our management in arranging the matter to take into consideration the usages of other colleges more experienced than ourselves in the art of successful journalism.

Our Tuftonian friends are somewhat exercised over our alleged disrespect for their publication. Sorry, Tuffy, but don't be discouraged. Don't parade the mortar-boards on the street any more, and give up the candy pulls; devote a little more time to preparation, and perseverance may work wonders.

The cost of the proposed new gymnasium for Amherst is placed at \$50,000, \$30,000 having already been pledged.

The University of Michigan will present a French play this spring.

The schedule of intercollegiate base-ball games will be found in a number of exchanges in the reading-room.

Prof.: "How is power applied to this machine?" Junior: "It is turned by a crank." Prof.: "Just step forward and illustrate."

Record.

Yale closed her foot-ball season with over twelve hundred dollars in the treasury.

Instructor in logic: "Mr. —, what is the universal negation?" Student: "Not prepared, sir." — *Index.*

Of Harvard's valedictorians for the last fifty years, not one has used tobacco.

There are 7,000 Americans now studying in German schools and universities. — *Ex.*

It is rumored that a large number of Princeton students are to publish a card setting forth the injustice of the restraint which President McCosh places upon their recreations. They claim such action on his part is unjust and injurious, and belittles them needlessly in the eyes of the world. — *Echo.* We wish it understood that the above rumor is entirely false, and we hope our exchanges will correct the error.

Princetonian.

Yale's new athletic grounds comprise thirty acres. There are three base-ball fields and a rifle range, besides tennis, archery, foot-ball and cricket fields. — *Ex.*

The retiring Senior editors of the *Vassar Miscellany* plume themselves upon the fact that they have published more marriage notices than any previous board. — *Ex.*

We sat alone: your little hand
Lay on the table by my own.
Only a little hand, and yet
I cannot, while I live, forget
The tremor of profound regret
When I saw how your hand had grown.

We parted, but your little hand
Lay on the table cold and fair;
Wide was the scope the numbers spanned:
Three bright-robed queens serene and bland,
Two rampant Jacks, a happy band,
While I had only one small pair.

Student.

Students are urged to avail themselves of the advantages of the Art Museum and Natural History Rooms, both of which are open on Saturdays.

One of our boys, who believes in the dissemination of knowledge, has his boarding-house waiter trained so fine that he has only to say, "Pass the $\text{Ca CO}_3 + \text{H}_2\text{O}$," to get the milk every time. Our friend says he don't know the symbol for oleomargarine, or he would know what to do about the butter.

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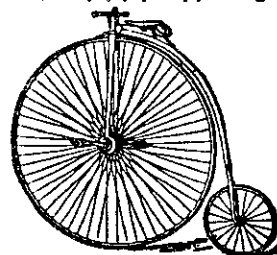
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