

# THE TECH

Boston, Massachusetts.

April 11, 1895.

Volume XIV.

Number 26.

# Priest's Dining Room,

102 Dartmouth Street, Boston.

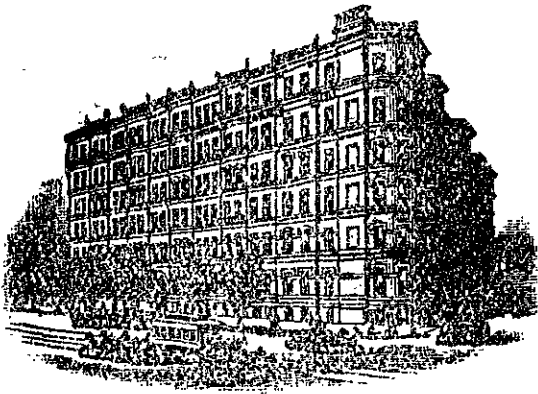
21 Meals (full ticket), \$4.00. 14 Meals, Breakfast and Dinner, \$3.00. 7 Meals, Breakfast, \$1.50.  
7 Meals, Lunch, \$1.40. 7 Meals, Dinner, \$1.75.

HOURS FOR MEALS.—Week Days: Breakfast 6 to 10; Lunch, 12 to 2.30; Dinner, 5 to 8. Sundays: Breakfast, 8 to 10.30; Dinner, 12.30 to 3.30; Lunch, 5.30 to 7.30.

C. M. PRIEST, Proprietor.

## THE HOTEL HUNTINGTON,

60PLEY SQUARE AND HUNTINGTON AVENUE.



Offers large and pleasant outside rooms, from \$7.00 per week upward.

Dining rooms conducted on European plan.

An elegant Gentlemen's Café has recently been added

**C. A. JONES & CO.,**  
PROPRIETORS.

## STUDENTS' SUPPLIES.

Blank Books, Note Books, Drawing Papers, Pens, Inks of all kinds, Fountain Pens.

## PERIODICALS AND MAGAZINES.

Writing Paper and Envelopes with TECH Monogram and Imprint Paper by the pound, at

## SOUTHWELL'S,

Corner Dartmouth Street and Columbus Avenue,  
and 439 Boylston Street.

2d door from Berkeley Street.

# OAK GROVE CREAMERY CO., DAIRY LUNCH ROOM,

445 BOYLSTON STREET, CORNER BERKELEY.

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

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

**NELSON L. MARTIN.**

# T. E. Moseley & Co.,

— SHOES —

The largest assortment in Boston, in Black, Tan and Patent Leather,  
at Popular Prices.

Our \$4.00 and \$5.00 goods are superior in style and quality to those usually sold at such low prices.

**DISCOUNT TO TECHNOLOGY.**

**469 Washington Street.**



**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 \$30 Cheviot and Tweed Suitings.

**GOLF BREECHES, RIDING BREECHES, AND DRESS SUITS A SPECIALTY.**  
**DISCOUNT TO STUDENTS.**

**Banjo, Mandolin and Guitar.**



THE LANSING BANJO.

**G. L. LANSING,**

Teacher, and Director of Clubs,  
171-A WINTER STREET, BOSTON.

BEST INSTRUMENTS CONSTANTLY IN  
STOCK. MUSIC, STRINGS, ETC.

**Drawing Boards, Papers,**

**Inks, Pens, Instruments, and Fountain Pens**

At Discounted Rates.

**A. D. MACLACHLAN,**

Tech Co-operative Store,

214 Clarendon St., · · Boston, Mass.

**Bookbinding**

IN EVERY STYLE.

**ALEX. MOORE, 3 School Street, BOSTON.**

**C. E. RICHARDSON,**

**AGENT FOR DARTMOUTH LAUNDRY,**

Coolidge & Caswell, Prop'rs, 141 Dartmouth St., Boston.

Orders by mail receive prompt attention.

Goods called for and delivered without extra charge.

**WALTER C. BROOKS & CO.,**

**TAILORS**

—TO—

**M. I. T. CO-OPERATIVE SOCIETY.**

15 MILK STREET, BOSTON, MASS.

BIRTHPLACE OF FRANKLIN.

# DAME, STODDARD & KENDALL, GYMNASIUM OUTFITTERS.

SUITS A SPECIALTY.

SHOES, TIGHTS, SHIRTS, STRAPS, ETC.

Special discount to Tech men on these goods.

NO. 374 WASHINGTON AND NO. 2 FRANKLIN STREETS.

## STANDARD CLOTHING CO.,

MANUFACTURING RETAILERS OF

# HIGH GRADE CLOTHING

From both Foreign and Domestic Fabrics.

ALSO ADVANCE STYLES IN TROUSERS, SUITS, <sup>AND</sup> OVERCOATS.

Full Dress Suits Constantly on Hand.

395 WASHINGTON ST.,

- - BOSTON, MASS.

### DR. E. L. JORDAN, DENTIST,

23 TREMONT STREET . . . . . BOSTON.

Opposite Boston Museum.

The only place in Boston where Teeth can be excavated for filling  
WITHOUT PAIN.

**Gentlemen!** I wish to call your attention to the fact that I am **paying the highest Cash Prices for Cast-off Clothing.** Also **Cleaning and Repairing** done at short notice. Send postal to . . . . .

**M. KEEZER,**

105 Lamartine Street, Jamaica Plain, Boston.

I can be found outside the Technology Buildings on Boylston St. daily

THE

# Union Gymnasium.

48 BOYLSTON STREET,

(Near Tremont St.)

SPACIOUS. PRACTICAL. POPULAR.

Complete Modern Apparatus.

Marble and Concrete Bath Rooms, with  
Shower, Sponge, Needle, Douche,  
and other baths.

Dressing Rooms. Extra Large Lockers.

POPULAR CLASSES.

Competent Instructors in attendance Day and Evening.  
No Extra Charge for instruction.

Terms: \$5 and \$8 per year, according to  
hours of Exercise.

### BOSTON YOUNG MEN'S CHRISTIAN UNION.

WM. H. BALDWIN, Pres.

GEORGE PRINCE, Sec'y.

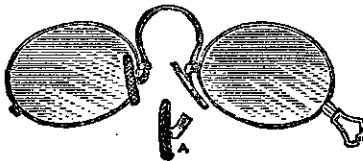
## EYES.



CHAS. W. HURLL, JR.,  
Practical Optician.

C.W. HURLL, JR.  
409 WASHINGTON ST.  
BOSTON.

SPECTACLES, EYE  
GLASSES, OPERA GLASSES,  
THERMOMETERS.



Oculists' Prescriptions filled.

Ten per cent discount to M. I. T. Students.  
409 WASHINGTON STREET, ONE FLIGHT.  
Between Winter and Bromfield Sts.

## FOBES' SHORTHAND SIMPLIFIED.

WRITES LIKE LONGHAND.

EASY TO LEARN, EASY TO WRITE, EASY TO READ.

Lessons by mail. For particulars address WALTER K. FOBES,  
65 Walden Street, N. Cambridge, or Box 2665, Boston, Mass.

# HASTINGS ...

## THE PHOTOGRAPHER.

Pastels, Crayons, Water Colors.

**No. 146 Tremont Street,**  
Over Huyler's.

Branch . . . No. 1068 Boylston Street,  
Corner Massachusetts Avenue.

**S**ILVER MEDAL, Boston, 1881. Gold Medal, Boston, 1887. Grand Prize, P. A. of A., Washington, 1890. Bronze Medal, Washington, 1890. Gold Medal, Boston, 1892. Silver Medal, Chicago, 1893. Aristo Award, St. Louis, 1894. Gold Badge, Cramer Award, St. Louis, 1894. Special Diploma, Illustrative Class, St. Louis, 1894.

### RESTAURANT MARLIAVE,

11 Bosworth Street.



Established 1870.

Awarded Gold Medal at the Fifteenth Annual Exhibition of the Massachusetts Charitable Mechanic Association.

**HENRY D. CASEY,** 198 DARTMOUTH STREET, BOSTON,  
near Copley Square.

**Manufacturer and Gilder of Gold and Bronze Landscape and Portrait Frames**

In Antique and Modern Designs. Old Frames and Furniture Repaired and Regilt.

Artists and Art Patrons will realize a great saving by dealing directly with the Manufacturers. Models and Patterns of Frame Architecture can be seen at Studio. Oil Paintings Cleaned and Restored.

## CONTINENTAL CLOTHING HOUSE,

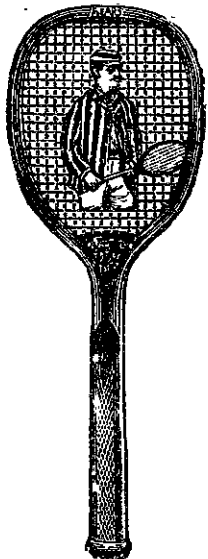
### MEN'S, BOYS', AND CHILDREN'S CLOTHING,

GENTS' FURNISHINGS, HATS AND CAPS.

Fine custom work made from measure. Uniforms of every description. Special attention given to TECHNOLOGY and ENGLISH HIGH SCHOOL UNIFORMS. Workmanship the best. Prices the lowest.

## CONTINENTAL CLOTHING HOUSE,

Corner Washington and Boylston Streets, Boston, Mass.



## WRIGHT & DITSON,

### FINE ATHLETIC SUPPLIES.

WRIGHT & DITSON'S LAWN TENNIS SUPPLIES ARE ACKNOWLEDGED LEADERS AND THE FINEST MANUFACTURED.

### BASEBALL.

Every requisite for the Game; Uniforms a specialty. Golf Supplies and all requisites for Outdoor and Indoor Sport.

Handsome Catalogue Free.

344 Washington Street, Boston.

# CLOTHING CLEANSED

Last season's suit or overcoat, carefully cleansed and pressed, would look nearly as well as new.

Woolen clothing **DYES** to look extremely well.



## All work ironed by hand.

CALL FOR AND DELIVER BUNDLES.

# LEWANDO'S

17 TEMPLE PLACE, - - - Telephone 1393, BOSTON.  
284 BOYLSTON STREET, - - - " 239-2, TREMONT.

**Lewando's Laundry is the Best.**



The Standard for All.

## Columbia Bicycles

Highest Quality of All.



Have you feasted your eyes upon the beauty and grace of the 1895 Columbias? Have you tested and compared them with all others? Only by such testing can you know how fully the Columbia justifies its proud title of the "Standard for the World." Any model or equipment your taste may require, **\$100**



**POPE MFG. CO.**  
HARTFORD, Conn.

Boston, New York,  
Chicago, San Francisco,  
Providence, Buffalo.

An Art Catalogue of these famous wheels and of Hartfords, \$80 \$60, free at Columbia agencies, or mailed for two 2-cent stamps.

## White Bros.

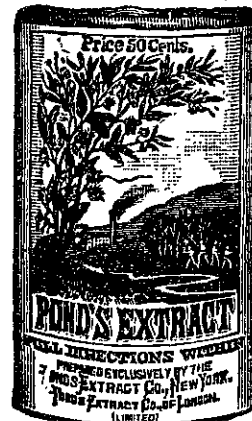
### Merchant Tailors

Have opened a New Store at

**306-A COLUMBUS AVE.**

Suits that were \$30 now \$18; suits that were \$25 now \$15; pants that were \$9 now \$5; pants that were \$7 now \$4; spring overcoats that were \$35 now \$25; spring overcoats that were \$30 now \$18. Foreign and domestic woolens at reduced prices for a short while. All work made strictly to measure in a first-class manner and guaranteed to fit. Our stock is all new and stylish goods.

DEMAND POND'S  
EXTRACT. AVOID  
ALL IMITATIONS.



FAC-SIMILE OF  
BOTTLE WITH  
BUFF WRAPPER.

**FOR**  
ALL PAIN  
Rheumatism  
Feminine  
Complaints  
Lameness  
Soreness  
Wounds  
Bruises  
Catarrh  
Burns  
Piles  
**USE  
POND'S  
EXTRACT**  
It will Cure.

**L. P. HOLLANDER & CO.,**  
**FINE READY-MADE CLOTHING**

Everything shown in our stock is exclusively of our own make, cut from patterns corrected to the latest fashions, and made from the best of materials. We respectfully solicit a comparison of prices and an examination of our styles, also

**FURNISHING GOODS AND HATS.**  
**202 to 212 Boylston Street.**

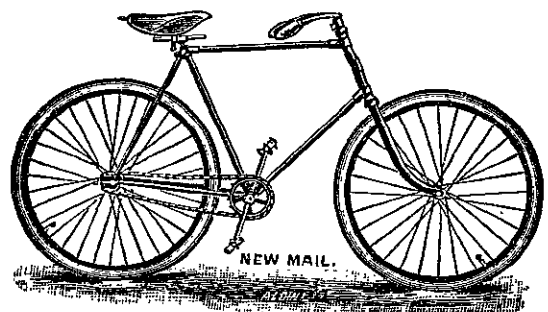
**Frank Wood,**  
**Printer,**  
**352 Washington Street, Boston.**

**CLASS-DAY INVITATIONS,**  
 BLANK BOOKS, FOUNTAIN PENS,  
 CAN BE FOUND AT THE CO-OPERATIVE STORE,  
**H. H. Carter & Co., No. 3 Beacon St., Boston.**

**PAINLESS DENTISTRY**  
 BY THE USE OF DORSENA.  
**DR. YOUNG, Surgeon-Dentist,**  
 415 BOYLSTON STREET.  
 Special attention to TECH boys.

**EXETER LUNCH ROOM.**  
 ———  
**QUICK SERVICE!**  
 ———  
**BEST SANDWICH IN BOSTON.**  
 ———  
**A. ALGAR,**  
**35-A EXETER STREET.**

**NEW MAIL**  
 HIGHEST GRADE LIGHT ROADSTER.  
 Price for 1895, **\$85.**



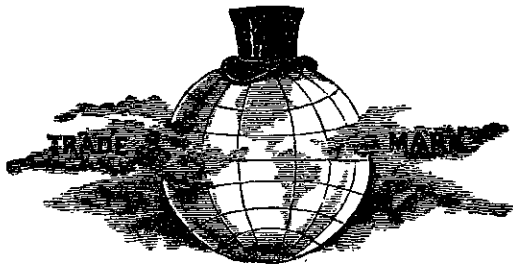
- MEN'S AND LADIES' pattern . . . . \$85
- YOUTH'S NEW MAIL, a high grade Boy's  
Wheel . . . . . \$50
- Also **TEMPLAR**, best medium grade Man's  
Wheel . . . . . \$60
- ATALANTA**, Ladies' Pattern . . . . \$60
- Other makes, Boys' Wheels . . . . \$15 up

A few Shopworn and Secondhand Wheels taken in trade at very low prices. Bargains.  
 Catalogue and Secondhand list.  
**.. WILLIAM READ & SONS ..**  
 107 WASHINGTON STREET, BOSTON.

---

# COLLINS & FAIRBANKS

## ▲ CELEBRATED ▲ HATS! ▲



STYLES SPECIALLY ADAPTED TO YOUNG MEN

Mackintoshes, Umbrellas, Canes and Gloves. Sole Agents for Henry Heath's and A. J. White's London Hats.

381 WASHINGTON STREET, BOSTON.

---

## SPECIAL TO TECH MEN.

---



Riding, hunting, and knickerbocker breeches, leggins and gaiters, spats, and park riding trousers.

Golf suits with caps and capes.

Best genuine Scotch "Harris" hand-spun golf and knickerbocker stockings in all sizes; clan and fancy designs.

All garments cut in strict English style.

---

# MESSENGER & JONES,

YOUNG MEN'S TAILORS.

388 Washington Street, Boston.

---

STUDENT WORK IN ALL ITS BRANCHES A SPECIALTY

M. I. T. Co-operative.

# THE TECH

VOL. XIV.

BOSTON, APRIL 11, 1895.

NO. 26.

## THE TECH

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

CHARLES GILMAN HYDE, '96, *Editor in Chief*.  
EDWARD ARTHUR BALDWIN, '96, *Assistant Ed. in Chief*.  
BENJAMIN HURD, JR., '96.  
SHELDON LEAVITT HOWARD, '97.  
WILLIAM THORNTON PARKER, '97.  
RALPH SPELMAN WHITING, '97.  
THOMAS EDDY TALLMADGE, '98.  
RAYMOND SMITH WILLIS, '98.

SHELDON LEAVITT HOWARD, '97, *Secretary*.

H. P. CODDINGTON, '95, *Business Manager*.

W. R. STRICKLAND, '98, *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.

TECHNOLOGY has again been called upon to lament an almost irreparable loss to her Chemical Department,—a loss which, under existing circumstances, will be only sustained with the utmost difficulty. After continued efforts during the past several months on the part of the corporation of Lehigh University, to induce Dr. Thomas M. Drown to accept the Presidency of that institution, and after repeated refusals on the part of Dr. Drown, he has at length consented, and will assume the duties of his new office in the near future. Thus Lehigh's ultimate success has cast but a deeper gloom over the misfortune of Technology.



In the death of Professor Norton, it was believed that Chemistry at Technology had received a blow from which it would recover but slowly. Nevertheless, through the efforts of a devoted corps of instructors, and through the immediate labors of Dr. Drown and a few

associates, the work of the Department was not allowed to languish, but rather was advanced appreciably.

During the past few weeks the Department has suffered to an extent possibly greater than ever before. The acceptance by Dr. Evans, so well known to those interested in Organic Chemistry, of a position as chief chemist in a large New York corporation; the resignation of Mr. Andrews to take in charge the selection and arrangement of the John Crerar Library in Chicago; and, at last, the near departure of Dr. Drown as Lehigh's President,—mean losses which are truly dispiriting.

Dr. Drown graduated from the University of Pennsylvania in the class of '62, and afterwards spent a considerable period abroad as a student, first at the Mining School of Freiberg, Saxony, and later at the University of Heidelberg. Upon his return to America, he accepted for a year the position of Instructor in Metallurgy in Harvard University. In 1874 he became Professor of Analytical Chemistry at Lafayette College where he remained for seven years; at the same time acting as Secretary and Editor of the Transactions of the American Institute of Mining Engineers. In 1885 he was made Professor of Chemistry at our own college.

As chemist, also, to the Board of Health for the past several years he has undertaken a complete set of chemical analyses of spring and river waters throughout Massachusetts, and has obtained data which have proved singularly useful in constructing various water-supply maps of the State. In connection with the work of the Board, moreover, aided by Mrs. Richards, he has taken in charge the publishing of annual Health Reports, each volume of which has embraced several hundred pages

of important statistics, together with eminently valuable articles on water supply, drainage, and water analysis.

Since 1887, Dr. Drown has added to the world of scientific literature a number of writings, among which may be mentioned Chemical Examinations of Drinking Water (1887), Review of Blair's Chemical Analysis of Iron, (1889), The Filtration of Natural Water (1890), The Effect of Aëration of Natural Waters (1891), and many other papers published in the Technology Quarterly and Proceedings of the Society of Arts, and Transactions of the American Institute of Mining Engineers.

Dr. Drown has been known to Technology men at large as the Head of Courses V. and X.,—to those who have come under his care he has been known as a warm, true friend. His efforts in behalf of our college have been wholly appreciated, and the entire student body will regret his departure. While we rejoice that a distinguished honor has come to one who has served so faithfully, nevertheless, we cannot but view the gap which remains with a feeling of sadness.

SINCE the date of our last issue, we have been enabled to obtain definite information concerning the organization of the Connecticut Valley Alumni Association. At the call of a committee of six graduates, consisting of Messrs. N. P. Ames Carter, '87, Guy Kirkham, '87, James S. Newton, '89, William A. Prentiss, '75, Henry Souther, '87, and Giles Taintor, '87, a dinner was held at the Massasoit House, in Springfield, on Thursday evening, March 28th. In the response of thirty enthusiastic men, a thoroughly enjoyable occasion, in which the purpose of the dinner was by no means forgotten, resulted. President Walker and Dr. Tyler, from Technology, and Mr. Munroe, as President of the National Alumni Association, were present and remarked the importance of the projected undertaking.

President Walker, when called upon to speak, referred to the growth of Technology along a variety of lines, and of the encouraging messages of the advancement and success of the older graduates which each incoming class brings with it. He adverted, also, to the difficulties which were constantly encountered on account of the lack of funds. In tribute to the faithful work of the corps of instructors, he said that it had been their constant aim to carry out most thoroughly the idea of a broad technical education. Mr. Munroe said: "Were this assembly as small as the proverbial acorn, it would still contain all the family characteristics of Technology. It has been said that the only objection to Technology students was that they rooted for Yale: in my estimation Technology students are wont to root for themselves, and have rooted deeply throughout the country. They owe much to President Walker, as the country knows and is thankful for, in that he has by his influence and work placed the Institute in the front ranks of technical educators, not only in this country, where it is easily first, but in Europe as well, where it is second to none. The institution has taken such enormous strides that it has indeed become a model and a pilgrimage for every foreign educator who comes to this country." Mr. Munroe closed with a plea for an organization which should be a constant factor in aiding the present work of the college and its governing body. Dr. Tyler spoke of the necessity for loyal graduates, and enlarged upon the duty which each alumnus owes to his Alma Mater, Technology. Other speakers of the evening were, Mr. Guy Kirkham, '87, Mr. George L. Munn, of Easthampton, and Mr. J. Frank Seavey, '86.

A committee of five, composed of Messrs. Kirkham, Carter, Souther, Newton, as Secretary, and Taintor, as temporary Chairman, was chosen to act as an executive body in completing the plans of the Association.

THE Summer School of Mining and Metallurgy has been one of the main features in the course in Mining Engineering since 1871, when the students in charge of President Runkle made a trip through the mining regions of Missouri, Colorado, and Utah. This year the school will be held in New Jersey and Pennsylvania, as announced in the circular letter from Prof. Hofman published in another column.

In many of the mining and metallurgical centers of the country, Technology men are holding responsible positions, and are always ready to assist the members of the Summer school in every way possible—to give them entrance to the various works and mines, and often to entertain them socially. At the iron and steel works to be visited this summer are the following graduates of Course III.: Mr. H. H. Campbell, '79, Superintendent of the Pennsylvania Steel Company at Steelton, Penn., where the students will investigate blast furnaces, the Bessemer and the open-hearth processes, and rolling mills; Mr. David Baker, '85, Superintendent of the Lackawanna Iron and Steel Company at Lebanon, Penn., who will exhibit to the students iron-ore mining and roasting, and iron blast furnaces; Mr. Joseph E. Thropp, Jr., '94, Assistant to Superintendent of Everett Furnace and Mines at Everett, Penn. Here the students will obtain an idea of iron and coal mines, coke ovens and a blast furnace for making foundry iron.

The advantages of this one month of intimate association with the practical side of mining and metallurgy are of such great value that the mining student should consider it a privilege to be present during his course at one of the Summer Schools. The experience and information in regard to the metallurgy of iron, copper, lead, silver, and zinc, coke making, and iron and coal mining, which the students can thus obtain, will be of the greatest benefit, and will be of especial aid to them in subsequent professional studies.

WE publish this week a complete list of the theses subjects undertaken by Ninety-five men in Courses I. to V. inclusive. In a later issue the remainder of the class will appear with the problems which have been chosen. It has been encouraging to note the general enthusiasm in thesis work displayed by the Senior Class at large, and in almost every case success seems to be assured. The Faculty should be heartily commended for the working interest which has been evinced; many times a very considerable expense has been incurred to advance to the students all apparatus necessary for an extremely varied list of undertakings.

#### Calendar.

- April 13th: Mandaman Club, Parker House, at 8 P. M.  
 April 15th: German Plays at Copley Hall, at 8 P. M.  
 April 16th: Junior Promenade, Pierce Hall.  
 April 17th: Glee, Banjo, and Mandolin Club's concert, Huntington Hall, 8 P. M.  
 April 18th: French Plays at Copley Hall, at 8 P. M.

#### COMMUNICATIONS.

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

TO THE EDITORS OF THE TECH:—

Upon the call of Dr. Sargent, of Harvard, as spokesman of a committee, a meeting was recently held to form a gymnastic association, which is to include for the present various organizations in and about Boston. At this meeting the objects and general plan of such an association were discussed. The further enlargement of the plan and the working out of its details, as well as the framing of a constitution, were left to a committee of five to be appointed by Dr. Sargent.

The object of the promoters of this movement is to arouse a general interest in gymnastics, by arranging for a series of contests between teams of the different organizations to be represented in the proposed association. The two important features of these proposed contests are that each organization will be represented by a comparatively large team, and that the style and finish of the exercises, rather than their difficulty, will form the basis of selection of the successful team. By these provisions it is evident that a

large number of men will be induced to try for the teams, and hence be led to systematically develop their bodies. Thus the total real benefits to be derived from this association will be great,—greater, it seems to me, than those derived from athletic contests as usually managed.

It is important that the interest already aroused at Technology be extended, and that the recently formed temporary organization be replaced by a permanent one before the term closes. We shall then be ready in the Fall to take up the work in earnest, and turn out a winning team at the Winter meetings.

I might add that Dr. Sargent has consented to address a mass meeting of our students on this subject, at some date in the near future.

R. E. BAKENHUS, '96.

TO THE EDITORS OF THE TECH:—

In the *Boston Transcript* of March twenty-first, there appeared an article warmly commending the work of the Mining Department of the Institute of Technology, and especially the work of the Mining and Metallurgical laboratories. The article made very kind reference to me, but gave me credit far beyond my deserts. I now ask the privilege of writing a few lines to give credit to whom credit is due.

Professor Rogers, the wonderful teacher, the leader of modern educators, who laid out the lines for this school, included in his preliminary "Plan and Scope of an Institute of Technology," published about 1861, the outlines of a mining laboratory in terms which apply perfectly to the developed laboratory of to-day. His foresight seems to have been almost prophetic, for the paper was lost sight of during the development.

In 1871 President Runkle organized the first Summer School of Mining in Missouri, Colorado, and Utah. He raised a subscription, and obtained reductions from the various railroads so that the trip could be made with moderate expense to the students. In the meantime he had arranged that Professor Ordway should design assaying and smelting furnaces for the metallurgical laboratory; he placed two students in milling works, one at Virginia City, Nevada, to study the milling of silver ores, and the other at Grass Valley, California, to study the milling of gold ores. He prevailed upon Mr. Scott, of Booth & Co., and Mr. Joshua Hendy to furnish us with a stamp mill and amalgamating and concentrating machinery for gold and silver ores.

When I took charge of the laboratory I found the furnaces built, the machines chosen, and two young men primed to post me on the mounting and running of the machines. All of this came through President Runkle's keen foresight and Professor Ordway's great experience and ready suggestion. With the laboratory thus equipped, the rest has been a matter of steady growth and development of processes, furnaces, and machinery.

Nor can I leave this without saying a few words of thanks to those who have helped me. I had the sympathy of Professors Ordway, Wing, and Rockwell, and later of Dr. Drown, in helping the development of processes and of adapting them to teaching. I have been greatly favored with assistants and associates, who actively or by suggestion have aided in the development of these laboratories which have just been the subject of such high commendation. The list is:—

The late C. O. Parsons, who designed the new works for the Boston and Montana Consolidated Copper and Silver Mining Company.

B. H. Locke, Mining Engineer, Denver, Colorado.

C. E. Stafford, Superintendent Bessemer and Open Hearth Departments of Schoenberger & Co., Pittsburgh.

J. W. Revere, Revere Copper Company, now of the Dominion Coal Company.

E. W. Rollins, of E. H. Rollins & Sons, Bankers.

B. L. Beal, Engineering Department of the Boston Transit Commission.

W. Foster, Mining Engineer, Boston.

F. W. Wood, President Maryland Steel Company.

F. A. Emmerton, Iron and Steel Expert, Cleveland, Ohio.

The late Elmer Faunce, Mining Engineer, Georgetown, Colorado.

F. H. Prentiss, President of the Buckeye Electric Company.

John Duff, Jr., Practicing Physician, Charlestown, Mass.

F. W. Clark, of Jonathan Clark & Sons, Builders, Chicago.

Henry M. Howe, Metallurgist, who has just received the Bessemer Medal.

Geo. F. Knapp, Oglebay, Norton & Co., Cleveland, Ohio.

Newbert M. Randall, Chief Chemist, Maryland Steel Company.

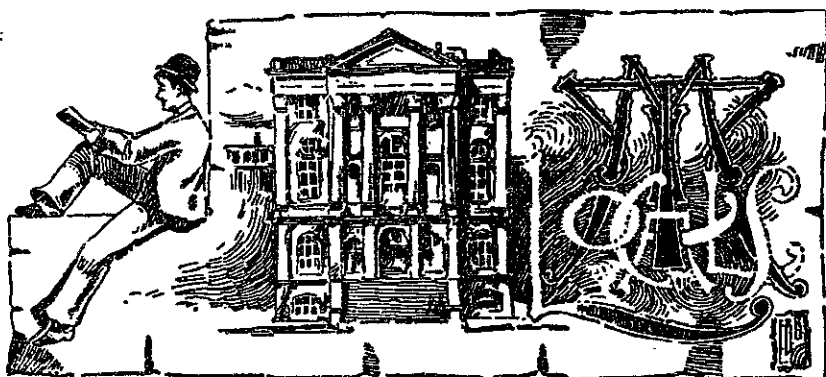
Timothy W. Sprague, Electrical Westinghouse, Church, Kerr & Co., Boston, Mass.

Chas. F. Hastings, late Assistant Supt., Bessemer Department Pennsylvania Steel Company.

H. O. Hofman, Associate Professor of Mining and Metallurgy, M. I. T.

R. W. Lodge, Instructor in Mining and Metallurgy.

ROBERT H. RICHARDS.



The Freshmen are receiving a short course in solid Analytics.

An Alumni Course II. smoke talk took place last Tuesday.

The Chorus of the Deutscher Verein Opera was photographed last week.

The old Woodbury oil machine has been set up in the engineering laboratory.

Mr. G. Waldon Smith took a photograph of the Senior Chemists recently.

One of the signs of spring is the removal of the board covering from Rogers steps.

There was no exercise last Friday in the Freshman freehand drawing classes.

Several of the Ninety-five Chemists will study abroad during the coming Summer.

The Harvard class games will take place on Holmes' field Friday of this week at 4 P. M.

The Deutscher Verein Chorus were measured for costumes last Saturday at Hayden's.

The Glee and Banjo club gave a most successful concert at the Shawmut Avenue church on the 3d.

Harvard's corporation may yet settle the football controversy and approve the action of the athletic committee.

It is probable that Prof. Runkle will not resume his duties at the Institute this year, owing to his ill health.

Mr. Harry Bates, a graduate of Technology, who was seriously injured at the Bradley Fertilizing Works, is now convalescent.

Captain Bigelow has had printed a small atlas containing maps of campaigns, which will be used in conjunction with his lectures.

The Geological Club met in Room 11 Rogers on the 4th. Mr. Graham read a paper on the Physiographic Features of Cape Ann.

On Saturday, April 6, Professor Niles gave his lecture on "Teaching of Physical Geography," in the series of lectures on Teaching now being given.

Apparatus has been sent recently to Chestnut Hill for use in the tests to be conducted there. Weighing barrels, scales, pumps, and necessary piping are among the articles.

The mechanical engineers are now in possession of a full set of drawings of the Chestnut Hill pumping engine, through the courtesy of Mr. Fitzgerald and city engineer Jackson.

On the Bulletin board in Room 42 has been posted a map of Boston and vicinity showing the different Metropolitan districts that are supplied with Parks, Sewers, Water, and Postal service.

Students who wish to practice the manual of arms out of drill hours may do so at the Armory between the hours of 12 M. and 6 P. M. They should obtain rifles and equipments of the janitor.

The programme of the Deutsche Verein's *Lustspiele* has been widely distributed. Judging from the large sale of tickets, there appears no reason to expect anything but marked success in the production.

Last Friday the Freshmen candidates for battery position on the nine were given hard practice behind the Gym. The outfielders now practice in the "clover field" and the infielders in the "oval."

At the end of every drill, hereafter, there will be a dress parade. Thus far the work of the companies has been admirable, and they expect to make a very creditable showing at their Annual Competitive Drill.

A meeting of the Biological Club was held last Friday. Miss Willey read a paper on

Digestive Proleotysis. Mr. Keith spoke on the Morphology and Biology of Yeasts and Miss Fitts on Zoöspores in Dapernaldia.

Mr. A. Coonley, '96, who won second place in the competition for the "Preliminary Training Prize," will receive a cup also. Mr. Coonley won third in the high hurdles for Harvard at the Mott-Haven games last year.

The large truss which excited so much comment was tested last Friday in the Engineering laboratory. It sustained a load of 106,000 pounds, the full load remaining on for an hour. Another similar truss will be tested in a few days.

The concert of the Glee Club at Northampton on Friday, March 29, was witnessed by a very enthusiastic audience, composed almost entirely of college girls. After the concert, the Club serenaded the College in a very pleasing manner.

The present outlook for the drill with the Harvard Cadets is very encouraging. The only necessary arrangement yet to be made is the engagement of the Armory, which Captain Bigelow hopes soon to accomplish. Everything is in readiness to push the scheme as soon as this is assured, and an interesting contest is expected.

Ninety-eight again broke the record on the second intermediate examination in Political History, as only 9 per cent of the class failed. At the preceding examination, it will be remembered that only 6 per cent received failures. Both of these percentages are the lowest which have been held.

Applications for Scholarships should be made during the present week at Room 40, Rogers. All who cannot apply on April 12, 9.30—12.30, are requested to send Prof. Dewey a memorandum of their vacant hours. All applicants are also requested to call upon Secretary Tyler in his afternoon office hours.

The Freshman Baseball players are hard at work, and the announcement of the team

will soon be made. The following are the dates which the manager has thus far made: April 13, Chauncy Hall; 17, Groton High; 20, Philips Exeter; 27, Williston; 30, Brookline High; May 9, Brown Freshmen; 18, '97—'98 game.

The utility of the Emery tester has been increased by the addition of large plate holders. A series of tests on the strength of bolted tension members in bridges will now be carried on by the students. The specimens have been furnished by the Boston bridge works through the courtesy of Mr. H. W. Brown, chief engineer.

Competition for the Artistic Staff of the '97 "Technique" Board will close Monday, April 22, at 4.30 P. M. Those competing must submit one pen and ink, two wash, and three miscellaneous drawings. In one of these three drawings figures must be treated, and in another, lettering. All designs submitted must be suitable for publication in the "Technique."

The pleasant home of Professor and Mrs. Richards was the scene of two delightful receptions tendered to the third and fourth year Chemists and Miners, on Tuesday evening, April second, and Friday evening last. Among the many professors and instructors present was Dr. Drown, who was the recipient of many congratulations upon his election to the Presidency of Lehigh University.

The cast for the German play "Er ist nicht eifersüchtig" is as follows:

Dr. August Hohendorf . . .	Hermann von Holst, '96
Cäcilie, seine gemählin . . .	Kinsley Blodgett, '96
Baumann, ihr onkel . . . .	Edwin C. Kramer, '96
Hermann, Hohendorf's diener .	John E. Lonngrenn, '95

Following the play there will be a "Zwischenspiel" carried out by the Institute quartet, after which will be presented the prelude to Nessler's "Trompeter von Säckingen" with F. W. Smyser, W. R. Dodge, and R. S. Wason in the principal rôles, together with a chorus of forty voices.

On Friday, March 29th, Mr. Lambirth, assisted by Mr. Masters, escorted twenty-eight Technology men to East Boston, where an interesting period was spent in investigating certain mechanical processes. At the works of the Boston Forging Company, which were first visited, the students were shown the method of converting scrap iron into car axles. After spending a pleasant half hour in watching the operation, the contingent visited the Atlantic Works, where they found the boilers and various machinery parts of the yacht "Calypso" in the different stages of construction.

About four hundred students assembled in Huntington Hall last Wednesday to listen to President Walker's address on athletics. It was his first expression to the students on athletics, and his extended remarks were highly applauded. Mr. John Graham then entertained the audience by some sound practical experience, and made an urgent call for all beginners to test their ability. Mr. Hurd, '96, gave a short sketch of the history of the athletic club since its beginning, and Captain Thomas, of the track athletic team, issued a call for candidates to meet on the Irvington Oval, Monday, the 8th. Mr. Rockwell, President of the Athletic Club, presided.

A meeting of the M. I. T. Tennis Association was held April 4th in Room 11 Rogers'. The prospects of a tournament were discussed by the retiring president, Mr. Fuller, and others. The laying-out of the old out-door courts between the buildings would cost fifty dollars and as the arrangements cannot be made this year a tournament is out of the question. Next spring, however, it is hoped that a favorable conclusion may be reached. The following officers were elected:— President, C. S. Huerter, '97; vice-president, H. W. Allen, '97; secretary-treasurer, A. R. Shedd, '98; executive committee, M. F. Delano, '98, W. C. Watrous, '98 and S. F. Wise, '96.

The following men were present in Springfield Thursday evening, March 28th, at the banquet held for the purpose of organizing a Connecticut Valley Alumni Association: O. R. Noble, Granville; P. M. Lynch, Holyoke; S. M. Thacher, Northampton; C. N. Wrightington and J. Frank Seavey, Ludlow; William Stuart Babcock, New Haven, Conn.; Frank L. Worthy, West Springfield; George L. Munn, Easthampton; Edward G. Thomas, Boston; Edward A. Haskell, Giles Taintor, B. Hammet Seabury, Guy Kirkham, E. P. Marsh, Roger Morgan, Philip C. Powers and Paul R. Hawkins, Springfield; Leonard Hills, Amherst; Edwin S. Webster, Boston; William B. Reed, Westfield; E. T. Newton, Holyoke; Henry Souther, Hartford; Frank F. Carpenter, Boston; B. E. Horton, Windsor Locks; C. D. Heywood, J. L. Newton and H. Chase, Holyoke.

Mr C. B. Stebbins, who won the "Preliminary Training Cup," scored twenty-three points. His nearest competitor was Mr. A. Coonley, with eighteen points to his credit. Mr. Stebbins prepared for Technology at the Cambridge Manual Training School and Cambridge High School. He never competed in athletics before this year, and his short career has already ranked him among the best athletes at Technology. The points scored by the winners are as follows:—

Stebbins . . . . .	23	Boeseke . . . . .	5
Coonley . . . . .	18	Fuller . . . . .	5
Nolte . . . . .	17	Ellis . . . . .	5
Hall . . . . .	15	Bodwell . . . . .	5
Carr . . . . .	12	Butcher . . . . .	5
Jones . . . . .	12	Hubbard . . . . .	5
Rumery . . . . .	12	Mayer . . . . .	5
Shaw . . . . .	9	Page . . . . .	4
Farquhar . . . . .	8	Worcester . . . . .	3½
Bakenhus . . . . .	8	Field, D. D . . . . .	3
Sumner . . . . .	8	House . . . . .	3
Russ . . . . .	8	Powers . . . . .	1
Tillinghast . . . . .	7	Washburn . . . . .	1
Field, F. C. . . . .	6	Sargeant . . . . .	1½

The above was copied from the records of the Track Athletic Captain.

Professor Hofman has recently sent the following letter to the various members of Course III.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY.

April 2, 1895.

DEAR SIR: Professor Richards being prevented from taking charge of the Summer School of the Mining Department, the duty falls upon the undersigned. The school is held alternately at mining and metallurgical centers. This year mainly metallurgical works will be visited and incidentally some mines. The school will be held in New Jersey and Pennsylvania where the metallurgy of copper, lead, silver, zinc, iron and steel and the manufacture of sulphuric acid will be studied and a coal and an iron mine visited. The party will start not later than May 28 by the Fall River line for New York city, will visit Bergenport, Jersey City and Newark, N. J., and Lebanon, Steelton, Everett and Johnstown, Pa. The school will last from twenty-one to twenty-four days, closing at Johnstown. The expense including return to Boston is estimated to be:—

Railroad Fares . . . . .	\$35.00
Board and Lodging, 24 days at \$1.50 . . . . .	36.00
Washing and Sundries . . . . .	9.00
	<hr/>
	\$80.00

All members of the party are expected to remain until the close of the Summer School. You are cordially invited to attend. Please reply before April 27th.

H. O. HOFMAN.

### The Co-operative Society.

THE Annual Meeting of the Co-operative Society was held Saturday, April 6th, in Room 20, Rogers. Reports were made by President E. H. Huxley, Secretary T. M. Vinton, and Treasurer, A. D. Maclachlan. The latter stated that in the past year the Society has provided one entire scholarship (\$200), and one half scholarship (\$125).

The Society accepted two proposed amendments to the constitution, and decided to undertake the management of all supply rooms throughout the Institute.

After the meeting of the Society a meeting of the Board of Directors was called for the election of officers for the ensuing year. Mr. H. G. Fiske, '96, was elected President; Mr. T. E. Tallmadge, '98, Vice President; Mr. R. S. Willis, '98, Secretary; and Mr. A. D. Maclachlan, '96, Treasurer.

### The Architects' Dinner.

The most successful and enjoyable Dinner which the Architectural Society has given this year was that of last Tuesday evening, in honor of the men who took part in the recent Beaux Arts Society Competition at New York. Professor Despradelle and Professor Homer were present and joined with some thirty Architects in their round of jolly songs and stories. After the appetites of the gathering had been appeased, Professor Despradelle congratulated the honor men upon their success. J. H. Parker was artist of the evening and presided at the piano in his usual interesting manner. Mr. Chase rendered Raymond Moore's celebrated song most pleasantly, after which Mr. Thomas gave the midway dance. Professor Homer was reminded of an old plantation song which he sang with the enthusiasm of a student, and following this "Way Down upon the Swanee River," Mr. Bliss sang several delightful baritone solos accompanied by Mr. Loring. A round of stories was listened to, and a successful supper was declared at an end.

### Theses.

Ninety-five men have at length wholly chosen thesis subjects, upon which they will be occupied until the middle of May. We publish this week a complete list of the problems undertaken by Courses I., II., III., IV., and V.

#### COURSE I.

- AMES, AZEL, Jr.—A Design for a Turn-table for a 125-ton Engine.
- BARROWS, H. K. (with B. C. Donham).—A Design for a System of Water Supply for the Town of Weston.
- BELKNAP, F. W.—A Discussion of the Adaptability of Concrete as a substitute for Masonry in Structures exposed to the Weather.
- CHURCHILL, P. M.—Tests of Paving Brick.
- CLAPP, S. K.—A Design for a High Viaduct.
- DONHAM, B. C. (with H. K. Barrows).—A Design for a System of Water Supply for the Town of Weston.
- ELLIS, W. H.—A Design for a Pitched Roof to Cover a Large Audience Hall.

- FULLER, A. D.—An Investigation of the Value of Tidal Reservoirs for Preserving the Channel in Harbors.
- GREGORY, J. H.—A Design for an Iron Railroad Bridge.
- HOWE, G. E. (with G. F. C. Merriss).—A Comparison of the Yields from Various Water Sheds with that from the Sudbury River Basin.
- LOGAN, A. J. G. (with J. T. R. McManus).—A Project for Abolishing a Grade Crossing on the Fitchburg Railroad near Waltham.
- MATTHES, F. E. (with G. H. Matthes) —An Investigation of the Thermophone as a means of Determining the Temperature of the Tape in Base-line Measurements.
- MCMANUS, J. T. R. (with A. J. G. Logan).—A Project for Abolishing a Grade Crossing on the Fitchburg Railroad near Waltham.
- MERRISS, G. F. C. (with G. E. Howe).—A Comparison of the Yields from Various Watersheds with that from the Sudbury River Basin.
- MOREY, R. (with F. C. Schmitz).—Experiments on the Pressure of Wind on Surfaces Inclined at Different Angles.
- PARMELEE, C. L.—A discussion of Two Proposed Formulæ for the Flow of Water in Iron Pipes.
- ROURKE, L. K.—A Design for a Stone Arch.
- SCHMITZ, F. C. (with R. Morey).—Experiments on the Pressure of Wind on Surfaces Inclined at Different Angles.
- SIMMONS, A. L.—A Discussion of the Different Forms of Railroad Switches.
- SWIFT, W. E. (with C. G. Williams).—Experiments on the Loss of Head in the Flow of Water through Diaphragms.
- THORNDIKE, S. H., A.B.—The Sources of Error in Plane Table Work.
- TUCKER, E. R.—A Discussion of some points in the construction of High Buildings of Steel.
- WHEELER, R. N. (with F. C. Green, XI.).—Design of a Sewerage System for the Town of Concord, Massachusetts.
- WIGGIN, T. H.—A Design of a large Staircase with Landing.
- WILLIAMS, C. G. (with W. E. Swift).—Experiments on the Loss of Head in the Flow of Water through Diaphragms.
- L. A. CUTLER.—Design of a stone crusher.
- A. L. DEJONGE.—Test of a new form of surface condenser (with T. M. Lothrop).
- F. E. FAXON.—Tests of a rock drill (with H. M. Haven),
- J. H. GARDINER.—Test of the strength and elasticity of malleable iron (with J. D. Moore).
- F. A. HANNAH.—Tests of indicator springs (with F. B. Masters).
- H. M. HAVEN.—Tests of a rock drill (with F. E. Faxon).
- G. R. HAWARTH.—Tests on an eight-wheel locomotive on the N. Y., N. H. & H. R. R. (with E. H. Huxley).
- E. L. HURD.—Tests of a plant of a chocolate mill.
- E. H. HUXLEY.—Tests of an eight-wheel locomotive on the N. Y., N. H. & H. R. R. (with G. R. Hawarth).
- H. KOTZSCHMAR, JR.—Tests of a 16" x 10½" x 12" Duplex pump, an investigation of the velocity of the piston rod at different parts of the stroke (with J. H. Bourne).
- A. V. LINCOLN.—
- T. M. LOTHROP.—Tests of a new form of surface condenser (with A. L. DeJonge).
- W. C. MARMON.—Test of the Flour plant of the Toledo Milling Company (with E. H. Boeseke).
- F. B. MASTERS.—Tests of indicator springs (with F. A. Hannah).
- J. D. MOORE.—Tests of the strength and elasticity of malleable iron (with J. H. Gardiner).
- F. A. PARK.—Maximum pitch for riveted joints for steam boilers.
- W. J. RICKEY.—Determination of co-efficients for narrow weirs (with W. F. Stevens).
- W. F. STEVENS.—Determination of co-efficients for narrow weirs (with W. J. Rickey).
- J. W. THOMAS.—Comparative tests of a eleven hundred horse power steam plant using coke and soft coal (with C. F. Tillinghast).
- C. F. TILLINGHAST.—Comparative tests of a eleven hundred horse power steam plant using coke and soft coal (with J. W. Thomas).
- H. M. TUCKER.—Tests of the effect of jacketing single Engines (with J. J. C. Wolfe).
- J. J. C. WOLFE.—Tests of the effect of jacketing single engines (with H. M. Tucker).
- L. K. YODER.—Design of a riveting machine.
- H. YOERG.—Tests of the effect of repeated stresses on riveted joints.

## COURSE II.

- L. W. BALLOU.—Tests of a fifteen hundred horse power double tandem compound engine.
- E. A. BOESEKE.—Test of the Flour Mill Plant of the Toledo Milling Company (with W. E. Marmon).
- J. H. BOURNE.—Tests of a 16" x 10½" x 12 Duplex pump, including an investigation of the velocity of the piston rods at different parts of the stroke (with H. Kotzschmar, Jr.).
- A. L. CANFIELD.—Test of a refrigerating plant (with R. K. Shepard).
- H. W. CRANE.—Investigation of the effects of bends and lengths of piping connections leading to the indicator.

## COURSE III.

- A. S. COBURN.—Dressing and smelting of nickel ore from Dracutt, Mass.
- W. N. CRAFTS.—Coking by retort of bituminous coals.
- F. W. DRAPER.—Coking by retort of bituminous coals.
- B. HODGE.—Dressing of copper ore from Eustis, Can.
- H. J. SHEAFE.—Milling of gold ore from Waverley, N. S.
- B. STOUGHTON.—Smelting of copper ore from Davis, Mass.
- A. E. WHEELER.—Refining of crude copper and separation of precious metals by electrolysis.

## COURSE IV.

- BARTHOLOMEW, MISS E.—College Building for Wellesley College.  
 BLISS, W. D.—Country Church.  
 BOURNE, F. A.—Small Public Library for Bangor.  
 CHAMBERLAIN, H. W.—Governor's Reception House for Boston.  
 W. S. CHASE.—Museum for Sculpture.  
 CLAFLIN, W. B.—A Bank Building.  
 DAVIS, W. E.—A Building for the Study of History.  
 R. D. FARQUHAR.—A College Lecture and Recitation Hall.  
 GAY, C. M., JR.—Small Art Museum, Amphitheater and Art Library for a College.  
 GILBERT, P. F.—Academy for Invalids.  
 H. C. HEWITT.—Villa by the Sea.  
 LORING, E. J.—A Music Stall for the City of Boston.  
 PARKER, W. D.—A small Library.  
 SCHOENTGEN, E. P.—Art Museum and Amphitheater.  
 ZAPP, A. E.—Masonic Hall and Opera House for a City of 25,000 inhabitants.

## COURSE V.

- BADGER, E. S.—Preparation of Substituted Benzyl Sulphonic Acids.  
 BIGELOW, S. L.—Preparation of the Ethers of Trimethylene Bromide.  
 BLODGETT, P. H.—Preparation of Chlorxylenes by the Aluminium Chloride Reaction.  
 DEFREN, G.—Preparations of the Derivatives of Ethyltoluene.  
 DORRANCE, J. T.—Electrolytic Reduction of Aromatic Nitro-Compounds.  
 DUNBAR, A.—Action of Dehydrating Agents on Trimethylene Glycol.  
 ELLIS, R. M.—Preparation of Diphenylbiphenyl.  
 HALL, W. T.—Rate of the Inversion of Salicine under the Influence of Acids.  
 HORMEL, H.—Condensation products of Aniline and Trimethylene Glycol.  
 LE BOSQUET, M.—Oxidation of Trimethylene Glycol.  
 MESERVE, C. A.—Derivatives of Methane-disulphonic Acid.  
 SADTLER, S. S.—Preparation of Iodoparaxylene.  
 WALWORTH, J. E.—Preparation of Iodoethylbenzene.  
 WASON, R. S.—Chlorine and Bromine Derivatives of Triphenylmethane.  
 WESTON, D. B.—Temperature of Hydrolytic Decomposition of Some Sulphonic Acids.  
 WATKINS, W. H.—Preparation of Trimethylene Thio-glycol.

## Palmistry.

I read her fortune carefully,  
 But at her palm I did not look;  
 For easier and surer far  
 I found the tax assessor's book.

J. D. G.



Rockwell, Swift, Powers, Wise, Thomas and others have begun their out-door training, and in a week more the oval on Irvington Street will be ready for the general use of all Technology athletes. Every man should come out promptly this spring, and train hard to fill up the gaps in our last year's victorious team.

There were three events Friday afternoon, the fifth. The first was the hurdles, Rumery, '98, won, with Sumner, '97, second, and Stebbins, '97, third; time,  $5\frac{1}{5}$  sec. The Potato race was won by Wise, '96, with Huse, '98, second; time, 53 sec. The pole vault was the best event of the meet. J. Nolte, '98 (2 in.), won with a vault of 9 ft. 4 in.; A. V. Shaw, second, and Rumery, '98, third.

The meet Tuesday, April 2d, was not as successful as usual. The attendance and interest was fair, but the records were rather poor. Quite a number of men entered for the first time, and the men who have been winning week after week gave way to a new set. The first event was the 35-yard dash, and in this W. D. Hubbard showed excellent form.

## Summary:—

## 35-YARD DASH.

1. W. D. Hubbard, '98 (scratch).
2. R. D. Farquhar, '95 (—3).
3. E. F. Russ, '98 (scratch).

Time,  $4\frac{3}{8}$  seconds.

## PUTTING SHOT.

1. A. Coonley, '96 (3 ft. 8 in.), 29 ft. 9 in.
2. H. E. Worcester, '97 (3 ft.), 30 ft.
3. W. M. Hall, '98 (2 ft. 9 in.), 30 feet.

## RUNNING HIGH JUMP.

1. A. Coonley, '96 (8 in.), 5 ft.
2. W. M. Hall, '98 (scratch), 5 ft.  $5\frac{1}{4}$  in.
3. Gardner Abbott, '95, and E. F. Russ, '98, tie.

The Friday games of March 29th showed a little falling off, both in competitors and spectators, over the Tuesday games. The work of Stebbins, '97, in the hurdles, was undoubtedly the feature of the day. His running form might be improved, but he certainly took the hurdles like a veteran. The potato race was also won by Stebbins who, in spite of his start from the boiler room, easily passed his opponents. Summary:—

#### 35-YARD HURDLE.

First trial heat won by Stebbins; Bakenhus, second.

Second trial heat won by Sumner; Hall, second.

Third trial heat won by Powers; Rumery, second.

Semi-final heat won by Rumery; Hall, second.

Final heat won by Stebbins; Sumner, second; Powers, third; time, 5 seconds.

#### POTATO RACE.

First trial heat won by Wise; Farquhar, second; time,  $51\frac{1}{2}$  seconds.

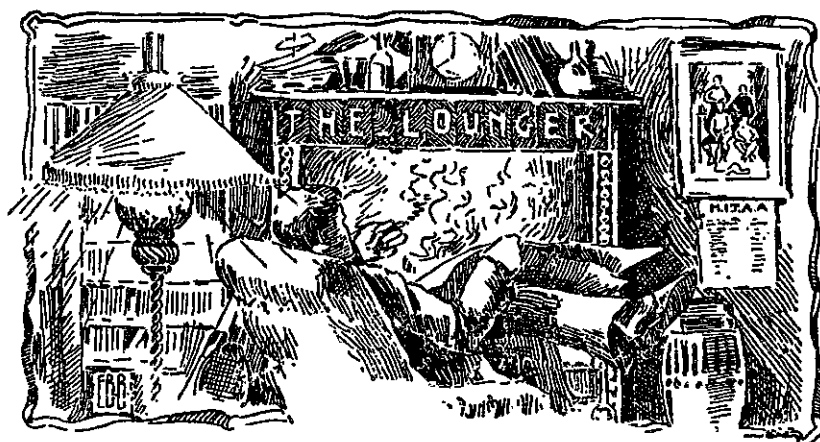
Second trial heat won by Stebbins; Mayer, second; time,  $49\frac{1}{2}$  seconds.

Final heat won by Stebbins; Mayer, second; Wise, third; time,  $52\frac{1}{2}$  seconds.

#### POLE VAULT.

Nolte, first, 9 ft. 6 inches; Shaw, second, 9 ft., 2 inches; Page, third, 8 ft., 5 inches.

The Friday games of April 5th were the last of the indoor series of semi-weekly meets. There were very few entries and the attendance was poor. The weather has now become so mild that most of the runners are doing their regular outdoor work, and will be in good condition to start the training on Irvington Oval. Although the records of the last games were poor, it is easy to see that the semi-weekly meets have accomplished a great deal, and have produced a marked development in some events that are usually neglected. The practice in starting has been beneficial, and the pole vaulters are doing much better than last year. The Irvington Oval training begins this week, and means hard work to the men who are trying for the Worcester Team. Nothing can be more inspiring to our athletes than a truly enthusiastic crowd of spectators thoroughly interested in the training,—and every man in Technology should feel it a bounden duty to be often present at the Oval.



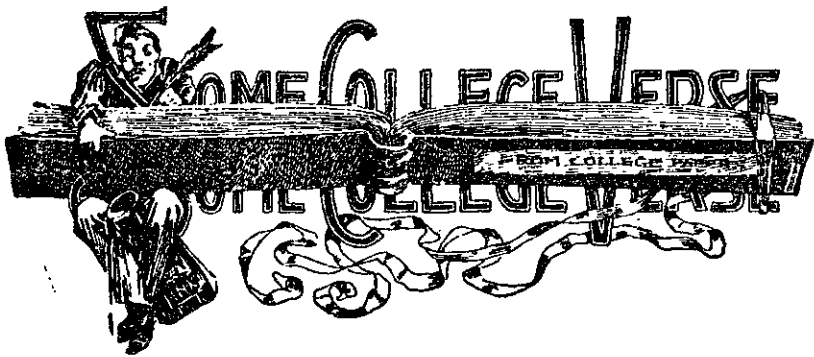
It is with high anticipation that the Lounger views the approach of the week of wanton festivity when the assurance of a brief respite from the wearying cycle of grinding may be our fleeting possession. The French Society has decided to outdo itself, and the German Society has expressed its intention of outdoing the Frenchmen, so it seems reasonably patent that something startling may be looked for. Their respective vassals, long stationed in Rogers corridor to sell the magic pasteboards, have, it is true, been with difficulty restrained from impromptu cane rushes, and other festive goings on, but this is merely preliminary, and doubtless does not betoken more than a hearty zeal for the welfare of their respective productions. However, the customary *douceur* has been promptly forthcoming from each, and the Lounger promises impartiality. With the Deutscher Verein to recall vanishing memories of Old Vienna and L'Avenir to dazzle our eyes with the bewildering mazes of the dance, to say nothing of the Prom. and the ambitious exhibits of the Photographic and Architectural Societies, Junior Week this year is surely to be memorable.

"Tis in sooth a masterpiece in the "poster" line which has recently directed the wandering attentions of the Technology mind to the histrionic efforts of L'Avenir. Her special artist depicted a truly lifelike semblance of Mephistopheles, well calculated to attract the Lounger's circumambient eye, and for a long time he stood gazing with wrapt attention on the vermilion outlines. He was vainly pondering whether they most resembled Edouard de Reszke in his famous rôle, or Monsieur the Promoter of the Ballet, when a shy voice at his elbow assured him in bashful confession that the model for the Mephistophelian signboard was none other than the one with the integral initials. Now that the Lounger's doubts have been set at rest by this frank, unsought-for confession, which came

with such charming *naivete*, he need place no great reliance on the portraits of this gentleman which are possibly to adorn the coming portfolio.

It has recently become evident that certain of the Lounger's friends in Ninety-eight have lost sight of the fact that they are still Freshmen. By some peculiar mental aberration they have convinced themselves that they are nothing less than learned P. G's, with a string of degrees after their names; but even did they occupy this exalted position, the Lounger is sure that the years spent in its attainment would suffice to temper the vivid green of their cal- lowness which is now so painfully apparent.

There are some prerogatives which are properly left for the enjoyment of men older and more experienced in the ways of college life than Freshmen possibly can be, and to the latter the Lounger would suggest that the usurpation of privileges not their own is highly distasteful to upper classmen. Perhaps the Lounger has more especial reference to the bearing of some who aspire to position on THE TECH Board. In this connection, however, let the Lounger disclaim any intention of discouraging men from trying to make the Board, for, on the contrary, he always heartily welcomes new acquisitions to the editorial staff, and upon them bestows his blessing with all possible alacrity. Nevertheless it may do no harm to remind some of these youthful *litterateurs* that while they still occupy the position of neophytes, the exercise of a little more circumspect and modest demeanor would do much to create a favorable impression in the minds of those with whom their fate rests.



Lent is nearly over now,  
Penance days will soon be past,  
Then we'll stop our fasting,  
And be a little fast. — *Yale Record*.

That history repeats itself,  
A proverb claims, I've heard,  
But when in class I'm called upon  
It never says a word.  
— *Williams Weekly*.

## A GASTRONOMIC IDYLL.

"Have a  
Bit of  
Our spring  
Chicken?"  
Asked the  
Waiter  
Bowing  
Low,  
"Yes, and,  
Waiter,  
Don't for-  
Get now,  
Make it  
*This* spring,  
Don't you  
Know."

— *University Herald*.

## LOVE.

The first sip is sweet,  
The last one is bitter.  
If you are discreet,  
Tho' the first sip is sweet,  
The last you will cheat.  
What old maxim is fitter?  
The first sip is sweet,  
The last one is bitter.

— *Brunonian*.

## NOT WHAT IT SEEMS.

Like a pure lily midst the meadow sweet  
She stands, imperious, fair, and tall;  
And on his bended knee, low at her feet,  
In suppliant attitude behold him fall.  
And while the hot blood mantles all his brow,  
And brook and wind of Venus make blithe rhyme,  
Aglow, but with no am'rous flame I trow,  
He ties her shoe-lace for the thirteenth time.

— *University School Record*.

## A PASSING FACE.

A passing face, exceeding fair,  
Goes swiftly by, in crowded place;  
A smiling glance from eyes a pair:  
A passing face.

I look, and wish some little space  
In her regard, yet do not dare  
To speak, lest I incur disgrace.

Mine's not experience so rare,  
It happens thus in many a case;  
We every one have met somewhere  
A passing face.

— *Southern Collegian*.

# NOYES BROTHERS



## Shirtings for Season 1895.

Madras, Cheviot, and Oxford Cloths, for the season of 1895, are now ready, and orders will be taken for Ladies' Shirts, Waists, Blouses, Jackets, Skirts, and Entire Suits, or sold by the yard, in dress patterns, if desired. Also for Children's Wear. For Men's and Youth's business, Negligee and Outing Shirts.

*We invite an early inspection of the choicest goods we have ever shown.*

**Dress and Business Shirts from \$1.50, \$2.00, \$2.50 and up.**  
**New Cravats 50c., 75c., \$1.00 and up.**  
**White Duck Trousers \$1.75 to \$5.00 per pair.**

Tennis and Yachting Suits, Blazers, Shirts, Trousers, Caps, and Belts, in stock or made to order from Flannels, Oxfords, Cheviots, Madras and Pure Silk Shirtings.

**NOYES BROTHERS, Washington and Summer Sts., Boston, U. S. A.**

**L. E. FLETCHER & CO.,**  
**HATTERS AND MEN'S OUTFITTERS.**

### HATS

In **LEADING** and **CORRECT STYLES** for **YOUNG MEN.**

**Novelties in Neckwear,**  
**Gloves, Hosiery, and Underwear,**  
**Canes, Umbrellas, Etc.**

158 BOYLSTON STREET,

Opp. COMMON.

**BOSTON.**

**PROFESSOR C. L. ADAMS'**  
**PORTFOLIO OF**  
**Letter · Drawing · Plates**

can be obtained at our branch store,

**Grundmann Studios, adjoining Architectural Building,**

where we shall keep at all times a full line of

**DRAFTING IMPLEMENTS,**  
**Drawing and Blue Process Papers,**  
**SCALES, TRIANGLES,**  
**CURVES, T SQUARES, Etc.**

**Wadsworth, Howland & Co.,**  
**INCORPORATED**

82 and 84 Washington St., Boston.

267 State Street, Chicago.

**SPECIAL RATES TO STUDENTS.**

**NOTMAN  
PHOTOGRAPHIC COMPANY,**

**480 Boylston Street,  
and 3 Park Street.**



**PHOTOGRAPHERS TO M. I. T., '94.**



**Special Rates to Students.**

**LEADING OUTFITTERS** 

OF

**High Grade Mackintoshes**

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

**METROPOLITAN RUBBER CO.**

CLEVE & KRIM

49 Summer Street, Boston.

**TECH STUDENTS**

are cordially invited to inspect our work, which is the most artistic in the city.

Our place is a model of neatness, and we employ none but thoroughly competent men.

**YOUR PATRONAGE IS RESPECTFULLY SOLICITED.**

**Copley Square Hotel Hair-Dressing Parlor.**

Corner of Huntington Avenue and  
Exeter Street.

**PARKER HOUSE** 

BOSTON. EUROPEAN PLAN.

CATERING FOR CLUBS AND DINNER PARTIES A SPECIALTY.

CUISINE UNEQUALED.

J. R. WHIPPLE & CO.

**ST. BOTOLPH HALL.**

**NEW TECH. DORMITORY.**

Favorably situated at the corner of **St. Botolph** and **Harcourt Sts.**, near all the Departments of the Massachusetts Institute of Technology.

**Furnished Suites** To let, including  
heat and baths.

**Restaurant** in Building.

M. DWYER, Manager.

For terms apply on the premises.

GODFREY MORSE, Proprietor.

**Tech Boys.**

Telephone, 239-4 Tremont

“Do You Know That”

**SEVERY & YOUNG, Florists and Decorators,**

288 Boylston Street, opposite Public Garden,

Supply choicest cut flowers at the most reasonable prices in town? They make a specialty of decorations for balls, parties and weddings. Lunch served from 11.30 A. M. till 3 P. M. **All home cooking.** The bill of fare is varied daily and the prices are moderate.

**GENTS' FURNISHING DEPT.**

**SWEATERS. SWEATERS.**

Pure Worsted. Finished Seams. All Colors. All Prices.

**ENGRAVING DEPT.**

Engraved Plate and 50 Visiting Cards, } 98 c.

... WORK GUARANTEED ...

**B. F. LARRABEE & CO.**

Washington Street, Temple Place, West Street, Boston.

**MEN'S DRESS SUITS.**

Although it is well known among our Technology trade that we have always made a specialty of this branch of our business, we take pleasure in reminding their friends of the fact that we have the usual line of staples and novelties, and that we do not ask extravagant prices. We make only High-class Work, as our increasing patronage among Tech men will testify.

**C. J. NICKERSON,**  
Tailor and Importer,

**120 TREMONT STREET,**

Cor. Hamilton Place, Phillips Building, Room 228.

The regular co-operative discount.

FORMERLY CUTTER FOR F. D. SOMERS.

**ARCHITECTURAL PHOTOGRAPHS,**

The Largest Collection in America.

All the best Public Buildings, Churches, Private Houses, and Business Blocks in Boston and New York.

Richardson's Works of Importance from all over New England. Also a complete line of

**Art Photographs for Room Decoration.**

STUDENTS WELCOME TO EXAMINE, WHETHER DESIRING TO PURCHASE OR NOT.

**SOULE PHOTOGRAPH CO., Publishers,**

338 Washington Street, Boston.

**AT THE THEATRES.—Week beginning April 15th, '95.**

**BOSTON MUSEUM.**—For the first time in Boston, Mrs. Langtry will present her latest success, "Gossip," which has created such a sensation in New York. Incidental to the play, Mrs. Langtry will wear some gorgeous gowns that are exact copies of the coming spring styles from Worth's.

**BOSTON.**—The return of Eugene Tompkins' Spectacular Ballet Revelation, "The Black Crook," produced under the direction of Lawrence McCarty. Everything new. A world of specialties, including



Europe's sensation, "The Athos Family" and "Mardo the Marvel." New ballets, songs, dances and specialties.

**PARK.**—Hoyt's "A Temperance Town." This popular play will be given by an admirable cast, including some of Boston's greatest favorites. Those few who missed the chance to witness "A Temperance Town" last year had better take advantage of the advance sale of seats, which is large. "A play to drive away the blues."

**HOLLIS STREET.**—One week only. "Primrose and West's Monster, Magnificent and Mammoth Minstrels." This attraction is a novel change from the usual line at the Hollis. The company comprises the most magnificent minstrel organization ever seen in the United States or elsewhere. Over seventy people in the cast, and the entertainment is spoken of in the highest terms.

**CASTLE SQUARE.**—"Rob Roy." The fourth week of the greatest comic opera success of the season. The strongest organization of comic opera ever seen in Boston. It is De Koven and Smith's latest and greatest work. Presented with full strength of the Whitney Opera Company.

**COES & STODDER,**

14 SCHOOL STREET.

The Popular Store  
for Young Men's  
Shoes.



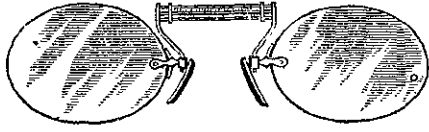
A Discount of 10 per cent given to TECH Students.



Specialty: Dress Suits, Silk Lined, \$45.

**F. C. CUMMINGS, Tailor,**

No. 299 Washington Street, Boston, Mass



OF ALL BAR SPRINGS THE FOUR-BAR IS THE BEST.

**C. E. DAVIS,**  
**Manufacturing and Prescription Optician,**  
 No. 2 Park Square, Rooms 1 and 2, Boston.

MAKER OF THE FINEST CLASS OF PRESCRIPTION OPTICAL WORK AT A SAVING OF 75 PER CENT ON OLD PRICES.

SAMPLE PRICES: Compound Cylinders in Steel (best quality), \$2.50. Artificial Human Eyes, to Patient, \$4.00. Fifteen per cent special discount to students.

IMPORTER OF ARTIFICIAL EYES.

SELECTION PACKAGES FURNISHED.

# JAMES DELAY, FLORIST,

**Decorator for Balls, Parties,  
 Receptions, Teas, and Concerts,**  
 220 BOYLSTON STREET, BOSTON.

*Branch Store,*

*Providence Station, Park Square.*

We have a

Large and Assorted Line of  
 European and American Fabrics.

We ask an opportunity to show the same. We guarantee satisfaction both in fit and workmanship, and extend a cordial invitation to Tech Students to come and examine our goods and prices.

## Hibbard-Mason Co.,

**FINE . . . .  
 TAILORING,**

No. 515 Washington Street, Boston, Mass.

GEO. A. HIBBARD,  
 Vice President.

Telephone 579.

**HENRY S. LOMBARD,** Manufacturer of

Established 1855.

### Yachting Outfits of Every Description.

**SPECIALTIES:**

Duck Trousers, Outing Clothing, Sweaters.

46 to 52 Clinton Street, cor. Commercial Street,  
 Boston, Mass.

**"The Yellow Fellow," STEARNS.**

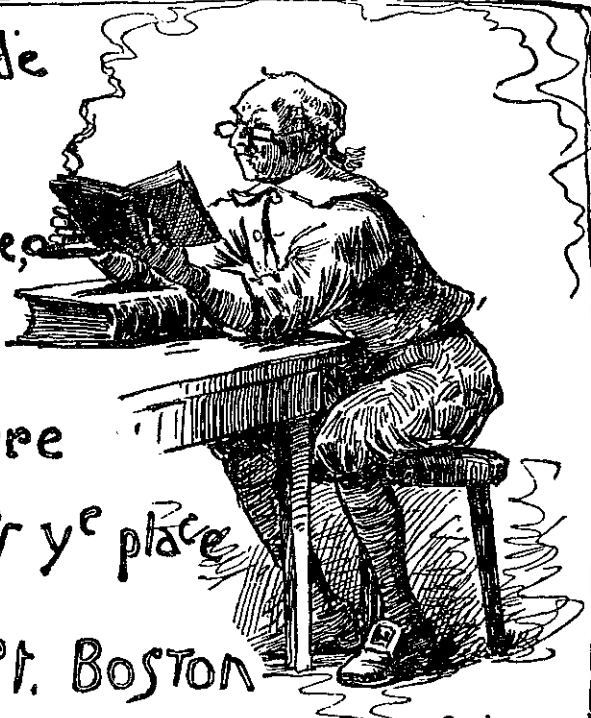
**"PIERCE."**

We carry a full line of BICYCLES at all prices. Call for our Catalogue.

**"CZAR."**

**H. B. SHATTUCK & SON,** 249 Columbus Ave., Boston.

If lamps you neede  
 To see to reade  
 When sol has hid his face,  
 Go in ye doore  
 Of Hollings' store  
 You'll find em - that's ye place  
 525 Washington St. Boston



Leading Dealers in . . . . .

### PHOTOGRAPHIC MATERIALS

Of every description. Discount to students.

... B. FRENCH & COMPANY ...

319 Washington Street, opp. Milk,

BOSTON, MASS



OF HAMILTON PLACE BOSTON.

### MEMBERS OF COURSE VI.

#### Electrical Engineering.

Keep posted on current electrical affairs by subscribing for *The Electrical Engineer*, the oldest and best of all electrical periodicals.

#### THE ELECTRICAL ENGINEER,

No. 203 Broadway, New York.

GENTLEMEN — YOU CAN BUY

The Celebrated  
**Emerson Shoe**  
 HAND SEWED FOR \$4.00

We have a  
 Chiropodist at each  
 store to treat our  
 customers' Corns,  
 Bunions, and In-  
 growing Nails,  
 FREE OF  
 CHARGE.

Call and examine  
 our new Bicycle  
 Shoe; it is the best  
 thing to  
 PUSH IT  
 ALONG  
 WITH.

BOSTON STORES:

Washington St., cor. Water.

635 Washington St., opposite Essex.

## F. L. DUNNE, TAILOR AND IMPORTER.

A SPECIALTY MADE OF  
**Suits for Riding, Shooting, and Golf.**  
**Breeches for Riding, Hunting,**  
**Racing, and Polo.**

TRANSCRIPT BUILDING,  
 328 Washington Street, corner Milk, Boston.

## COWLES ART SCHOOL,

145 Dartmouth Street.

Special attention given to EVENING CLASSES FOR TECH  
 STUDENTS in life and cast drawing.

Address

**F. M. COWLES, Agent.**

Tuition, \$4.00 per Month.

Three Evenings per Week.

## 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.



### STUDENTS WILL FIND

BOSTON LINEN, BOSTON BOND and BUNKER HILL  
 The nicest Stationery in existence.

They can obtain same in all the correct sizes, daintiest tints and  
 atest finishes. We have over 250 varieties from which they can select.

**Samuel Ward Company,**  
 49 and 51 Franklin Street. BOSTON.

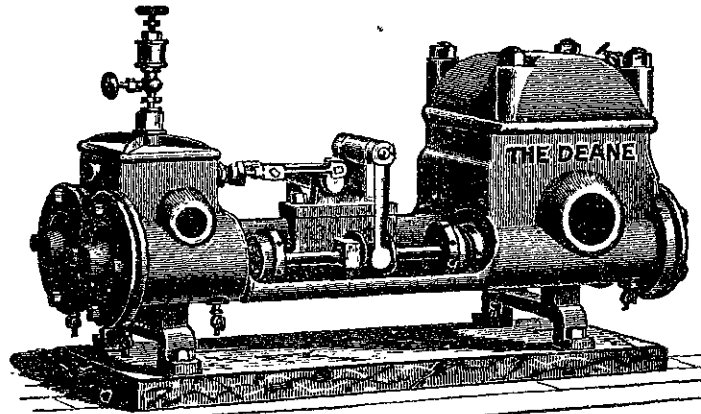
TEXT-BOOKS, DRAWING MATERIALS,  
 CORRESPONDENCE PAPERS,  
 STUDENTS' SUPPLIES.

**C. E. RIDLER,**  
 BOYLSTON AND BERKELEY STREETS, BOSTON.

The M. I. T. Supply Store,

## DEARNE STEAM PUMP CO.

HOLYOKE, MASS.



## STEAM PUMPS

Boston Office: 54 Oliver 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.

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.**

## KEEP'S SHIRTS.

Our Celebrated "K" Quality Stock Shirts, open back or open front, or both, and with different sleeve lengths

85 cents each Unlaundered, \$1 each Laundered.

Keep's \$1 Street Gloves are Famous.

**KEEP MANFG. CO., 114 Tremont Street, Boston.**

## Scientific Books

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

## ALBERT BENARI,

### Tobacconist,

33 TREMONT STREET, - - BOSTON, MASS.

Cigarettes, Tobacco, and Smokers' Articles.  
Agent for Hale's Smoking Mixture.

## GEORGE H. GREENWOOD,

9 AND 11 BOYLSTON STREET,

Offers the largest stock of .. .. .

### English and French Briar Pipes

Ever shown in Boston, at very low prices.

## GRAND HOTEL Hair Dressing Parlors,

417 COLUMBUS AVENUE.

Hair Cutting in all the Latest Styles.

Students' Work a Specialty.

**T. F. NAGELS, Manager,**

Formerly of Palmer House Shop, Chicago.

F. S. FROST.

H. A. LAWRENCE.

H. C. GARDNER

## THE RIGHT PLACE TO BUY

# MATHEMATICAL INSTRUMENTS,

Colors, Drawing Papers, Blue Process Papers, T-Squares, Scales, Curves, Triangles, and all kinds of Architect's and Engineer's Supplies and

## Artists' Materials

AND PICTURE FRAMES,

IS AT

# FROST & ADAMS,

37 CORNHILL,  
BOSTON, MASS.

NEW CATALOGUE FREE ON APPLICATION.

Importers, Wholesale and Retail Dealers.

**F. L. DUNNE,  
TAILOR AND IMPORTER.**

A SPECIALTY MADE OF  
**Suits for Riding, Shooting, and Golf.**  
**Breeches for Riding, Hunting,  
 Racing, and Polo.**

TRANSCRIPT BUILDING,  
 328 Washington Street, corner Milk, Boston.

**COWLES ART SCHOOL,**

145 Dartmouth Street.

Special attention given to EVENING CLASSES FOR TECH  
 STUDENTS in life and cast drawing.

Address \_\_\_\_\_

**F. M. COWLES, Agent.**

Tuition, \$4.00 per Month. Three Evenings per Week.

**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.



**STUDENTS WILL FIND**

**BOSTON LINEN, BOSTON BOND and BUNKER HILL**  
 The nicest Stationery in existence.

They can obtain same in all the correct sizes, daintiest tints and  
 atest finishes. We have over 250 varieties from which they can select.

**Samuel Ward Company,**  
 49 and 51 Franklin Street. BOSTON.

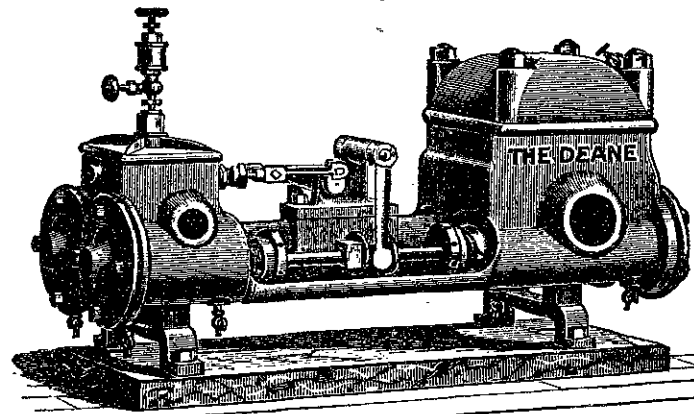
**TEXT-BOOKS, DRAWING MATERIALS,  
 CORRESPONDENCE PAPERS,  
 STUDENTS' SUPPLIES.**

**C. E. RIDLER,**  
 BOYLSTON AND BERKELEY STREETS, BOSTON.

The M. I. T. Supply Store,

**DEANE STEAM PUMP CO.**

HOLYOKE, MASS.



**STEAM PUMPS**

Boston Office: 54 Oliver 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.

**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.**

## KEEP'S SHIRTS.

Our Celebrated "K" Quality Stock Shirts, open back or open front, or both, and with different sleeve lengths

85 cents each Unlaundered, \$1 each Laundered.

Keep's \$1 Street Gloves are Famous.

**KEEP MANFG. CO., 114 Tremont Street, Boston.**

### Scientific Books

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

### ALBERT BENARI,

#### Tobacconist,

33 TREMONT STREET, - - BOSTON, MASS.

Cigarettes, Tobacco, and Smokers' Articles.  
Agent for Hale's Smoking Mixture.

### GEORGE H. GREENWOOD,

9 AND 11 BOYLSTON STREET,

Offers the largest stock of .. .. .

### English and French Briar Pipes

Ever shown in Boston, at very low prices.

## GRAND HOTEL Hair Dressing Parlors,

417 COLUMBUS AVENUE.

Hair Cutting in all the Latest Styles.

Students' Work a Specialty.

**T. F. NAGELS, Manager,**

Formerly of Palmer House Shop, Chicago.

F. S. FROST.

H. A. LAWRENCE.

H. C. GARDNER

## THE RIGHT PLACE TO BUY

# MATHEMATICAL INSTRUMENTS,

Colors, Drawing Papers, Blue Process Papers, T-Squares, Scales, Curves, Triangles, and all kinds of Architect's and Engineer's Supplies and

## Artists' Materials

AND PICTURE FRAMES,



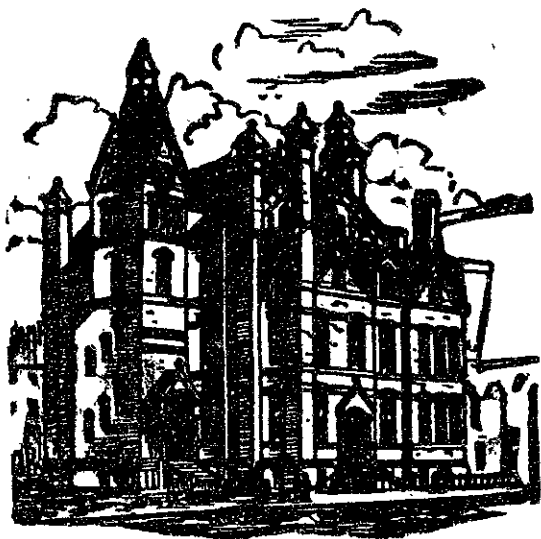
# FROST & ADAMS,

37 CORNHILL,  
BOSTON, MASS.

NEW CATALOGUE FREE ON APPLICATION.

Importers, Wholesale and Retail Dealers.

**GO WEST.**  
Cut Rates.  
**FOGG.**  
277 Washington Street, Boston.  
Mileage—all routes.



Preparation for the Established in 1828.  
Massachusetts Institute of Technology.

THIS HAS LONG BEEN A SPECIALTY AT

## CHAUNCY HALL SCHOOL.

REFERENCE is made to the INSTITUTE FACULTY in regard to the thoroughness with which Chauncy-Hall pupils are fitted, not only for entering the Institute, but also for pursuing successfully their subsequent work. Preparation, also, for business and for college.

No. 593 Boylston Street, Boston.  
(Very near the Institute.)

*Elmer Chickerling*

THE

## Leading Photographer

CERTAINLY has attained success. His success is proven by the number of patrons who daily visit the studio and take away with them the evidences of his skill and artistic ability. Before going elsewhere call at

21 WEST STREET, **BOSTON.**

A. McMILLAN.

A. McMILLAN, Jr.

# A. McMILLAN & SON,

Tailors and Importers.

WE have removed to our new chambers . . .

No. 127-A Tremont Street, opposite Park Street.

TELEPHONE, 3602.