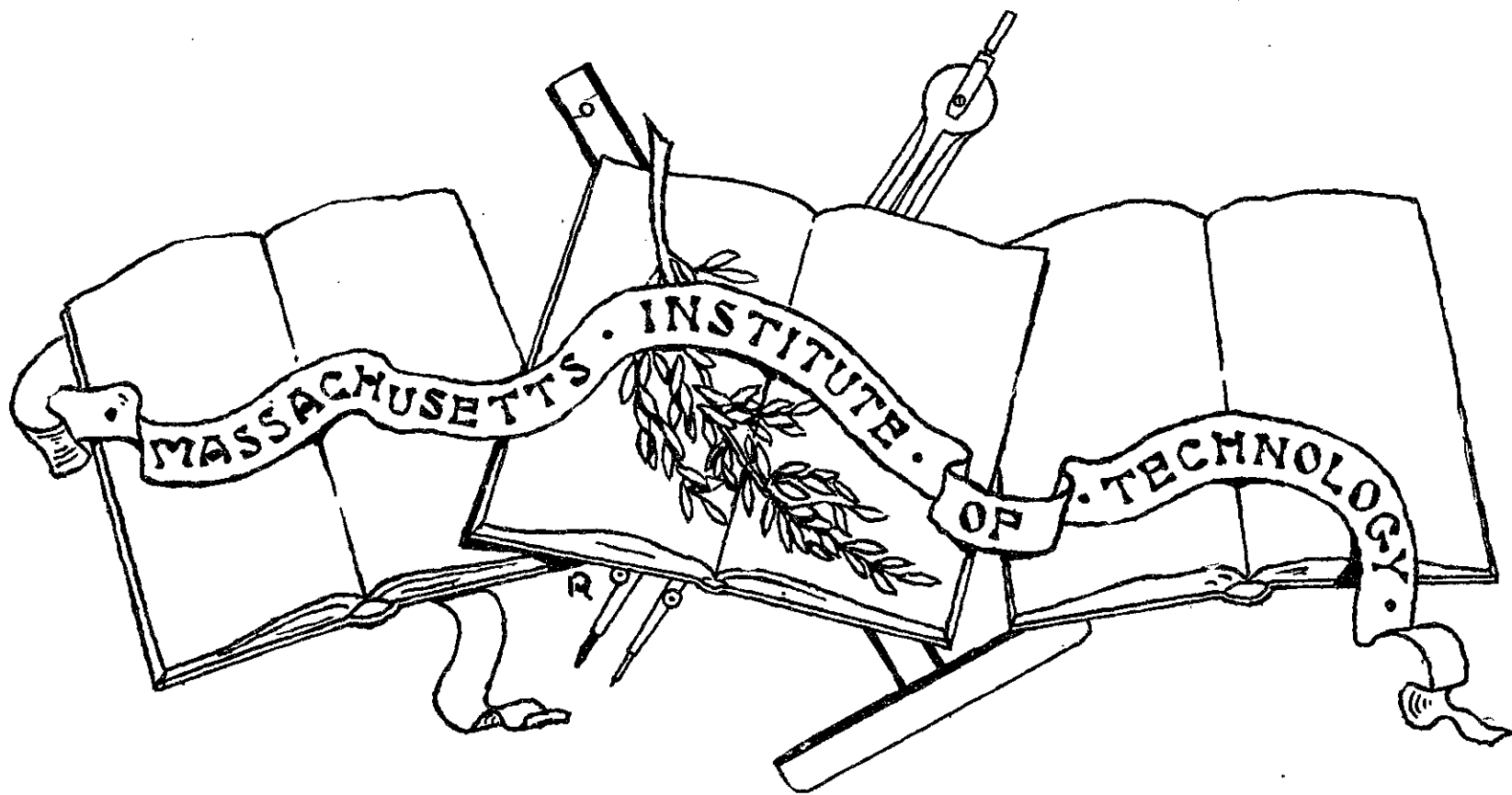
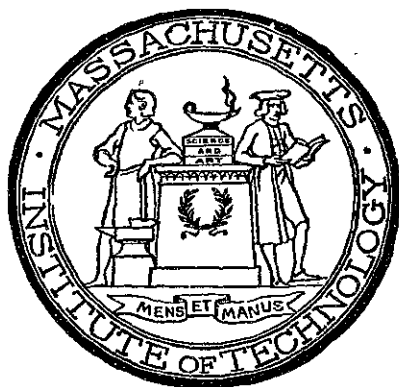




THE TECH



BOSTON, MASS.

VOLUME XVI.

NUMBER 3.

OCTOBER 22, 1896.

LePurdy & Co.

(SUCCESSORS TO HASTINGS)

**146 TREMONT STREET,
BOSTON.**

**Strictly High Grade
Photographs AND Portraits.**

Special Rates to all M. I. T. Students.

**OAK GROVE CREAMERY COMPANY,
DAIRY LUNCH ROOM.**

445 BOYLSTON STREET, COR. BERKELEY, opp. Y. M. C. A. Building,

Where can be had Sandwiches of all kinds, Soups, Tea, Coffee, and regular Dairy Lunch.

EVERYTHING FIRST CLASS.

Pure, Fresh-churned Butter, in Quarter-pound Prints, 5 and 10 Pound Boxes. Pure, Fresh Milk and Cream, delivered in Glass Jars. Fresh-laid Eggs. Pure, Full Cream Cheese, American (plain), Sage, Neufchatel and Edam. All kinds of Fruit Ices.

NELSON L. MARTIN.

STUDENTS' SUPPLIES.

Drawing Instruments and Materials of all kinds

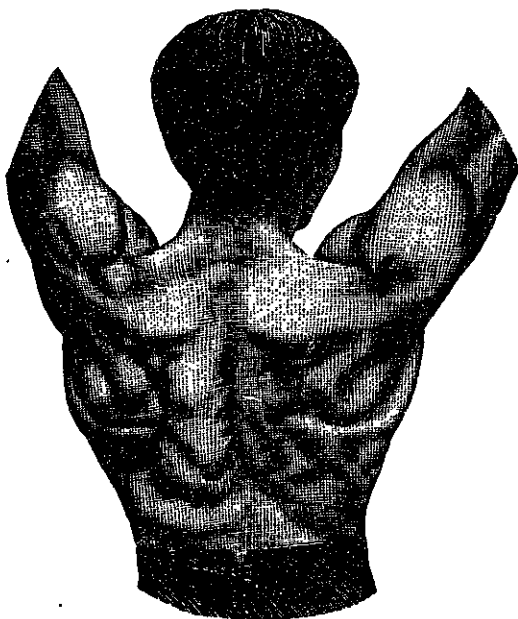
Lowest Prices and Finest Quality of Goods Guaranteed.

All kinds of Note and Class Books on hand.

Everything needed in the Drawing Room.

At Room 10 Engineering Building and Basement of Architectural Building.

R. J. NORMAN.



GYMNASIUM.

Physical Culture. Keep in Condition by using our Gymnasium.

BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION,

Boylston and Berkeley Streets.

TERMS, \$10 PER YEAR.

INCLUDING ALL OTHER PRIVILEGES of the ASSOCIATION.

MEDICAL SUPERVISION.

FINE APPARATUS.

CONVENIENT LOCKERS.

FREQUENT CLASSES.

NEW SHOWER, SPONGE, SPRAY, AND STEAM BATHS.

FREE INSTRUCTION.

OPEN, 9 A. M. TO 10 P. M.

MASSAGE DEPARTMENT—SERVICES REASONABLE.

R. J. ROBERTS, Director. GEO. L. MEYLAN, M.D., Medical Director.

L. P. HOLLANDER & CO.,

202 to 212 BOYLSTON STREET AND PARK SQUARE.

SPRING FASHIONS IN YOUNG MEN'S CLOTHING.

EVERYTHING WE OFFER FOR SALE IS EXCLUSIVELY OF OUR OWN MANUFACTURE.

SACK SUITS OF TWEEDS AND HOMESPUNS, \$18 TO \$26.

KNICKERBOCKER SUITS AND TROUSERS OF IRISH AND SCOTCH HOMESPUNS A SPECIALTY.

Silk-lined Covert Coats, \$24.

ALSO, NEW STYLE HATS, NECKWEAR, ETC.

THE HAT OF THE SEASON.

SPECIAL ATTENTION

Given to Technology Uniforms.

STYLE



PRICE,

1616

\$2.00.

Special 1616

has all the characteristics of a \$3.00 hat and costs but \$2.00.

THE LARGEST STOCK IN BOSTON OF

NOBBY SUITS AND OVERCOATS.

CONTINENTAL CLOTHING HOUSE,

COR. WASHINGTON AND BOYLSTON STREETS.

ST. BOTOLPH HALL CAFÉ,

38 ST. BOTOLPH STREET.

PRICES:—Regular weekly board . . .	\$6.00	Regular weekly Luncheon . . .	\$1.50
“ “ Breakfast and Dinner . . .	5.00	Single Meals, Breakfast40
“ “ Breakfast . . .	2.50	“ Luncheon25
“ “ Dinner . . .	3.00	“ Dinner50

21 MEALS TICKET, \$7.00.

MEALS TO BE TAKEN WHEN DESIRED.

Patrons are assured that everything served in this Café is the best of its kind in the market.

Thanking students of the Institute for their past support, I respectfully solicit a continuance of their esteemed patronage.

M. DWYER.



J. C. LITTLEFIELD,

Tailor · and · Outfitter,

21, 23 BEACON STREET, BOSTON.

I can offer you a larger and more complete assortment than can be seen elsewhere, and at lower prices for the same qualities. Look in and examine my prices before placing your order.

GOLF BREECHES, RIDING BREECHES, AND DRESS SUITS A SPECIALTY.

DISCOUNT TO STUDENTS.

TRADE MARK

COLLINS & FAIRBANKS
CELEBRATED

SOLE AGENTS FOR HENRY HEATH'S AND A.J. WHITE'S LONDON HATS

HATS

STYLES CORRECT
QUALITY UNEQUALLED

381
WASHINGTON ST. BOSTON

Wm. Brooks & Co.
Importing Tailors

15 MILK STREET.
OPPOSITE OLD SOUTH CHURCH.

BIRTHPLACE OF FRANKLIN.

BIRTHPLACE 1796

LONDON OFFICE, 6 SAVILE ROW, W.

THE LARGEST ASSORTMENT OF FOREIGN WOOLLENS SHOWN IN BOSTON

M. I. T. CO-OPERATIVE.

THE TECH

VOL. XVI.

BOSTON, OCTOBER 22, 1896.

NO. 3

THE TECH

Published every Thursday, during the college year, by students of the Massachusetts Institute of Technology.

CHARLES-EDWARD AMORY WINSLOW, '98, *Editor in Chief.*

CLARENCE RENSHAW, '99, *Assistant Editor in Chief.*

THOMAS EDDY TALLMADGE, '98, *Secretary.*

HARRY DRAPER HUNT, '97.

MORRIS KINNARD TRUMBULL, '97.

LESTER DURAND GARDNER, '98.

WARD WELLINGTON WARD, '98.

HAROLD WELLINGTON JONES, '98.

W. R. STRICKLAND, '98, *Business Manager.*

E. R. SHEAK, '99, *Ass't Business Manager.*

Subscription, \$2.50 per year, in advance. Single copies, 10 cts. each.

For the benefit of students THE TECH will be pleased to answer all questions and obtain all possible information pertaining to any department of the College.

Contributions are requested from all undergraduates, alumni, and officers of instruction. No anonymous manuscript can be accepted.

Entered in Post Office, Boston, Mass., as Second Class Matter.

ONLY once in four years comes the chance of a torch-light parade, and we hope that no Technology man will blame himself too late for having failed to take in the one this year. Ninety-six men looked back on that of '92 as one of the jolliest times of their whole college course. Not only for his own sake every man should turn out, but also in order that Technology may be adequately represented. The prospect is that Harvard will have nearly two thousand men in line, and we must work hard not to make a poor showing in comparison. Besides a large number of men in the body of the procession, floats and barges are needed to make up an interesting division. Many of our organizations ought to arrange such features. For one, the Board of Editors of THE TECH pledge themselves to do so.

THE rapid increase of new societies along with the decay of existing organizations seems to call for a note of warning. The

debts incurred in '95 by L'Avenir and Der Deutsche Verein are still a blot upon Technology. A portion of the money due was raised last year, and L'Avenir, we believe, has already begun its meetings for the present season.

It seems that in these directions there is sufficient outlet for any superfluous energy, and the old societies ought surely to be put upon their feet before new ones are formed, which may perhaps have as long lists of members and as few willing to attend meetings, as large debts and as slender purses to pay them. If a definite need for a new society exists, well and good. The more successful societies the better. But the promoters of new schemes should make sure that the need does exist, and that it is in their power to meet it successfully.

A RECENT issue of the *Harvard Crimson* contains a call for an open meeting under the direction of the Student Volunteer Committee. The Committee is composed of students, and its object is the direction of charitable and philanthropic work carried on by undergraduates. The *Crimson* says: "It has been estimated that last year one man in every eight was engaged in some philanthropic work." As justly remarked, this is sufficient to disprove the "charge of Harvard self-sufficiency and indifference." There is no reason why similar work should not be done at the Institute; opportunities are certainly abundant. It is often charged that college men are not in touch with the world; and while the Institute is, perhaps, less open to such a charge than most colleges, still, it is very true that we do not take advantage of all our opportunities. Students in-

terested in charitable work are invited to confer with H. D. Hunt, '97. If sufficient men respond, it is hoped that an organization similar to that at Harvard may be formed.

THE men of 1900 should bear in mind that there are various representative societies and clubs connected with Technology which depend upon the student body for support. These organizations are no less a part of the means for gaining a perfect education than the daily routine of study and recitation. Each student should feel that there is a place waiting for him, if not on the Athletic teams, or in the musical or literary bodies, perhaps in the class association or in a social or scientific society. All these offer opportunities for the student to help his college and himself. In no direction does one get surer return for the energy expended than in working for the advancement of those interests, the glory of whose success falls upon all alike, and whose failure, in turn, reflects upon all. With our eleven hundred men to draw from there is no reason why Technology's colors should not stand for victory in whatever line she competes. Let every man feel it his personal duty and own particular business to put the Institute in its rightful position,—at the head in athletics, musical organizations, and college journalism, as well as in scholarship.

THE amount of interest shown by the men of Course VI. in the Electrical Engineering Society, at its first meeting last Thursday, is an indication of the fact that surely, though slowly, the students as a whole are beginning to appreciate the worth of the professional societies. Nothing is more valuable to a scientific man than the ability to explain clearly and fluently to an audience of his fellows, the facts gathered from his investigations or experience. This ability can be acquired only by practice, and to give such practice is the aim of these societies. Too

many men graduate from technical schools well trained, perhaps, in Science or Engineering, but able neither to speak nor write fluently; and such men find themselves heavily handicapped in the race against the ever-increasing number of men from classical colleges who are entering technical pursuits. Aside from this, however, the papers read at the meetings of such bodies are often of great interest, and in some cases, notably that of the Electrical Society of Cornell University, the articles presented during the year are collected and published in book form, where they form a valuable series. Then, too, the social side of these organizations, although not at all prominent, is by no means to be overlooked. Many men at the Institute think—whether wisely or not we will not attempt to discuss—that they have no time to spare for societies of a social or semi-social nature; and to such men is given the opportunity of meeting the other men in their respective courses in a less perfunctory way than in the class room, and yet the time so spent is strictly in the line of their professional work.

WE note with pleasure the success of William Herbert King, Course IX., '94, who has been awarded the fellowship in Administrative Law at Columbia College. Mr. King was a member of THE TECH Board during his Junior and Senior years. This makes the third fellowship awarded at Columbia to Technology graduates from Course IX. William Z. Ripley, '90, and Francis Walker, '92, were the other successful candidates, and the only men from Technology who have competed. Course IX., like all the other courses at the Institute, takes the lead in college competitions.

A GREENING.

A green little boy, in a green little way,
A little green apple devoured one day;
And the green little grasses now tenderly wave
O'er the little green apple boy's green little grave.

—Hermonite.

Technology Men in Greenland.

[Written expressly for THE TECH, by Prof. Alfred E. Burton.]

Two entirely independent parties of college men accompanied the sixth Peary expedition to North Greenland this summer. Each party was equipped with camping outfits and the instruments for scientific research.

One party, under the leadership of Prof. Alfred E. Burton, of the Institute of Technology, was landed August 5th at the Danish trading station of Umanak, in Lat. $70^{\circ} 40'$.

The other party, composed of professors and students from Cornell University, under the leadership of Prof. Ralph S. Tarr, was landed August 7th at Wilcox Head, Lat. $74^{\circ} 10'$.

Both of these parties were busily employed for five weeks in their chosen lines of research, until called for by the steamer Hope, of the Peary expedition, on her return from the north.

There were three men from Technology in the party landed at Umanak: Prof. Alfred E. Burton, Assistant Prof. Geo. H. Barton, and Mr. Russell W. Porter. The other members of this party were Mr. G. R. Putnam, an officer in the U. S. Coast and Geodetic Survey, Mr. J. C. Phillips, a student at Harvard University, and Mr. A. M. Dodge, a student at the Harvard Medical School.

The locality of Umanak Fjord had been selected as affording especial facility for the careful study of the inland ice cap, and the larger glaciers which discharge icebergs into the North Atlantic. This fjord makes the deepest indentation into the ragged coast line of Greenland, and has on its shores some of the largest and most prosperous Eskimo settlements. The upper end of the fjord seems never before to have been visited by an American party. The scenery here is grand and beautiful; the coast rises abruptly to heights of from 3,000 to 6,000 feet on either side, and between these gigantic walls there moves a continuous procession of monster bergs into Baffin's Bay.

Umanak settlement was the starting point for several open boat journeys which were made, with the aid of native crews, to points within a radius of fifty miles. The great Karajak glacier, at the extreme end of the fjord, was studied carefully by Professor Barton for two weeks. Its motion and rate of melting were measured. A three days' trip was taken onto the inland ice cap, and many photographs and sketches were made to illustrate the structure and action of the ice. The thermophone was used in determining the ice, air, and water temperatures at the Itivdliarsuk glaciers. Several long tramps on the land enabled Professor Barton to make corrections on the existing maps, and to learn much about the past action of the ice streams which once covered the entire country. But by far the most important results to the scientific world accomplished by this party will be found in the admirable work done by Mr. G. R. Putnam, with the pendulum and magnetometer. His instrumental outfit was one of the most complete ever taken beyond the Arctic circle, consisting of magnetometer, dip circle, astronomical transit, chronometers, and the half-second pendulum apparatus recently perfected by the U. S. Coast Survey. Mr. Putnam took advantage of every stop made by the steamer Hope, going and returning. Whenever there was an opportunity to land, magnetic or pendulum observations were taken. Measurements of the declination of the needle, the dip, and magnetic force were made at Halifax, N. S.; Sydney, Cape Breton; Turnavik, Labrador; Ashe Inlet, Hudson Strait; Godhaven and Umanak, Greenland; and Niantilik, Cumberland Gulf. All but two of these stations have been previously occupied for magnetic observations, and the present results cannot therefore fail to be of interest in connection with the study of the annual changes of the magnetic elements.

Pendulum observations were made at four stations: Sydney, Cape Breton; Ashe Inlet, Hudson Strait; Umanak, Greenland; and

Niantilik, Cumberland Gulf. The pendulum observations were made for the purpose of determining the force of gravity and deducing the figure of the earth. In the report by Professor Helmert, made before the international Geodetic Association in 1895, which covered all accepted work up to that time, there are shown to be no gravity stations on the west coast of Greenland, and none on the shores of Baffin's Bay; none, in fact, between Boston and Montreal on the south, and Fort Conger (Lieutenant Greeley's station) on the north. These results of Mr. Putnam's, therefore, can be seen to be of especial value, and will be reported to the International Geodetic Association.

Another result of the Greenland trip that will be appreciated by all Technology students, is the fine collection of water-color sketches and studies of Eskimo heads made by Mr. Russell W. Porter. These sketches and the collection of costumes, implements, and furs, will probably be placed on view in one of the rooms in the Technology buildings some time this month.

Meeting of the Corporation.

THE Corporation of the Institute held its autumn meeting on Wednesday, the fourteenth. Its various committees were chosen, and the appointments announced in the last number of THE TECH were confirmed. Among the visiting committees the changes were as follows: Mr. James P. Tolman was transferred from the Department of Literature, History, and Political Economy to that of Mining and Metallurgy. Mr. Charles L. Lovering was also placed in the Department of Mining and Metallurgy. Mr. Clarence C. Jackson was transferred from Chemistry and Biology to Literature, History, and Political Economy; and Mr. A. Lawrence Lowell was added to the latter department. Mr. Thomas Gaffield was placed in the Department of Chemistry and Biology. The rest of the committees remain the same as last year.

M. I. T., 6; Andover, 6.

THE Technology-Andover game, on the 14th, resulted in a tie, each side scoring six points. We seem fated to play tie games, this making the third this fall. The game was a hard-fought one, the advantage of superior weight being with Technology. Tech. played the stronger game in the first half, but weakened perceptibly in the second.

In the first half Tech. forced the playing, and succeeded in getting the ball close to Andover's goal. Here Underwood fumbled, and one of Andover's men fell on the ball back of the line, thus scoring a safety and giving Tech. two points. This was the only score in the first half, the ball remaining near the center of the field most of the time.

The second half showed better playing. Tech. had the kick-off, but soon secured the ball, and by steady rushes scored a touchdown. The try for goal failed. Score, 6-0 for Tech. Andover repeated Tech.'s tactics, and carried the ball from the center of the field over the line. The goal was kicked, making the score a tie—6 to 6. There was a good deal of discussion over the decision of the referee on the safety in the first half, but the decision was final, and the score stood. Technology was greatly weakened by the loss of Mansfield and Le Baron. Sanchez was tried at half back, and proved a good man. The center men played well in the first half but weakened in the second. Tech.'s line up was as follows: c., McCormick; r. g., Ulmer; l. g., McConnell; r. t., Osgood; l. t., Nesmith; r. e., Hopkins; l. e., Heckle; q. b., Walther; h. b., Sanchez and Emery; f. b., Underwood. Referee, Le Baron, of Technology. Time, 20 minute halves.

Trinity, 16; M. I. T., 6.

TECHNOLOGY was beaten in a hard-fought game at Hartford last Saturday. The work of the team was much better than in any game this year, and it is quite possible that a creditable showing may yet be made in some

of the later games. Trinity had the ball at the start, and rushed it down the field for a touchdown before Tech. apparently waked up. No goal was kicked. M. I. T. then got down to business, and played the best football of the game, Underwood scoring a touchdown and kicking goal. In the second half the team's defense weakened, and Trinity's fine rushing scored twelve points. Underwood and Emery behind the line played a particularly good game. The line up: r. e., Le Baron; r. t., Osgood; r. g., Ulmer; c., McCormick; l. g., Worcester; l. t., Nesmith (Jowett); l. e., Heckle; q. b., "Frank;" h. b., Sanchez; h. b., Emery; f. b., Underwood.

Intercollegiate Republican Club.

REPRESENTATIVES from Harvard, Technology, Tufts College, Boston University, and Boston Dental College met at 5 Ware Hall, Cambridge, to form an Intercollegiate Republican Association. Messrs. Noble and McCarthy represented the Institute. Mr. R. C. Davis, of Harvard, was chosen President, and Mr. McCarthy, Secretary. The Association has established headquarters at 37 Tremont Street. It will be in charge of the College Republican Parade, which is to take place on the night of either the thirtieth or thirty-first of this month. An invitation has been sent out to all the New England colleges to participate. Here at Technology a bugle corps and a band are being organized, and the tasteful shingles of the Club are in great demand. They may be obtained upon payment of the dues of the Club, twenty-five cents.

Annual Meeting of the Technology Club.

THE annual meeting of the Technology Club was held at the clubhouse, Monday, October twelfth. The Treasurer's and Secretary's reports were read, and officers elected for the ensuing year. The officers elected

were as follows: Treasurer, E. C. Miller, '79; Secretary, C. F. Allen, '72; members of the Council for three years, A. F. Bemis, '93, S. Hollingsworth, '76, F. L. Locke, '86, J. S. Newton, '88, E. G. Thomas, '87; members of the Council for two years, J. Duff, '81, G. J. Foran, '83, J. M. Forbes, '68, H. M. Howe, '71, A. L. Rotch, '84; members of the Council for one year, C. F. Allen, '72, F. C. Blanchard, '91, J. P. Munroe, '82, E. K. Turner, '70, F. H. Williams, '73.

The membership of the Club has been limited to six hundred, of whom not more than sixty can be undergraduates. Notices on the bulletin board state that the clubhouse is open as usual on Sundays, except that no games may be played there, and that members may bring ladies to see the building and for luncheon between twelve and four on Saturday and Sunday.

COMMUNICATIONS.

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

TO THE EDITORS OF THE TECH:—

DEPARTMENT OF HEALTH.

COMMISSIONER'S DEPARTMENT, BROOKLYN, N. Y.

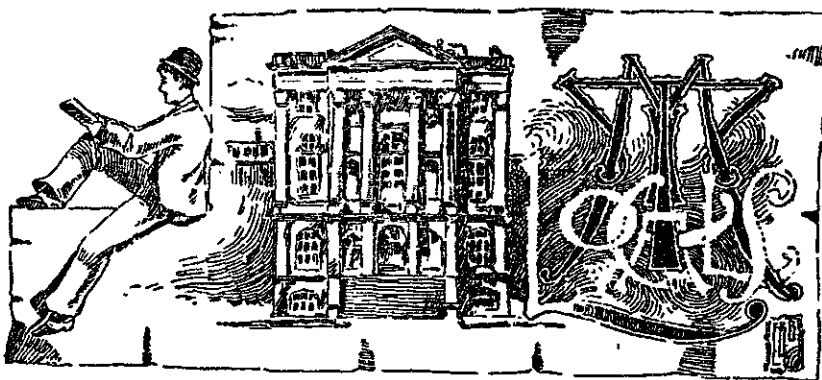
It is with pleasure that I enclose a check for a year's subscription to THE TECH, not only to help you out financially, but also that I may to a slight extent keep in touch with the interests of my Alma Mater.

When I was in college I was deeply interested in her standing in athletics, but already in the few years which have elapsed since graduation, I have lost all knowledge of her records and of her work. The former students of the Institute who reside in and about New York have attempted to keep in touch with her and with one another, by forming a "Tech." society. The result has been especially gratifying, both in the number of men who have joined and in the interest shown.

There are three of us in our office: Geo. F. Rowell, '92, J. Calvin Locke, '94, and

Yours sincerely,

WM. W. LOCKE, '92,
Sanitary Engineer.



The enrollment, as reported at the Secretary's office, is 1184.

Mr. W. R. Whitney, Ph.D., has been appointed Instructor in Sanitary Chemistry.

Soph., reading German, mispronounces "die." Mr. Bl-chst--n: "Never say die."

The white post recently placed in front of Rogers by the West End R. R. is a great accommodation.

Mr. H. N. Dickinson, instructor in English last year, has opened a school for boys at his home in Norfolk, Conn.

Adelphi Academy, whose Presidency Professor Levermore left the Institute to undertake, was incorporated as a college this summer.

On Wednesday evening, October 14th, a reception was given to the Senior students in Course VI., by Professor and Mrs. Lanza, at their home 22 West Cedar Street.

The old familiar landmark, or rather mud-mark, is still most unpleasantly apparent as one approaches the Engineering Building. The mud is as sticky as ever.

The recent report of the death in Cuba of Osgood, the ex-captain and famous full back of the U. of P. football team, is denied by his brother, who is a student at Technology.

Friday, October 16th, the Class of 1900 met and heard the report of the constitution committee. The constitution was read and adopted with very few changes, it being practically the same as that of '98.

Professor Despradelle spent the afternoon of Friday, Oct. 16th, criticising the drawings of

the Third-year Architects. This is something unusual for the Professor, as most of his time is demanded by the Fourth-year men.

The bicycle rack which has recently been placed near Rogers building is a great convenience. So many men now go to and from Technology on wheels, that a suitable place to store them had become very necessary.

The Institute has been fortunate in securing one of the Jeypore Portfolios of Architectural Design that are being given by His Royal Highness the Maharajah of Jeypore, to the educational institutions of the United States.

At a recent meeting of the '98 "Technique" Board, Mr. H. W. Jones was elected to the position of Athletic Editor, which office was left vacant by the resignation of Mr. Ulmer. Mr. Ulmer was elected to the position of Society Editor, in place of the late Mr. Hall.

Two 35 horse power compound dynamos have been received from the General Electric Co., and are being set up in the Electrical Engineering laboratory. They will be driven by a special 75-horse power engine, and will be used by the students in dynamo testing.

Candidates for the Freshman Football team were called out for practice on Thursday, October 15th. Twenty-four men were out, and this number, together with the prospect of two or three more good candidates, makes the outlook very promising. The weight of the team will probably exceed that of their opponents.

A change has recently been made in the work of Course VI., by the addition of one lecture a week on Electrical Measuring Instruments, and a corresponding reduction in the time allowed for the Mechanical Engineering Laboratory. This has been done in order that more time may be given to alternating current measurements.

At the annual election of '99 the following officers were, with one or two exceptions, unanimously elected for the ensuing year:

President, E. H. Hammond; 1st Vice President, R. W. Stebbins; 2d Vice President, T. P. Robinson; Secretary, C. Renshaw; Treasurer, A. L. Hamilton. Members of Executive Committee: W. M. Corse, L. W. Shumaker. Institute Committee: W. E. West, H. L. Morse.

Graduates and former members of the Boston English High School met in Room 26, Rogers, Wednesday, October 14th, with the purpose of forming a club. The meeting was largely attended, and those present evinced great enthusiasm. H. S. Mork, '99, was elected temporary Secretary, and a committee composed of the following men, H. S. Mork, '99, I. H. Kaufman, '98, and Fitch, 1900, was chosen to draw up a constitution and to act, temporarily, as an Executive Committee.

Considerable complaint has been made that the current Engineering Journals are scarcely ever to be found in the Engineering Library. The writer, to make sure, several times went through the list and found but few copies of any of the Journals dating since August of this year. If this is due to carelessness on any one's part in keeping them from the racks longer than allowable, the matter can more easily be remedied. If a monopoly of their use is exercised the librarian should investigate.

A new calibration apparatus, to be used in the standardization of high-grade thermometers, has been received by the Physical Department. It was made in Paris under the specifications of the International Bureau of Weights and Measures, and consists of a rack for holding the thermometer in any position, either horizontal or inclined, together with two telescopes mounted on a sliding scale, by means of which the length of the thread of mercury may be read to within .005 of 1° Centigrade. A new cathetometer has also been received from the Société Genevoise, Geneva, to be used in the determination of pressure coefficients.

The following appointments have been made in the First Year Battalion: Major, F. E. Frye; Adjutant, 1st Lieut. H. M. Thayer, Quartermaster, 1st Lieut. L. Arnold. Co. A.: Captain, G. E. Russell; 1st Lieutenant, E. F. Brigham; 2d Lieutenant, H. R. Hunt; 1st Sergeant, S. B. Elbert. Co. B.: Captain, G. H. Leach; 1st Lieutenant, H. Littlefield; 2d Lieutenant, W. S. Hartt; 1st Sergeant, H. R. Stearns. Co. C.: Captain, C. T. Leads; 1st Lieutenant, A. S. Peck; 2d Lieutenant, R. Lumbert; 1st Sergeant, G. Frink. Co. D.: Captain, R. P. Roberts; 1st Lieutenant, S. G. H. Fitch; 2d Lieutenant, H. A. McPherson; 1st Sergeant, C. B. Cotting.

A meeting of wheelmen was held last Friday, at the call of G. C. Riley, '98, to consider the advisability of forming a club. A committee of three, consisting of Mr. Brewster, '98, Mr. Riley, '98, and Mr. Robinson, '98, was appointed to draw up by-laws. A meeting will be held Saturday, October 24th, to elect officers and accept the by-laws proposed by the committee. All taking an interest in wheeling are requested to be present.

"This," said the Sophomore during his first exercise in the carpenter shop, "seems to be one of those places where it is best to 'say nothing but saw wood.'" Whereupon the piece of plank on which he was at work, feeling rather bored, fell to the floor with a dull thud and murmured softly, "Just tell them that you saw me."

Saturday, Professor Barton took a party to Hoosac Tunnel. Notwithstanding the cloudy weather the trip was a great success. Printed descriptive matter was distributed to the class of one hundred, so no one had difficulty in noting the points of interest as they were passed. The mountains were dressed in their beautiful Autumn colors. After a beautiful ride up the Deerfield valley the tunnel was passed through. Barges were taken at North Adams which carried the party back, across

the range, to see the shafts of the tunnel. Thirty-five of the party returned through the tunnel to North Adams and saw the natural bridge. In the evening Professor Barton lectured on the formation of Greylock. Sunday morning at five they started up Greylock; reached the top at nine; and returning to North Adams, left for Boston at two o'clock.

A number of improvements have been made in the laboratory of Applied Mechanics, during vacation. The 50,000 pound Olsen testing machine has been moved over near the new cement machine, and in its place has been put a 100,000 pound machine of the same make. This machine was built especially for the Institute, and is equipped with an extra set of long columns and extra pulling screws. Both machines have been supplied with iron guards, to prevent injury to the students from flying fragments of fractured specimens. The large girders which are to form part of a 400,000 pounds arch testing machine have been completed, and have been placed in the space between the boiler house and the Architectural building. Their weight is a little over 10,000 pounds. They will be set on piers, very near the same space they now occupy.

The quietest Freshman meeting ever held at the Institute occurred when '00 assembled for the first time as a class. President Walker had ordered both doors open, and the Sophs. had free admittance; but with this inducement only a few of the more temerarious ventured to enter, owing to the fierce appearance of the newcomers. Mr. Russ called the meeting to order, acting as the President of the Junior Class. Among all the nominations for Chairman, Mr. M. W. Hall was chosen. His conduct of the meeting was very praiseworthy. Ninety-nine attempted to vote several times, but were ignored. After much display of willing material, the following temporary officers were chosen: Chairman, M. W. Hall; Secretary, C. M. Leonard; Football Captain,

T. Nesmith; Football Manager, R. J. Roberts. Constitutional Committee: S. G. H. Fitch, C. B. Cotting, P. B. Cooper.

The first meeting of the Electrical Engineering Society for the present year, was held Thursday, Oct. 15th, in Room 22 Walker. The meeting was opened by President Dougherty, who gave a short history of the society, and outlined its plans for the coming year. Professors Cross, Puffer, and Clifford, and Messrs. Laws, Goodwin, Smith, Derr, Wendell, Norton, Drisko, Coolidge, and Lawrence were then elected honorary members of the society; after which Mr. Howes, '97, gave an interesting talk on electric launches, explaining in detail their construction and operation. A noticeable feature of the meeting was the number of Sophomores present, as in former years the membership has been confined almost exclusively to Juniors and Seniors. Messrs. Gray and Ferris, '97, and Lord, '98, were appointed a committee to arrange the programme for the next meeting, which will occur Friday, Nov. 6th. The society has at present eighty-six members. All Course VI. men desiring to join should consult the secretary, Mr. Hayward, '97, before the next meeting.

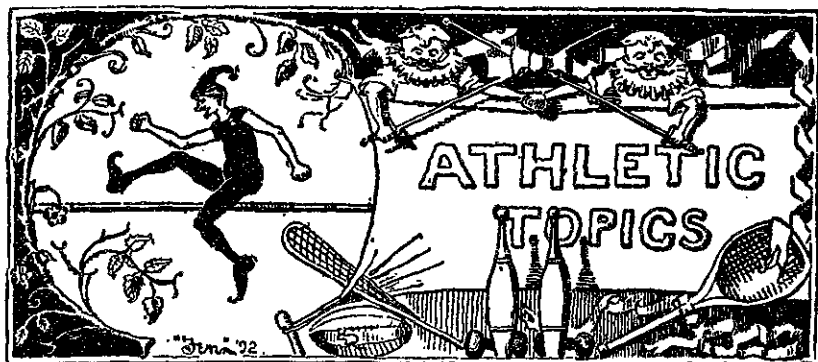
Rondeau.

(On Gibson's picture, the End of the Summer.)

" Shall both forget these lingering summer days,
That seem with languid joy our souls to fill?"
Thus spoke she, wistful, while her level gaze
Sought, o'er the ebbing tide the distant hill,
That glimmered softly through the August haze.

Now all is over; and, as in a daze,
I only know that Fate's resistless will
Has sent us forth on widely parting ways.
Shall both forget?

For her, new love the old love's pang allays;
Perchance if once, for me, her pulse could thrill,
She now finds rapture in another's praise,—
Perchance she only proved her sex's skill;
But never, while my life its law obeys,
Shall *both* forget.



Brookline High canceled her game with '99 last week.

Stephen Chase, Dartmouth, '96, has been called as athletic instructor to Knox College, Ill.

The fall handicap games will be held on Irvington Oval on Saturday. No admission is charged, and a great many men should attend.

The following additional games have been arranged by the '99 Football team: November 7th, Whitman Athletic Club; November 14th, Somerville.

Harvard has won the Intercollegiate Tennis Tournament and secured the cup permanently. Whitman won the singles, and Ware and Scudder the doubles.

Dater, Williams, '96, has this fall entered the Institute, and is taking Course I. with '98. Mr. Dater has the reputation of being a good sprinter and hurdler.

Mansfield, '98, has consented to turn out for the position of quarter back on the Football team, as Nolte has been obliged to stop playing because of a lame hip.

Mr. T. Nesmith, the temporary Captain of the 1900 Football team, has resigned, on account of playing on the 'varsity, and Mr. H. D. Leonard has been elected to succeed him.

Through the courtesy of B. A. A., Technology had the use of the Oval for training last week, and about a dozen men were out daily for practice. One or two Freshmen showed up well in the sprints, and the prospects are that these events will be interesting.

Alumni Notes.

'71. William Abbot Pike, Course I., who died last year, was born in Dorchester, Mass. Immediately after his graduation, in 1871, he was called to the chair of Engineering at the Maine State College, being at that time but twenty years of age. In 1880 he resigned, and accepted a similar position at the University of Minnesota. The Engineering Department of the latter school was built up by him, and the strong position it now holds is due to his efforts. Owing to ill health, in 1892 he was compelled to resign, and from that time to the close of his efficient life he engaged in a private engineering practice,—that of consulting engineer. It was Mr. Pike who had charge of the surveys for the Back Bay improvements. The American Society of Civil Engineers published a Memorial of his life.

'90. Elton D. Walker, Course I., was married, September 2d, to Miss Brownell, of Altamont, N. Y.

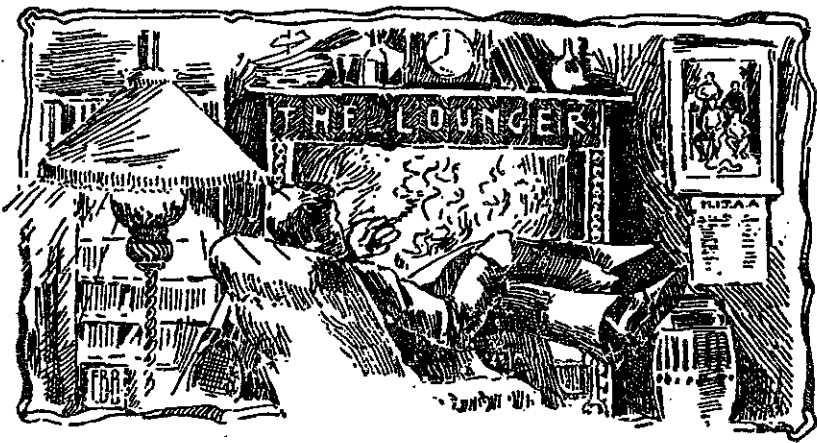
'91. Mr. C. P. Wetherbee, Course II., made the preliminary design for the torpedo boat upon which George Lawley Sons & Company made their bid to the Government.

'92. Harry Atwood Burnham, Course II., was married on September 2d to Miss Hubbard, of Berlin, Vt.

'93. C. M. Spofford, Course I., occupies Mr. McKibben's old position as assistant in Civil Engineering. Mr. Spofford since his graduation has been in the employ of the Phoenix Bridge Company, of Phoenixville, Pa. There he had the experience in bridge work which is so valuable to him in his present position.

'96. Mr. H. G. Fiske has an engagement at Springfield with the Davis Electric Company.

'96. All of Course VIII. men are now employed but one. Mr. Bragg has returned as assistant in Mechanical Engineering, under Professor Peabody.



THE Lounger hears a rumor that a national election is about to take place. This he feels inclined to believe, for he remembers having seen an article about it somewhere in the newspapers. Now, in such a crisis, it is the obvious duty of every young man to arm himself with a torch and sally forth to save his country. Thus reason our genial friends of the Republican Club, and therefore do they roam abroad in the land, doing their utmost to draw silver out of circulation, and to substitute therefor a species of paper currency called "shingles." Truly a torchlight procession is an occasion of almost unmixed joy. On the last affair of this kind the Lounger occupied a snug corner in THE TECH chariot, and this year again he hopes to take a modest share in the proceedings. The moving lights, the flaming transparencies, the huzzaing multitude, all exercise a pleasing influence upon the Lounger's artistic temperament. Two little mementoes he still possesses, which recall the campaign of four years ago with wonderful vividness. One is a glove, which dropped by chance from a first-floor window, wherein sat a dainty damsel with eyes of a tender blue and a Della Fox' curl on her forehead. The procession stopped for a few short moments only; but those few moments were enough to make upon the Lounger's too-impressionable heart a record well nigh ineffaceable. The other trophy is a corduroy waistcoat, also dropped by chance, from the stalwart form of a Harvard Sophomore. This latter interview took place upon the bridge, and the Technology procession stopped for a very short time indeed. But here, too, a very lasting impression was made upon the Lounger,—this time upon his right cheek bone.

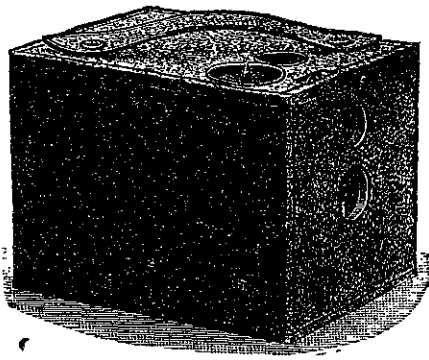
In connection with the present campaign, there appears to be a certain public interest in the currency question. The Lounger, in common with other distinguished men, has hitherto preserved a discreet silence with regard to this matter, but as the election

approaches nearer and nearer, he feels it his duty to make a clear and definite statement of his position. While he fears that thereby he may fatally alienate some of his admirers, yet at least the public can have the satisfaction of knowing precisely where he stands. In the first place it is obvious that the value of currency as a circulating medium depends upon the amount of commodities of any kind, whether produced in the country where the agreement is in force or not, which a given value of the legal tender, either of gold, silver, or paper, as the law shall determine, in that particular nation in which the purchase is to be made, would purchase, if no change in the market value of either article had taken place through cheapening the cost of production, or in any other way tending to cause the currency to appreciate. Therefore, if by such means the parity between the two metals could be preserved without endangering the output from the native mines, which naturally would be less prosperous in proportion as the number of operatives (for to the welfare of the laboring classes must we look first) engaged in that business grew into a more or a less natural relation with the other industries upon which the prosperity of any country, and more especially a new country like ours, depends. In a case like this, where the national honor is so plainly concerned, the Lounger considers this the only logical conclusion.

As the Lounger was snoozing quietly within his sanctum some afternoons since, his meditations were rudely broken by the sound of voices raised in angry disputation. He sallied forth from his retreat and found his good friend, the Editor in Chief, and another scion of the promising Class of '98, engaged in a fervid joint debate. When the Lounger offered his services as referee, he was informed, to his consternation, that the subject under discussion was, "The Economic difference between a Speculator and a Gambler." The disputants also announced that after they had settled this question they were going to tackle another, "Is the Saloon Keeper a Wealth Producer?" The Lounger's first idea was that the philosophers must have been trying to solve the latter question by practical experiment. He was assured, however, that this was not only sober earnest, but term work, the science of Political Economy. Let no one hereafter say that a technical training emphasizes overmuch the practical side of life to the exclusion of the poetic and imaginative faculties.

Photography Simplified.

Picture taking with the Improved Bulls-Eye camera is the refinement of photographic luxury. It makes photography



easy for the novice—delightful for everybody.

LOADS IN DAYLIGHT with our light-proof film cartridges. Splendid achromatic lens, improved rotary shutter, set of three stops. Handsome finish.

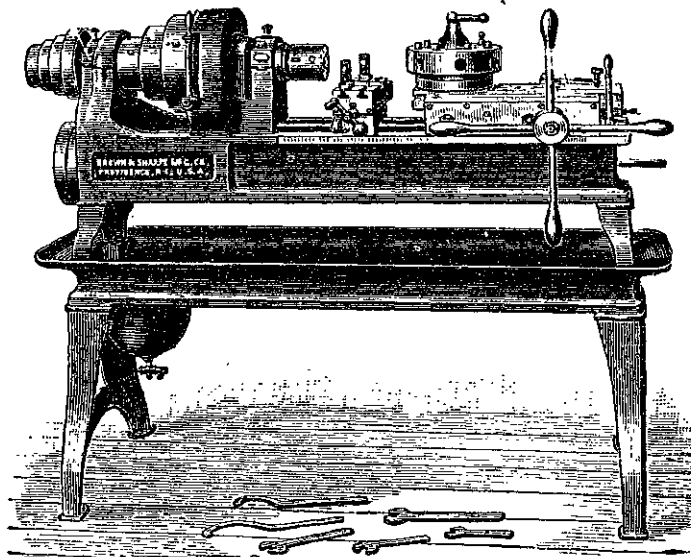
Price, Improved No. 2 Bulls-Eye, for pictures 3 1/2 x 3 1/2 inches,	\$8.00
Light-proof Film Cartridge, 12 exposures, 3 1/2 x 3 1/2,	.60
Complete Developing and Printing Outfit,	1.50

EASTMAN KODAK CO.

Booklet Free.

Rochester, N. Y.

BROWN & SHARPE MANUFACTURING CO., Machinery and Tools, PROVIDENCE, R. I.



No. 6.—Screw Machine, Back Geared, Independent stop for each hole in turret. (Patented Oct. 15, 1889, May 23, 1893.)

SCREW MACHINES,

Six sizes usually in stock.

The smallest has hole 17-32 inch diameter through spindle, and turns any length to 3 inches. The largest has hole 19-16 inches diameter, and turns to 8 inches.

We are pleased to mail Circular or Catalogue (366 pages) upon application.

In the Equipment of a Student's Room,

It is generally conceded that a stringed instrument is almost an absolute necessity. To secure the greatest enjoyment from the purchase get the best your money will afford. Expert judgment pronounces the "Bay State" instruments the finest in the world. An excellent instrument is the



BAY STATE S10 BANJO.

We have in stock cheaper banjos than this, but for a substantial, serviceable instrument, at a low price, no other instrument manufactured can compare with it.

SEND FOR ILLUSTRATED CATALOGUE.

JOHN C. HAYNES & CO.,

453-463 Washington Street, Boston.

If You Draw,

PURCHASE YOUR . . .

Drafting Instruments,
Drawing and Blue Process Papers,
Scales, Triangles, Curves,
T Squares, Colors, etc.,

FROM THE MANUFACTURERS.

Wadsworth, Howland & Co.,

INCORPORATED,

Branch Store: Grundmann Studios,
adjoining Architectural Building.

Main Office: 82 & 84 Washington St., Boston.

Factories: Malden, Mass.

SPECIAL RATES TO STUDENTS.

**ALBERT BENARI,
Tobacconist,**

33 TREMONT STREET, - - BOSTON, MASS.

Agent for the Bohemian Mixture.

FINE LINE OF FRENCH BRIAR PIPES ALWAYS
ON HAND.



WRIGHT & DITSON,

New England's Leading Athletic
Outfitters.

FOOTBALL SUPPLIES

OF EVERY DESCRIPTION.

New and improved lace front canvas and moleskin Jackets and
Trousers, Head Harness, Morrill Nose and Mouth Guard, Stockings,
Jerseys, Shoes, etc. Send for Catalogue.

Estimates and Samples for college, school and club supplies cheer-
fully furnished. Special attention to mail orders.

Football s for practice and Match Games. Official Football Guide,
edited by Walter Camp, 10 cents.

WRIGHT & DITSON,
341 Washington Street, Boston, Mass.

New Tech Pin.

HENRY GUILD & SON

Have the best Tech Pin yet for 75 cents; also a combi-
nation of gold and silver for \$1.00, and Solid Gold at
\$3.00. For sale at the Institute and

433 Washington St., Boston.

MANDOLIN, Banjo and Guitar Lessons.

Instruments, Best Strings, Latest Music, etc.

G. L. LANSING, No. 171 Tremont St.

Ask for Mr. Lansing.



MESSENGER & JONES,

Makers of

Men's Clothes,

388 Washington St., Boston.

RIDING, KNICKER AND GOLF WORK
A Specialty.

STUDENTS

Are cordially invited to inspect our work, which is a model
of neatness, and artistically done. None but competent
men employed.

Your patronage is respectfully solicited.

ERNEST M. ALEXANDER,

Copley Square Hotel.

Hair Dressing Parlor,

Cor. Exeter Street and Huntington Ave.

THE BRUNSWICK

BOSTON.

Boylston and Clarendon Streets,

(Adjoining Copley Square)

Near the Museum of Fine Arts,
New Public Library, New Old
South Church, and opposite
Trinity (Phillips Brooks')
Church, and Institute
of Technology.

**KEPT ON BOTH AMERICAN AND
EUROPEAN PLANS.**

BARNES & DUNKLEE, Proprietors.

H. H. BARNES, Manager.



Scientific Books

DAMRELL & UPHAM,
The Old Corner Bookstore,
283 Washington St., Boston.

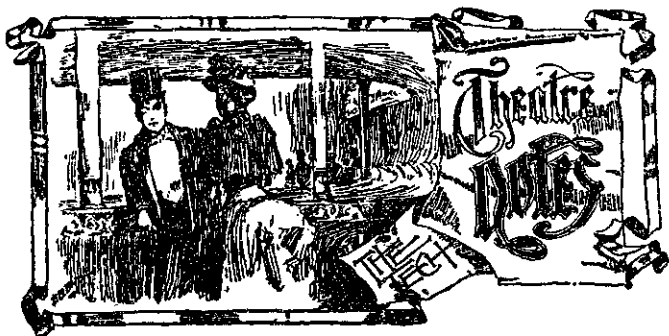
CLASS-DAY INVITATIONS,

BLANK BOOKS, FOUNTAIN PENS,
CAN BE FOUND AT THE CO-OPERATIVE STORE,
H. H. CARTER & CO., 5 Somerset St., near Beacon.

Bookbinding

IN EVERY STYLE.

ALEX. MOORE, 3 School Street, BOSTON.



Week beginning October 26, 1896.

Park Theatre.—"The Strange Adventures of Miss Brown" will open the second week at the Park, October 26th. There have been many new and favorite songs of the day introduced since its first appearance here last year, and Mamie Gilroy and Eugene O'Rourke and other prime comedians are making the play a success.

Boston Museum.—October 26th, the powerful drama, "The Two Little Vagrants" open the sixth week of their very successful engagement at the Boston Museum. Miss Mary Hampton and E. J. Ratcliff grow more popular each week. Miss Hampton has taken a great interest in the Emergency Hospital, and presented them with a large sum of money. The two young actresses, who take the parts of the two little boys, endear themselves to each successive audience, and receive an amount of sympathy rarely lavished upon any stage characters.

Hollis Street Theatre.—Charles Froh-

man's Empire Stock Company will begin a two weeks' engagement at the Hollis Theatre, October 26th. The opening play will be "The Benefit of a Doubt," by A. W. Pinero. This is its first production in Boston. Elsie De Wolf will be seen as Olive Allingham, in which she has made a great hit, and judging from the advance sale of tickets, the play is to be one of the sensations of the season.

Tremont Theatre.—A novelty, which will be advertised later.

Castle Square Theatre.—On October 26th an elaborate production of "The Pirates of Penzance" will be given by the Castle Square Opera Company for the first time. It is a charming opera, full of catchy airs, which some of us ones will greet as old friends, and there is no doubt but this popular company will present the opera in the most successful way, and with a charm it never possessed before.

Boston Theatre.—The Cleveland and Haverly Minstrels open an engagement at the Boston Theatre, October 26th. It is a real treat to have a regular old-time minstrel show once in a while, and this troupe give us the best there is in that line.

The World's Food Fair.—At the World's Food Fair, Mechanics' Building, the management has on exhibition the Zooscope, the latest of all improved life-size animated photograph machines. New and beautiful colored scenes are being shown, and the new aspirant for motion-picture honors is drawing forth considerable well-merited praise from the vast crowds which flock to the art gallery.

LEADING OUTFITTERS

OF

High Grade Mackintoshes

AT POPULAR PRICES.

For the Principal Colleges in New England,
Regular Co-operative Discounts.

CLEVE & KRIM,

Metropolitan Rubber Co.

49 Summer Street, Boston.

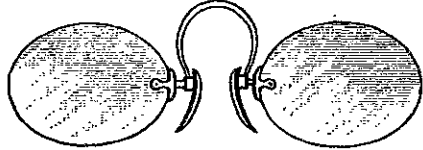
Six Floors of Stationery.

We occupy the entire building, Nos. 49 and 51,
for the Stationery Business. Buy direct
of the manufacturers.

SAMUEL WARD COMPANY,

No. 49 Franklin Street,
Boston.

Rimless Glasses.

25 per cent  Discount.

CO-OPERATIVE LIST.

Oculists' Orders Filled.

FACTORY ON PREMISES.

MAIL ORDERS A SPECIALTY.

CATALOGUES MAILED ON APPLICATION.

C. E. DAVIS,

Manufacturing and Prescription Optician,

2 PARK SQUARE - - - BOSTON.

1 FLIGHT. ELEVATOR.

HIBBARD & MASON

(INCORPORATED)

Tailors,

MUSIC HALL PLACE,

Telephone 579.

Off WINTER STREET.

BOSTON.

DRESS SUITS, SILK LINED, TO ORDER, \$45.

Dress Suits to Let.

Frank Wood,

Printer,

352 Washington St.,

Boston.

Boots and Shoes.

All styles in Calf, Winter Russet,
and Patent Leather.

Rubbers and Overshoes
of all kinds.

PRICES REASONABLE.

Our \$4.00 and \$5.00 Shoes are
of superior style and quality.

DISCOUNT TO TECHNOLOGY.

T. E. MOSELEY & CO.,

469 Washington Street.



The Richmond Straight Cut No. 1 Cigarettes.

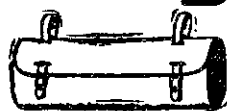
Cigarette Smokers who are willing to pay a little more than the price charged for the ordinary trade cigarettes, will find this brand superior to all others.

These **Cigarettes** are made from the brightest, most delicately flavored, and highest cost **Gold Leaf** grown in Virginia. This is the **Old and Original Brand of Straight Cut** Cigarettes, and was brought out by us in the year 1875.

Beware of imitations, and observe that the firm name as below is on every package.

ALLEN & GINTER
THE AMERICAN TOBACCO CO., SUCCESSOR,
 Manufacturer, **RICHMOND, VIRGINIA.**

FOR THE
 BICYCLE.



**DON'T RIDE WITHOUT
 A REPAIR KIT. FOR YOU.**



POND'S EXTRACT is unequalled for quickly healing all kinds of **WOUNDS, BRUISES, LAMENESS** or **RHEUMATISM.**

Rub thoroughly with POND'S EXTRACT after every ride to keep the muscles supple, pliant, strong. Try POND'S EXTRACT OINTMENT for PILES.

AVOID SUBSTITUTES — Weak, Watery, Worthless.
POND'S EXTRACT CO., 76 Fifth Ave., New York.

O'KEEFE HIGH GRADE FOUNTAIN PEN.

If cannot obtain at your **Bookstore**, to introduce Pen in your College, on receipt of cash with order, will send by register mail one Pen at **20** per cent discount. Clubs of five at **25** per cent discount. Clubs of ten at **30** per cent discount.

Price No. 2, No. 3, No. 4,
\$2.50, \$3.00, \$3.50

**UNLIKE ALL OTHERS IN
 Construction and
 Combination of Parts
 EVERY PART NEW AND NOVEL,
 COMPLETE AND PRACTICAL.**

Call at office of your College paper and see illustration of Pen, and opinions relative to same. Address
Wm. H. O'Keefe, 60 Main St., Lockport, N. Y.
 Advise if fine, medium, or coarse pointed pens are wanted.

Established 1843.

Incorporated 1895.

"STUDENTS," ATTENTION!

LARGEST STOCK AND LOWEST PRICES
 . . . ON . . .

MATHEMATICAL INSTRUMENTS

AND DRAWING MATERIALS OF ALL KINDS, at

FROST & ADAMS COMPANY'S,

IMPORTERS AND WHOLESALE DEALERS,

37 CORNHILL, - - - - BOSTON.

"SPECIAL RATES TO COLLEGES."

NEW ILLUSTRATED CATALOGUE FREE.

**THE
Union Gymnasium**

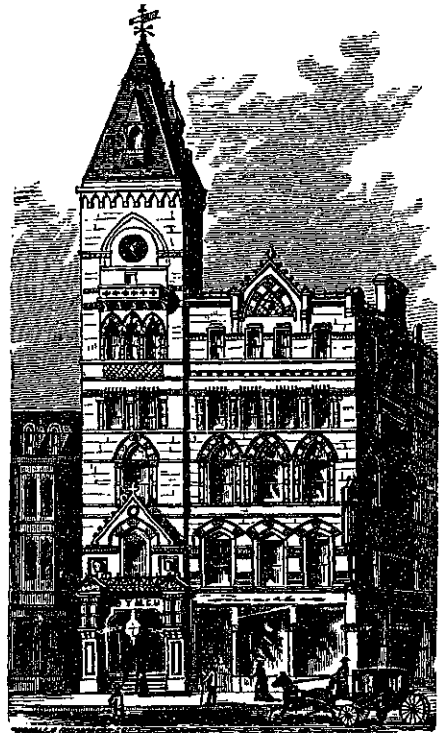
48 BOYLSTON ST. (near Tremont).

PRACTICAL.

Complete
Modern
Apparatus.

Popular
Classes.

Terms,
\$5 and \$8
per Year.



POPULAR.

Extra
Large
Lockers.

Competent
Instructors.

No Extra
Charge
for Instruction

BOSTON YOUNG MEN'S CHRISTIAN UNION.

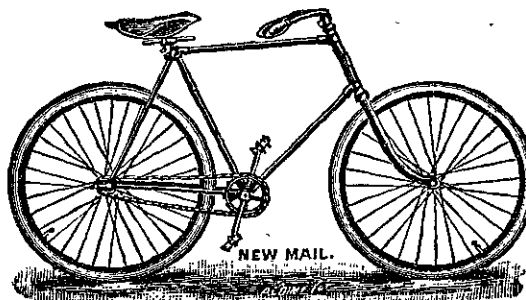
WM. H. BALDWIN, Pres.

GEORGE PEIRCE, Sec'y.

NEW MAIL

HIGHEST GRADE LIGHT ROADSTER.

\$85.



- MEN'S AND LADIES' pattern . . . \$85
- Also **TEMPLAR** medium grade Men's Wheel . \$60
- ATALANTA**, Ladies' Pattern . . . \$60
- Boys' and Girls' Wheels . . . \$15 up

Now closing out a few Shopworn and Secondhand
Wheels, taken in trade, at very low prices. Bargains.
\$25, \$30, etc.

Catalogue and Secondhand list.

.. WILLIAM READ & SONS ..

107 WASHINGTON STREET, BOSTON.

Elmer Chickering

The Leading Photographer.

SPECIAL RATES TO STUDENTS.

THERE is not a photographer in New England who has been more successful than Elmer Chickering, of No. 21 West Street, and people who desire to have first-class photographs taken, of themselves, or of their friends, should go to this gallery. His success in the business is wonderful. His pictures are admitted to be exact reproductions of the subject, and are remarkable for their clearness and fidelity in detail. Among his patrons are the leading citizens of the United States, including presidents, governors, mayors, and others prominent in official lines, the highest military officers, the most prominent opera singers, the leading actors and actresses. Far and near his pictures are known. In Europe as well as America they are highly admired. Mr. Chickering is a host in himself, but with good judgment he has surrounded himself with a corps of operators and assistants in his operating rooms who have no superiors, while in his office is to be found young lady attendants who thoroughly understand how to please patrons, and by their uniform courtesy add much to the popularity of "Chickering's Studio."

NECKWEAR

UMBRELLAS

THE L. E. FLETCHER CO.

College Hatters and Outfitters.

Latest Styles and Popular Prices. Custom Shirts a Specialty.

M. I. T. CO-OPERATIVE SOCIETY.

No. 158 Boylston Street, Boston.

GLOVES

CANES