

THE TECH

VOL. XXXIV. NO. 6.

BOSTON, MASS., TUESDAY, APRIL 7, 1914.

PRICE TWO CENTS

TECHNIQUE SLIPS MAY BE REDEEMED TODAY

Two Dollars More Will Secure Check Entitling Holder To Book.

Starting this noon Technique sign-ups will be redeemed in the Union. All those holding the seventy-five cent stubs will, upon payment of their two dollars, receive the check which entitles them to the book itself. This latter check must be presented if the owner desires to obtain a Technique, and will be good from the time of the rush until school closes in June. But, owing to the fact that it is customary to sign up a few more books than there are in the edition, because of the fact that some do not redeem their checks, it is expedient that all those desiring a book call for it as soon as possible after the day of the rush.

As the rush comes off next week this will be the last week of sign-ups and the board wishes to announce that all those intending to sign up who have not already done so should take advantage of the opportunity afforded to do so at the table in the Union. There will be positively no opportunity to sign up after Saturday noon.

All those entering the rush must pay their two dollars in advance and present their book check at the window at the time of the rush. Those fortunate enough to get one of the first four or the twentieth book will have their money refunded to them after the rush. The board wishes this latter fact to be made clear as one of the contestants last year reached the window only to find that he could not have a book because he had given his check to someone to keep for him until after the fray.

INSTITUTE COMMITTEE

Important Meeting To Be Held Tomorrow At Five.

The regular meeting of the Institute Committee will be held tomorrow, Wednesday, at 5 p. m., in Room 8, Eng. C.

Mr. F. H. Hunter, '02, Chairman of one of the Committees of the Alumni Council, will be present and will tell the Institute Committee of the proposed changes in the Alumni Advisory Councils of the various student activities. Several important changes will be suggested, principally in regard to the Advisory Council on Athletics.

It is especially desired that every member of the Committee attend this meeting in person.

Carnegie Tech has a cricket team under consideration. It is expected to develop the Pittsburgh engineering spirit.

STRONG IMPETUS GIVEN TO ROWING

Exactly Fifty Men Report At B. A. A. Boathouse For Tryouts.

Judging from the number of men that reported for the first crew practice at the B. A. A. boat house yesterday it is evident that the newly organized boat club has placed rowing on a solid basis. Over sixty men reported and twelve different make-ups were sent out for one-hour and a half workouts. No attempt was made to separate the men into their classes but they were sent out by Commodore MacRae in the best make ups for fours that he could arrange.

There was much good material out, especially in the Freshman and Sophomore classes. The Freshmen have many men of previous experience in high schools and colleges.

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SOPH-JUNIOR GAME

Inter-class Baseball Starts Today At Field.

The opening game of the interclass baseball series will take place at Tech Field this afternoon when the Juniors clash with the Sophomores. As neither team has put in much practice the contest will be in the nature of a workout for both teams. Saturday both squads put in a long practice in batting and fielding and the men showed up well for so early in the season. Some of the first string men of both teams have failed to report for work and for this reason the lineups will not be announced until just before the game. As the Sophomores have put in a little more practice than the Juniors, they are slight favorites. The Juniors, however, have been strengthened by several new men and if these perform up to expectations the team has an excellent chance of winning.

CHAUNCY HALL BALLOTS

The ballots for the officers of the Chauncy Hall Club for next year are out. The nominees are as follows: For president, V. E. Wardel, O. R. Freeman, K. M. Sully; for vice-president, E. L. Kemp, H. W. Whiting, Stewart Keith; for secretary-treasurer, R. R. Malcolm, R. H. White, K. H. Boynton.

These ballots must be left at the Cage not later than Friday, April 17. They are to be addressed to F. J. Wall and dues may be enclosed with them. The vote of any member will be void who has not paid his dues. The annual dues are fifty cents and the Technique assessment is fifty cents.

FOUR VALUABLE CUPS OFFERED AS PRIZES

Over Fifty Dollars Worth of Trophies In Addition To Relay Cup.

As an added incentive to those who are spirited and talented enough to run in the Spring Meet this year, the management is offering over fifty dollars worth of trophies for the winners of firsts, seconds and thirds in the individual events, and the winning team in the relay race.

Four beautiful and valuable cups are on the list, the Class Cup for the winning relay team, the Hurd Cup for the winner of the 120 yard high hurdles, the Batchelder Cup for first place in the mile run, and the Rockwell Cup for the capture of the 440 yard run.

The donor of the Hurd Cup is Benjamin Hurd, Jr., of New York. He is a member of the Class of 1895, and while in school he held the record in

(Continued on Page Three)

SPRING CONCERT

Ticket Sale Closes This Noon—Concert Wednesday.

The sale of tickets for the Spring Concert has exceeded the greatest expectations of the management. Since the number is to be limited this year, it is requested that those wishing to attend should secure theirs this noon in the Union. Members of the Clubs may get their complimentary tickets at the same time.

The next concert of the Combined Clubs will be held in Chelsea on next Wednesday evening, April 8th. A special car will leave the front of the North Station at ten minutes after seven.

JUNIOR PROM

This noon between one and two and at 4 o'clock in the Union will be the last chance for those who have signed up for the Junior Prom to pay their final deposit. After this time all subscriptions will be overdue. Programs will be ready tomorrow and may be obtained in the Union at four o'clock either Wednesday or Thursday. The Prom Committee has made arrangements with the Taxi Service Company whereby those who attend will be entitled to a ten percent discount.

COMMITTEE MEETING

A meeting of the 1915 Class Executive Committee will be held at 1 o'clock this noon in 22 Rogers. Matters of great importance to the class will be discussed and the Chairman requests the attendance of all the members.

SENIOR CLASS DAY OFFICERS SELECTED

Stone, Fiske, Morrison, Salisbury Elected Yesterday Afternoon.

The elections of the Class Day officers of the Class of 1914 were made late yesterday afternoon by the Class Day Committee. After hearing the report of the sub-committee on Class Day Exercises the following nominations were unanimously confirmed and the following men were appointed:

To be Class Historian—Howard Lyons Stone of Bridgeport, Connecticut.

To be Class Statician—Charles Parker Fiske of Auburndale, Massachusetts.

To be Gift Orator—Howard Archibald Morrison of Philadelphia, Pennsylvania.

To be Class Prophet—Ralph Dewey Salisbury of Chicago, Illinois.

"Peb" Stone is a member of Delta Tau Delta and Ostris. He was on the Technique Electoral Committee, the Senior Class Day Committee, the Executive Committee of his class during the freshman year, the Senior Portfolio Committee, and was History

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ATHLETIC ASSOCIATION

The business meeting of the Athletic Association scheduled for this afternoon at five o'clock has been postponed until further notice.

CALENDAR

Tuesday, April 7, 1914.

1.00—Junior Class Executive Committee. 22 Rogers.

1-2—Junior Prom Pay-ups Overdue. Union.

4.00—Show Rehearsal. Union.

4.00—1915 vs. 1916 Baseball. Field.

4.00—Junior Relay. Field.

5.00—Institute Committee Meeting. 8 Eng. C.

5.00—Glee Club Rehearsal. Jefferson Hall. Trinity Court Chambers.

5.00—Athletic Association Meeting Called Off.

5.00—Tech Show Orchestra Rehearsal. Union.

Wednesday, April 8, 1914.

4.00—Programs Ready for Junior Prom. Union.

4.00—Tech Show Orchestra Rehearsal. Union.

5.00—Institute Committee Meeting. 8 Eng. C.

7.10—Car leaves North Station for Musical Clubs' Concert in Chelsea. North Station.

8.00—Appalachian Mountain Club Lecture. Huntington Hall.

THE TECH

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TUESDAY, APRIL 7, 1914.

IN CHARGE OF THIS ISSUE.

Editors: A. E. Keating, '17; H. E. Lobdell, '17.

There is a rumor abroad that this year's Technique parade is to be led by a band whose name deserves to go down in history. In spite of all that has been said about the splendid book that the board is going to turn out, they are forced to admit that the band will be the crowning event of the day. If one has had the opportunity to hear them practise, or has, as he passed the Union some night, heard the most beautiful strains of music issuing forth from every crack and cranny in the old building, he cannot help but say that he has had the opportunity to hear **SOME BAND**. Don't get it mixed with the show band, O never. Why the show band is like unto the playing of children when contrasted with the masterful playing of the Technique rifle corps, beg pardon, drum corps. That doesn't quite express the idea either, for besides young Fales at the drum there is Sousa Brooks. Now when anyone mentions Sousa Brooks to you, you want to know right away that there is something doing in the world of noise. And such beautiful pieces as they are learning. Why there isn't a popular air but you may be able to recognize it if you listen hard enough. When time won't permit playing the airs separately they just try and play them all at once, and the effect is one of the most wonderful things that you could ever imagine. If you have a friend who loves music, or if you indulge occasionally yourself, you

ENGINEERING AND SCIENTIFIC NOTES

Electricity at the Canal.

The following account gives a very good idea of the electrical equipment of the Panama Canal which is so necessary for its successful operation:

In planning the Panama Canal the chief engineer, Colonel Goethals, was fortunate in the choice of a brilliant electrical engineer in the person of Mr. Edward Schildhauer, upon whom devolved the vast work of preparing specifications for and erecting the entire electric generating, lock-controlling and distribution systems. The power system for the operation of the locks, towing locomotives, lights for the locks and buildings, and motors not directly connected with the lock control, is composed of a plant at the Gatun Dam; a plant at Miraflores for emergency, lately used to supply power for construction work; a double 44,000-volt transmission line across the isthmus connecting Cristobal and Balboa with the two power plants; four sub-stations, stepping down at Cristobal and Balboa, and up or down at Gatun and Miraflores, depending on which of the two plants is supplying power; thirty-six transmission stations for power, traction and light at Gatun, Pedro Miguel and Miraflores locks, three transformer stations for the control boards at the locks, and stations at Cristobal and Balboa for coal-handling plants, machine shops and dry docks.

There is a total of thirty-six transformer stations for each lock, each containing transformers for power and one single-phase transformer for lighting. The stations, normally fed from the 2200-volt bus-bars in the sub-stations, can also be operated from the power plants; the stations at Gatun locks from the Gatun hydro-electric station; and the stations at Miraflores and Pedro Miguel from the Miraflores emergency steam plant.

To operate the lock machinery no fewer than 500 separate motors are provided, like the rest of the equipment, by the General Electric Company of New York, are employed, these having a total horsepower of more than 12,000. This is used for moving the leaves of the gates, operating the valves to admit or let out the water from the locks, and also for controlling the great "fender chains," designed to pull up a ship should it show any tendency to collide with the lock gates. The operation of these chains alone calls for ninety-six motors of 3384 total horsepower.

For the sake of ease of operation, the machinery was placed below the coping of the lock walls, thus affording a clear space for manoeuvring ships and protecting the apparatus from the weather without erecting numerous houses.

As the flight of locks at Gatun, for and water levels in the various lock chambers; and, with the exception of such machinery as needs only an "open" or "closed" indication, the working of the boards will be syn-

want to be on hand the day of the rush and learn to appreciate good music when you hear it.



If everybody could do just what everybody else could, there would be nothing doing in the Stadium!

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instance, extends over, approximately, 6200 feet, and the principal operating machines are distributed over a distance of about 4000 feet, it can be readily seen that mechanical control of machines from a central point would be almost impossible; and to control the machines locally would mean a large operating force distributed practically along the full length of the locks, which has invariably been the practice heretofore. Such a force would be difficult to coordinate into an efficient operating system. The situation, therefore, resolved itself into centralized electrical control, which reduces the number of operators, operating expense, and liability to accident. To accomplish this system, a control-board for each lock was constructed, which permitted

having all control switches located thereon mechanically interlocked so as to minimize, if not entirely prevent, the errors of human manipulations.

The control-boards are installed in special houses located on the middle walls, at points which afford the best view of the locks, although the controller does not rely upon direct vision for knowing the position of the gates or other apparatus, as all are provided with indicators on the control-board. The control-boards are made to be, approximately, operating miniatures of the locks themselves, and are arranged with indicating devices which will always show the position of valves, lock gates, chains,

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**TO TELL OF TRAVEL
AROUND JERUSALEM**

**Rev. W. A. Knight Will Describe
Biblical Scenes At Last
T. C. A. Talk.**

Next Tuesday's T. C. A. talk, the last of the season, will deal with travel in the Holy Land. The Rev. William A. Knight, Litt. D., will speak on "A Ramble Outside the Walls of Jerusalem," and will describe scenes connected with the last days of Christ.

The Rev. Mr. Knight is pastor of the Brighton Avenue Congregational Church in Allston. He has travelled extensively in Palestine, and has visited many of the places mentioned in the Bible. He is principally known as the author of several stories based upon his travels. One of the most notable of his books is "The Song of Our Syrian Guest." Others of his works are "Outside the City Walls," "No Room in the Inn" and "On the Way to Bethlehem."

The T. C. A. has selected Mr. Knight for the last talk largely because they believe his literary training will enable him to portray scenes of a strange country in an interesting way. Besides this, his experiences have not been of the ordinary kind. He has spent months at a time in the Holy Land, and has thus been able to observe its people closely and become thoroughly familiar with their customs.

SHOW REHEARSALS

**First Dress Rehearsal Friday At
The Opera House.**

The rehearsals of "A Royal Johnnie" have been improving rapidly. Friday there is to be a dress rehearsal at the Boston Opera House from four until eleven o'clock. Saturday there will be another at the same place from two in the afternoon until eleven at night.

The attendance has, as a rule, been good, although a few men do not seem to realize that they are expected to report every afternoon from now on without any special notice.

CREW PRACTICE

(Continued from Page One)

The sophomores have many new men besides the five that made up the first crew last year. Coach R. L. Stevens of the B. A. A. yesterday signified his intention to coach the Tech boys this season and beginning tomorrow will have charge of the crews. This will be a great help for heretofore the men have not had the services of a good coach and much valuable material has been lost.

In the freshman class MacDonald, Tole, Dunning, and Tuttle, a coxswain, all look like promising material. They have all rowed on the Rindge crew. Yesterday both MacDonald and Dunning stroked different boats. Dermond and Harrington also showed up well as coxswains. Dermond is a former Springfield coxswain, while Harrington is a new man, but ran his boat well. Last

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**COSMOPOLITAN CLUB
TO HOLD BANQUET**

**Will Combine With Harvard
Club At Hotel Thorndike
Thursday Night.**

Thursday evening of this week the Cosmopolitan Club will hold one of its most important gatherings of the year, when a banquet will be held at the Hotel Thorndike in conjunction with the Harvard branch of the association. Already over sixty members of the Technology society have signified their intention of attending, and about fifty of the Harvard men are also assured at the present writing.

The affair will be of an informal nature and a number of good speakers will be on hand. Dean Burton is to act as Toastmaster.

Non-members may obtain tickets to the banquet by leaving a note at the cage addressed to Mr. Z. Y. Chow. The cost per plate will be \$1.50.

JUNIOR CLASS

**Final Cut In the Third Year Relay
in Eight Days.**

All Juniors who have done any running during their three years at the Institute are urged by the captain to report today for relay practice at the Field. Only eight days now remain before the final team will be chosen. The following men and all others who are in any way interested are requested to report this afternoon: D. Baker, T. Barry, A. B. Curtis, John Homan, E. J. Kingsbury, G. C. Lawrence, H. B. Smith, W. B. Spencer, E. A. Teeson, W. S. Thomas, K. Roy, N. L. Foster, A. Nye, B. V. Euebuske, P. H. Taylor, A. S. Morrison, R. D. Waterman and L. E. Armstrong.

ILLUSTRATED LECTURE

Mr. L. D. Kitchell of the Appalachian Mountain Club will deliver a lecture on the "Glacier National Park" in Huntington Hall tomorrow evening at eight o'clock. The lecture is to be illustrated with moving pictures. It is to be given by the courtesy of Mr. William A. Seward, who is a member of the Club and the Boston representative of the Great Northern Railway.

INSPIRING REHEARSAL

The Technique Band held a very inspiring rehearsal yesterday afternoon in C Lowell until evicted by the Janitor. Two new selections were handed out, and played with great enthusiasm. Another rehearsal will be held next Monday if no injunction is issued against it before that date.

REHEARSAL TODAY

The Glee Club will meet for rehearsal tonight at five o'clock sharp at the coach's studio, Jefferson Hall, Trinity Court Chambers. The usual fine of fifty cents will be levied upon those that absent themselves.

The Illinois Rifle Team has attained a percentage of one thousand in this season's work.

**SENIOR PORTFOLIO MEN
REMISS IN THEIR DUTY**

**Neglect To Report To Committee—Still A Few Books
To Be Sold.**

Yesterday noon a meeting of Seniors having sign-up books for the Senior Portfolio was held and a few came round to report on their sales and hand in their books. The majority of the men did not come around, however, and the Committee desires that they report at once. All sign-up books are now supposed to be in the hands of the five members of the Portfolio Committee, who announce that they have still a few more Portfolios to sell. According to the indications at yesterday's meeting about 230 books are sold, leaving 20 more that may be bought by the late comers for a couple of days. However, before the end of the week the books will be ordered from the printer and after that there will be no chance for anyone else to sign up.

The Portfolio this year is to be different from all others in appearance, which is to be a secret until the day on which they come out. The Committee admits, however, that the book will surpass all others and will be an everlasting joy and comfort to all who buy it.

TECH NIGHT CELEBRATED

**Musical Club Members Entertain
At Sewell Hall.**

Tech night was celebrated by the Boston Chapter of the National Mandolin, Banjo, and Guitar Association in Sewell Hall last Friday evening. The numbers were given by members of the Combined Musical Clubs of the Institute. The solo, "Forgotten" by Parkinson was the hit of the evening. The banjo trio by Sherman, Brown, and Moorhouse was very well received. The quintet from the Mandolin Club and a solo on a Chinese zither pleased the audience. Something novel was introduced by Bryant, Sherman, and Springfield in their "stunt" played on two ukuleles and a one-string fiddle.

SHOW ORCHESTRA

The Tech Show Orchestra will have practice this afternoon at five. Wednesday and Thursday they are to start work at four o'clock.

CHALLENGE ACCEPTED

The challenge of the Course VII Baseball Team to the team representing Course XIII has been accepted, and the game will be played off Friday, April 10, at 2.30 o'clock at the Field. The line-up will be announced later.

NO PRACTICE TODAY

Freshman Baseball practice has been postponed until tomorrow at four on account of the Sophomore-Junior game today.

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SPRING MEET

(Continued from Page One)

the event for which he is giving the trophy, his time being 16 4-5 seconds. The present record holder is Earle L. Ovington, '04, the aviator of Newton, Mass. In last year's Spring Meet the cup was won by A. B. Curtis, 1913, in the time of 16 1-5 seconds. His victory was not counted as a record, however, as he knocked over one hurdle.

The Rockwell Cup for the 440 yard

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SPRING MEET
(Continued from Page Three)

run, is given by Dr. J. Arnold Rockwell '96 of Cambridge. Dr. Rockwell, who as the chairman of the Advisory Council and Institute Medical Adviser is well known to all followers of athletics at the Institute, also held the record in his event, his time being 51-5 seconds. Last year's cup was won by T. H. Guething in 50-4-5 seconds, which is also the Tech record made by Capt. Guething the year previous.

Mr. John L. Batchelder, Jr., of the Class of 1890 and former holder of the half mile record of 2 minutes, 12-1-5 seconds, is the donor of the cup given to the winner of the mile run. Last year's cup was won by C. T. Guething 1916 in 4 minutes, 42 seconds. The present holder of the Tech record for the mile, of 4 minutes 27 seconds is Edward B. Germain, captain of last year's Track Team.

Both Dr. Rockwell and Mr. Batchelder will be at the Spring Meet this year to see their cups contested for, and to hold the watch on the winners.

For first place in every event the aTa is awarded, and the winners of all events excepting those for which cups are given, receive an M. I. T. A. A. medal of sterling. Winners of seconds and thirds are to receive their class numerals and in addition second place silk badges of red and third place silk badges of white are awarded.

The Relay Cup is a new departure this year, and if the expected happens it will grace the trophy case in the Union with a new record engraved upon its surface.

OFFICERS ELECTED
(Continued from Page One)

Editor of Technique 1914. He is taking Course One, is a member of the Civil Engineering Society, and was Baseball Manager in his freshman year.

"Chollie" Fiske is a member of Delta Tau Delta and Ostris. His activities have been Stage Manager of Tech Show (3), Chairman of Yish-kabibble (4), and Manager of Tug-of-War (1). He was on the Technique Electoral Committee, Class Executive Committee, and is a member of the Senior Class Day Committee and Course One.

"Bogs" Morrison, the reputed class humorist for the last three years and Grind Editor of Technique 1914, is a member of Phi Gamma Delta. His activities have been Football (1, 2), Baseball (1, 2, 3), and the Technique Electoral Committee. He belongs to the Beaver Club and Course Two.

"Ralph" Salisbury, who is a member of Delta Kappa Epsilon, is at present sick with scarlet fever in the hospital but every indication points to an early recovery. He was a member of the Glee Club (1, 2), Manager of the Glee Club (2), Tech Show Chorus (1); Tech Show Cast (2), Tug-of-War (1), T. C. A. Cabinet (4), and General Manager of the Musical Clubs. He is taking Course Four and was Society Editor of Technique 1914.

COMMUNICATION

To the Members of the Senior Class: At our Smoker, held a few weeks ago, the singing of Technology Songs was one of the features of the evening. It was a decided success, and those of us who attended regretted that the student body did not meet more often for a similar purpose.

On Thursday, at the Undergraduate Mass Meeting, we shall have another opportunity and we must all be present at this big convocation to show that in spirit and enthusiasm, the Class of 1914 is second to none. It is hoped that commuters will make a special effort to attend because, from lack of time, most of them are unable to keep in close touch with student activities. Here is an excellent chance to hear brief, interesting accounts of the work of the Institute Committee, the Track Team, Tech Show, and Technique.

Remember the date, Thursday at four-thirty and do your part to make this Mass Meeting the largest and most enthusiastic we have ever held.
ARTHUR C. DORRANCE.

ENGINEERING AND SCIENTIFIC NOTES
(Continued from Page Two)

chronous with the movement of the lock machinery.

For such indication, appliances with commutators, multiple contacts, or ratchet mechanisms would not be suitable because of the many contacts and small pieces in their construction; and particularly because devices of this character move step by step and would not indicate all points in the movement of the main machinery. The indicators on the Panama control-boards were developed especially for this undertaking, and show accurately and synchronously every movement of the machinery to which they are connected, whether in the extreme ends of the lock systems or at any intermediate point. As showing how vast a work was the building up of these centralized control-boards, it may be remarked that these weigh 30 tons, and that in their construction there were employed 6,000,000 feet of control cables, 732 indicator motors and 464 control switches. To withstand the humid atmosphere of the Isthmus of Panama, every insulated part, such as relay, solenoid, circuit-breaker, and other coils, was impregnated with non-hygroscopic compounds.

CREW PRACTICE
(Continued from Page Three)

year's Freshman crew got together for a practice spin of about two miles and rowed together well. These men will not probably make up the Sophomore crew for this, however, unless their work warrants them a place.

The following men reported: Commodore MacRae, Gere, Lucas, Canby, Hill, Carver, Fuller, Duff, Murphy, Summer, Ferguson, Althouse, Proctor, Ahern, Rounds, Berkowitz, Brown, Dermond, Sabin, Schoonmaker, Bousquet, Seymour, Beaver, Bill, Repetti, Clayton, Freeman, Keller, Moody, Bertson, Hawes, Patten, Richardson, Drach, Harrington, Medding, Mertz, MacDonald, Crane, Toie, Lieber,

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659 Washington St.
Under the Gaiety Theatre

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O'Brien, Dunning, Tuttle, Stocking, Wellington, Mumford, Harrington, Hill, Duff.

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