

THE TECH

VOL. XXXII. NO. 31

BOSTON, MASS., TUESDAY, NOVEMBER 5, 1912

PRICE TWO CENTS.

SECOND CONVOCATION TO BE HELD WEDNESDAY

Sir William Ramsay to Speak On Chemical Problems of Interest.

President MacLaurin announces the second Convocation of the year in Huntington Hall, which will take place on next Wednesday afternoon, at 2 P. M. Classes will be suspended until 2.30. Sir William Ramsay, the distinguished English chemist, will speak on one of the chemical problems to which he has devoted so much of his life. The President desires a large attendance. Just previous to this lecture the professors of the Institute will entertain Sir William at a little lunch.

On Friday, October 18, 1912, Sir William Ramsay received an honorary degree of Doctor of Laws at the John Hopkins University at Baltimore. The President of the University, Ira Remson, is well acquainted with Sir William, for he was an assistant in the laboratory of the University of Tubington when the latter entered as a student. Not long ago he received one of the Nobel medals awarded for great discoveries in chemistry.

CAPTAINS ELECTED.

Sophs Chose Werlich—Freshmen Elect Sully for Tug-of-War.

Yesterday afternoon both tug-of-war teams elected captains to lead them through Field Day. The Sophomores chose P. McG. Werlich for the second time. This year the vote was nearly unanimous. The Freshmen elected K. M. Sully for a leader.

The teams will be chosen after the practice today. Coach Carlson of the Sophomores and Coach Affel of the Freshmen both say that it is of the utmost importance that every candidate be present at today's practice, as no man will be chosen who is not out for the drill this afternoon.

On Wednesday afternoon a photographer from THE TECH will be present to take pictures of the entire teams at 4.30 o'clock.

FRESHMAN GYM CLASSES.

Will Begin on Monday, Nov. 11—Orders Taken for Gym Suits.

Practice in the regular Gym classes will begin Monday, November 11. Everyone who is scheduled for that afternoon must be on hand. The marks in this course will be based largely on attendance, and Physical Director Kanaly wishes it fully understood that no cuts will be allowed.

No regulation uniform will be required, but all must appear in Gym suits at the first exercise. There will be no excuse for not being supplied, because there will be agents from sporting goods houses at the Gym from 1.30 to 4.00 P. M. on Wednesday. It will be to the advantage of the men to see these men, for they will give a reduction on the regular prices.

SIR WILLIAM RAMSAY EXHIBITS RARE GASES

Lowell Lecturer Talks About Properties of Neon, Krypton and Xenon.

Sir William Ramsay gave the next to the last of the Lowell lectures on "The Discovery of the Gases of the Atmosphere" last night to a very large audience. He first reviewed briefly what he has said at the last lecture about argon and the search for new gases of the same family. This search was finally successful only when Sir William Ramsay and Dr. Travers were given some liquid air.

He described the three types of machines which produce liquid air commercially at the present time. Two of these machines, one English and one German, make use of the Joule-Thompson effect, while the other depends on the conversion of heat energy into mechanical energy. When air is so highly compressed that its properties approach that of liquid air, it cannot liquify if it is above the critical temperature for air, but there is a considerable attraction between the molecules. When this compressed air is deprived of the heat of compression, and allowed to expand, the gas has to overcome the attractive force which has been acting between the molecules, and it obtains the necessary energy from its own store of heat, that is, it cools itself. This is called the Joule-Thompson effect. The other and more recent invention, which at present holds the palm for the most economic production of liquid air, utilizes the energy stored up in compressed air to run an engine, and the gas loses an amount of heat equal to the work that it does. In all these machines the gas after expansion cools the incoming gas, and gradually the system loses enough heat to allow part of the highly compressed air to liquify.

He mentioned the interesting fact that it was only until the discovery of the applicability of gasoline as a lubricant at very low temperatures that the most economic production of liquid air was attained. He also showed how hydrogen is liquified. In this case the Joule-Thompson effect is utilized, but only after the hydrogen has been cooled to the temperature of liquid air boiling under reduced pressure. Hydrogen in turn is used to chill helium before the latter is liquified. He said that liquid hydrogen must be separated from the air by cot-

(Continued to Page 2, Col. 2.)

COURSE IV SOC. MEETS.

G. H. Robb Elected Vice-President—New Members Proposed.

At a meeting of the Architectural Society yesterday afternoon, G. H. Robb, 1913, was elected to the office of Vice-President. At the same time, W. F. Herbert, 1913, was elected to the Executive Committee of the organization.

There was also submitted to the club the names of the Sophomores in the Architectural Course who are eligible to become members. These names will be acted upon at the next meeting, to take place at an early date.

KANALY PICKS RELAY TEAMS FOR FIELD DAY

More Trials Today to Decide Twelfth Man and the Substitutes.

Coach Kanaly picked the following men for the Sophomore relay team yesterday afternoon at the postponed trials held at the Field: E. E. Alt, D. B. Baker, T. J. Barry, A. B. Curtis, J. Homan, E. J. Kingsbury, G. C. Lawrence, B. Lapp, H. B. Smith, H. C. Thomas, E. A. Teeson. On account of a tie between several of the runners another trial will be held this afternoon at 4 o'clock. The last man of the team and the two substitutes will be chosen from the following runners making the fastest times: Clark, McBride, Place, Spencer, Goodell, Urquhart.

Ten men were chosen for the Freshman squad at the same time. These men were: Adams, Barton, Callahan, Comiskey, Hine, Lieber, Loomis, Klienert, Reed and Tapley. Several of the runners tied again, and Page, Dean, Goldstein, Hayes, Wallis and Guething will try again, and the eleventh and twelfth places and the substitutes will be filled from them. Adams' position is also indefinite because Coach Kanaly may withhold him on account of his physical condition.

STREAMS RUN TWO WAYS.

Flat Land in Minnesota Causes This Seeming Impossibility.

In the northern part of Minnesota there is a great area of land so flat that its waters sometimes flow into Hudson Bay and sometimes into the Gulf of Mexico. This area contains the headwaters of the Mississippi River. There are times when certain lakes discharge at both ends, the northern outlet taking the flow through Red River or Rainy River into Lake Winnipeg, and thence into Hudson Bay; while the southern outlet leads to the Mississippi. Therefore the dividing line between the Mississippi drainage basin and that of Hudson Bay is indefinite and in many places cannot be determined, and the consideration of these two basins in connection with their water supplies and the uses that can be made thereof must logically be taken up together.

TICKET SPECULATORS.

Harvard men are waging a war against ticket speculators and agencies which buy up the supply of best tickets to the Boston Theatres on football nights and sell them at prices far in advance of the regular box office figures.

Saturday night, when hundreds of college men attended the theatres, they were obliged to pay \$3.00 for the best seats in the orchestra at nearly all of the theatres. In some instances higher prices were demanded by sidewalk speculators. The greatest raise in prices comes on the night of the Dartmouth and Yale games.

MR. C. P. GOW TO SPEAK TO CIVIL ENGINEERS

Talk on Tunnel Construction Promises to Be One of Extreme Interest.

The Civil Engineering Society will have an interesting and instructive talk tomorrow evening in the Union at 8.15. Mr. C. P. Gow of this city will speak on tunnel construction, and will devote part of his time to the East Boston Tunnel.

Accompanying his talk he will show an interesting collection of lantern slides which he has made during his wide experience in engineering. He will also show some of the Boston Transit Commission's slides. He gave this talk not long ago before the Tuft's Engineering Society, where it was received with much enthusiasm, and it will be as well received here.

CATHOLIC CLUB DINNER.

Talk on Socialism to Be Feature of Meeting Wednesday.

The Catholic Club will hold a dinner in the Union Wednesday, at 6 o'clock. The officers have secured John C. Johnson, a prominent lawyer of this city, to speak to them on "Socialism." The preliminary arrangements for the annual dance of the Catholic Club will probably be started tomorrow night by appointing several important committees.

Tickets for this meeting are already out. It is expected that the meeting will be over in time to let those men who are interested in the Civil Engineering Society to attend the meeting that the latter will hold in the Union at 8.15 o'clock.

TO ASSIST AT POLLS.

Six ardent Bull Moose supporters left for Beverly last night at 8.30 P. M., to work at the polls in that district. They are to give out stickers to voters with the name of a candidate who, on account of an error, did not get his name on the regular ballots.

Technology men will also assist at polls in the various precincts of the city. The checking of names will in most cases be done by them. Many of these men were busy last night speaking at rallies about the city.

WEATHER.

Forecast for Boston and vicinity: Fair and warmer today; light to moderate south to southwest winds.

K CALENDAR.

Tuesday, November 5, 1912.

Election Day.
1.00—Field Day Tickets—Union.
4.00—Freshman and Sophomore Relay Team Time Trials—Field.
4.00—Tug-of-War Teams—Gym.
4.00—Banjo Club Trials—Union.
Wednesday, November 6, 1912.
2.00—Convocation—Huntington Hall.
4.00—Tech Show Book Due.
6.00—Catholic Club—Union.
8.15—Civil Engineering Society Meeting—Union.

FIELD DAY TICKETS ON SALE IN UNION 1-2 P. M.

THE TECH

MANAGING BOARD.

A. T. Gibson, 1913.....General Manager
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A. H. Walft, 1914.....Managing Editor
B. E. Adams, 1915.....Business Manager

NEWS BOARD

E. W. Mann, 1914.....Athletic Editor
M. Parls, 1914.....Institute Editor
P. J. Mann, 1915.....Institute Editor
H. Rogers, 1915.....Societies Editor

NEWS STAFF.

S. Berkowitz, 1915.....L. Lamb, 1914
Entered as second-class matter, Sept. 15, 1911; at the postoffice at Boston, Mass., under the act of Congress of March 3, 1879.

BUSINESS BOARD.

L. C. Lamb, 1914.....Adv. Manager
NEWS BOARD
F. C. Foote.....Asst. Managing Editor

Office, 42 Trinity Place.
Phone—Back Bay 5527 or 2180.
Night Phone—Back Bay 5527.

Published daily, except Sunday, during the college year by students of the Massachusetts Institute of Technology.

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Subscriptions within the Boston Postal District and outside of the United States must be accompanied by postage at the

TUESDAY, NOVEMBER 5, 1912

BULLETIN BOARDS.

The bulletin boards have again become the eyesores of Technology with all their sundry collection of data, most of which is fit for the files of a society for the collection of antiquities. Under present conditions the boards may as well be abolished altogether when we consider the exceedingly poor way in which they are cared for and the extreme neglect which is shown by the officers of the several different activities whose duty it is to post notices.

Among several other instances of neglect which are evident at this time, more especially on the Union bulletin, which is probably the most widely read, are the facts that the 1914 ballot results have not yet been posted, that there are several Institute notices of more or less importance which have not been placed on the proper sized cardboards—they are, therefore, not in accordance with the ruling of the Institute Committee, and at the same time being torn and in many cases lost. Many notices are several days old as well.

It is high time the Institute Committee assumed a strong hand in this matter and made sure that their rulings are carried out.

Many schools in Germany and Switzerland offer courses of instruction in the art of waiting on table. The Lausanne High School goes still further in this direction, and undertakes to teach the complete science of hotel-keeping. This includes thorough proficiency in four languages, geography, training in deportment, the study of hygiene and knowledge of gymnastics, calisthenics and dancing.

A number of chemists from the Institute and Worcester Tech went to Amherst last Saturday and Sunday to see the laboratory and see what Professor Hopkins is doing there. They had a banquet at the "Pheasant" on Amity street Saturday night, and were entertained Sunday by Professor Chamberlain. This gathering of chemists takes place twice a year, when the meet informally at one college or another to see and discuss each other's work and so keep abreast of the times.

The University of California in its total enrollment is now the second institution of its kind in the United States, having 7,263 students. This number is only exceeded by Columbia.

Union College is to have one of the finest gymnasiums in the country when its \$100,000 building is completed next fall.

REV. E. H. VAN ETTEN TO ADDRESS T. C. A.

New Curate at Trinity Church Will Have as Topic "The Second Mile."

The speaker at this week's T. C. A. meeting Thursday, at 1.30, in the Union, is a man well known to a great many Technology men, Rev. E. H. VanEtten, curate of Trinity Church. His topic is: "The Second Mile." Mr. VanEtten is a young man, a recent graduate of Amherst College, and came to Trinity only last year. Yet during his short time at the church he has become very popular with the young men, especially those Technology men who are in the Brotherhood of St. Andrew, with which he is closely connected and for which he has done a great deal of work.

His interest in the students of the city, shown by his hospitality at Trinity House and in other ways, is appreciated by Technology men, and it is expected that a large crowd will be at the meeting. Mr. VanEtten has won an enviable reputation as a speaker and preacher, and an interesting and inspiring talk is looked for.

COMMUNICATION.

To the Editor of THE TECH:

From the opening of the term, about twenty-five or thirty men have asked me if I would not give a course in Knots, etc. A week ago I announced in THE TECH that I would give such a course if any number of men in the second, third and fourth year classes desired it, and in order that I might know at what time to give the instruction, so that it would suit the greatest number of those desiring the work requested, all such to notify me of their available time. Since this notice appeared a number of men have spoken to me of the course and they desire to take it, but to date have had just one application submitted. If even a small number desire this course, and it is possible to have a section at any time when they can attend, I shall be glad to arrange it; but it is manifestly impossible to select such time unless I can have the applications submitted. If you want a course, put in the applications at Rogers Hall Postoffice promptly so that we can either get started or drop the matter for this year.

(Signed) MAJOR COLE.

SIR RAMSAY'S LECTURE.

(Continued from Page 1, Col. 1.)

ton wool, as otherwise the air in contact with the hydrogen will solidify gradually and sink as a white precipitate to the bottom of the hydrogen bulb.

The liquid air that Sir William Ramsay first obtained left on partial evaporation a residue of gas. This was freed from oxygen and nitrogen, and the spectrum which the residue showed had some new lines in it, and had a density of 22.5 greater than that of argon. By the same sort of reasoning that was used in the case of argon it was decided that there was present in the argon some gas still heavier than the latter. How to separate this gas was the next question, and the method finally decided on was the fractional distillation of a mixture of the liquified gases. Sir William Ramsay illustrated the method on the lecture table. He has a gas-holder which could be filled with the mixture of the gases, and then these could be forced under pressure into a bulb which was surrounded by liquid air. There the gases liquified, and when they were allowed to boil away the first portions could be collected in one gas-holder, the second portions in another, until at last determinations of density and the examination of the spectra showed that the gases were pure. In this way krypton was separated. (Continued to Page 3, Col. 2.)

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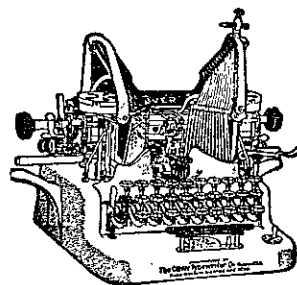
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JUNIORS VS. FRESHMEN.

Third Year Men Defeat 1916 in
Football Yesterday.

Yesterday afternoon the Junior
Class football team played the Fresh-
man eleven in a practice game last-
ing less than half an hour. Although
the Juniors have had no practice, they
had no difficulty in breaking through
the Freshman line at will.

C. Fox, at halfback, played a star
game for the third year men, scoring
one of their touchdowns. The 1914
backs made big gains through the
line and around the ends. The first
year men were given the ball several
times to see what they could do on
the offense, but couldn't gain much
against the Juniors. The 1916 men
were unable to score, while the
Juniors crossed the goal line twice.

The Juniors lined up as follows:
Mackentepe, l. e.; Brown, l. t.; Hardy,
l. g.; Duffield, c.; Benjamin, r. g.;
Burnham, r. t.; Hines, r. e.; Mitchell,
q. b.; Deckop, r. h. b.; Fox, l. h. b.;
Bryant, f. b.

SIR RAMSAY'S LECTURE.

(Continued from Page 2, Col. 2.)

arated from argon. Its spectrum,
which Sir William Ramsay exhibited,
was not very striking. But at the
same time there was found a portion
of the gas which was lighter than
argon, and whose spectrum showed
lines which belonged neither to argon
nor to helium, the lightest element of
the group. This gas was freed from
helium by treatment with liquid hydro-
gen, which solidified the neon (the
"new" one), leaving the helium to be
pumped off. The residual neon pos-
sessed a very striking spark spec-
trum, for it was a brilliant flaming
red. When its light is analyzed there
are found to be present many red
lines.

From the krypton Sir William Ram-
say obtained by a series of fraction-
ations extending over several months
a heavy gas with a rather dull violet
spectrum, which, however, becomes a
brilliant blue if a Leyden jar is placed
in the circuit. The density of this
gas, xenon, is about 66 times that of
hydrogen, making it almost the
heaviest, if not the heaviest, of the
permanent gases. Hydrogen iodide is
its closest rival.

These gases possess the most varied
physical properties, yet these prop-
erties are in every way in agreement
with the positions that the elements
occupy in the periodic table. Helium
boils at the extraordinarily low tem-
perature of 4 degrees Absolute, while
the critical temperature of xenon lies
above zero Centigrade.

Sir William Ramsay was given the
residues left at the end of a week
from the distillation of 120 tons of
liquid air (which is fractionally dis-
tilled to obtain its oxygen), and he
investigated this residue very care-
fully. He obtained from it 120 cc of
pure xenon, which could not be fur-
ther fractionated. They found that
the proportion of xenon in air was
less than that of gold in sea water.
If there is any other gas present in
air which is heavier than xenon they
decided that it could not occur to a
greater extent than one twenty-five
millionth. But that there is another
gas of this family Sir William intends
to show at his next lecture, and at
that time he will also explain why it
was not found by the fractionation of
liquid air.

DON'T BE SO LAZY!

Limber up and Stretch those muscles at the

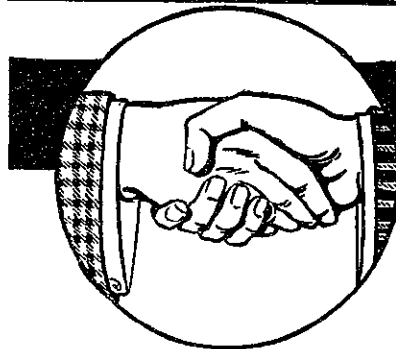
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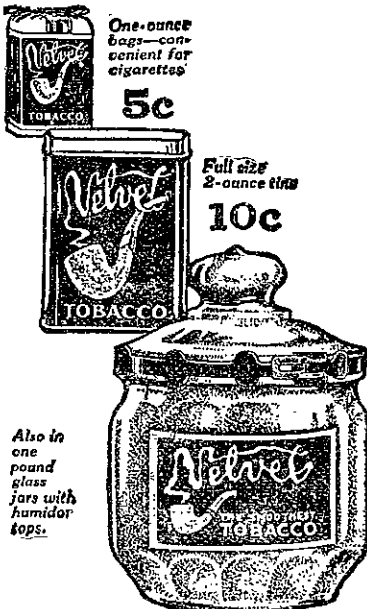
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says, Cicero and Emer-
son both omitted to
say that many life-long
friendships have had
their beginning in the
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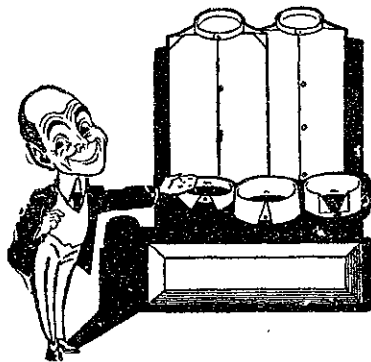
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Faculty Notices, free.
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Individuals, 10c. per line, 6 words to a line.

FACULTY NOTICE.

Candidates for Graduation.

October 28, 1912.
Notes in regard to status with reference to graduation have been sent to fourth-year students. Any student who has not received a note should consult me if he expects to be a candidate for graduation in June, 1913.
A. L. MERRILL,
Secretary of the Faculty.

STUDENT VOLUNTEERS—Give your names to L. R. Talbot, T. C. A. office.

PRECISION OF MEASUREMENTS.

The lectures in Precision of Measurements for entering College Students will be held on Mondays and Fridays at 4 P. M., in Room 23, Walker Building, during the first five weeks. (8-11) H. M. GOODWIN.

FACULTY NOTICE.

Third Year—Elements of Electrical Engineering—Change of Recitation Hour.

Section F will change from Tuesday, at 10 o'clock, to Wednesday, at 9, to recite in Room 20, Engineering B.
WALTER HUMPHREYS,

FACULTY NOTICE.

GYM CLASSES begin Monday, November 11, as noted on the Freshman tabular view. All men must be in Gym suits at the first exercise. No Cuts allowed during year.
A sporting goods representative will be at the Gym from 1.30 to 4 o'clock on Wednesday.
F. M. KANALY,
Gym Instructor.

RECEIPTS for Seniors who paid class dues with their ballots may be obtained at the Cage. (31-5t)

ROOM FOR RENT—Back room for two men, large desk, steam heat, continuous hot water, two closets, three windows; \$5.00 per week. 88 St. Botolph St. (Tues-Thurs-Sat)

PRIVATE HOME—One large room, 2 connecting rooms, beautifully furnished, fine library; preferably professors or graduate students. Convenient to all electric. 19 Howard Ave., Brookline.

LOST—At Tech Field, an open-faced gold watch with H. R. B. on back. Reward if returned to 16 Exeter street. (28-2t p)

LOST—A 10-inch Slide Rule, in the Union, Monday, Oct. 28, 1.30 to 2 P. M. Return to Morrill, '14, for liberal reward. (28-2t p)

FOUND—Slide rule and case, Pipe case, Raincoat, Text-books, Umbrella, Bunch of keys, 2 Stick pins, 2 Note Books, 3 Watch Fobs, Fountain Pen, Watch, 2 pairs of Rosary Beads, Fraternity Pin. Apply at Bursar's office. Dancing Parties every Wednesday and Saturday evenings. Lundin Gymnasium, 44 St. Botolph street, Boston. Refined patronage. (Tues-Fri)

UNIFORMS.

The agent for Jacob Reeds' Sons, who have the contract for making the drill uniforms for the battalion, will be at the Armory from 3 to 4 o'clock, **WEDNESDAY, NOVEMBER 6TH.**

At that time all uniforms which have been turned in to them for repair or alteration will be delivered to those who are able to make payment at that time.

At the same time they will receive any other second-hand uniforms which are in need of alterations. It will also be possible to have caps of the old pattern remodeled after the new style.

All officers, non-commissioned officers or privates not having ordered all parts of the required uniform should do so at this time as it will be their last chance. (31-2t)

HOTEL BRUNSWICK BOSTON

EUROPEAN AND AMERICAN PLANS
HERBERT H. BARNES, Proprietor

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Assets other Boston Trust Co.'s (Sept 4, 1912)	170,000,000
Combined Assets all Boston Trust Co's.	\$267,000,000

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