

THE TECH

VOL. XXXI. NO. 66

BOSTON, MASS., WEDNESDAY, DECEMBER 13, 1911

PRICE TWO CENTS

TRACK MEN SHOWING UP IN LARGE NUMBERS

Competition Keen For Relay Places—All Outside Work.

The prospects for a championship relay team this year are getting better every day. The men are reporting for practice in larger numbers than they ever did before and seem to take a greater interest in the work. Owing to the pleasant weather very little work is being done on the indoor track, and the men are getting the benefits of long distance road work. The candidates for the shorter relay are rounding out in fine shape, and the competition for a place on this team is going to be very keen.

Thompson, who ran on last year's team, has been training steadily and is coming along in fine style. Guething has been working every day and will be the stronghold of the team, without doubt. Of the new men that are out little can be said of who is the strongest because no time work has been done as yet. Oettinger, who was not in school last year, but who always showed up well in the trials for this team, looks good for a place, and Benson, who ran on the team two years ago, looks as if he would fill out one place. Munch, Strachan and Gabriel are also out and are very apt to surprise the followers and get a place.

One man who would bear watching is A. G. Thompson, 1912, who is showing up for practice quite regularly. Thompson ran on the 1912 relay team in his Freshman year but has not done much work since. He was a very fast man, and to take the words of our Coach, "had the makings of a runner." Wilson will also be a formidable candidate, and with this long list of good men trying out it looks as if one of the best teams is to be produced this year.

The half-mile team is not at all lacking in good material. Marceau, Bylund, Germaine, look like a good backing, and with one of our many cross-country men to fill the place of White, who graduated, we will be the top liner in the long distance relay work.

WINTER CONCERT FRIDAY

Only Big Social Function of Fall Term—Tickets Now on Sale.

Have you bought your ticket for the Winter Concert on Friday night of this week? If you haven't, you should do so at your earliest opportunity, as all the best seats are fast being taken up. Reserved seats are still on sale at the Union, and may be purchased there at any time before Thursday night. The Mandolin and Glee Clubs, as well as the Orchestra, are holding extra rehearsals this week, so as to get everything in the best possible shape. The Pop Night concert and the concert at Roxbury Monday night served to show where the weak spots were, and the leaders are taking advantage of this information to put on the few finishing touches which are needed. No expense is being spared to make this the best concert in the history of the Institute, and the hall decorations will surpass anything ever before attempted. After the concert music for dancing will be furnished by Poole's Orchestra, the best in Boston, and the one which plays

(Continued on Page 3.)

FAULTY CONSTRUCTION CAUSED DAM FAILURE

Professor McKibbon Tells Civils What to Avoid in Dam Construction.

Yesterday afternoon about 125 men, members and guests of the Civil Engineering Society, heard Professor F. P. McKibbon talk on "The Austin Dam Failure." Professor McKibbon, whom Professor Spofford persuaded to talk to the Civils, is the expert witness employed by the State of Pennsylvania to investigate the cause of the failure. He gave the Civils a report of his findings, illustrating it with diagrams and slides. He laid the failure to poor foundations, faulty construction, faulty repairs and faulty operation.

He first explained how the dam, which was used to hold water for a paper mill, was located above the towns of Austin and Costello. These towns lie in a deep river valley, on the banks of the stream which filled the reservoir. The second dam, the one which failed, was built in 1909 of concrete. It had a vertical upper face 50 feet high, while the downstream face was inclined, making the base 30 feet through. The foundation was composed of layers of soft shale and limestone in very thin layers. To hold the dam to the rock iron rods were used, but the base was not made up of steps. The pouring of the cement was not done continuously, so that there were horizontal joints extending clear through the structure in places. In some courses large rocks were used to a considerable extent.

Soon after the dam had been completed it was noticed that large cracks formed, and when a head of water gathered behind the structure part of it moved forward several inches. On draining the reservoir for repairs it was found that the water had penetrated between the dam and the protecting apron. After some slight repairs the dam was again put into use. It was only a few days after the reservoir had filled to the spillway that it broke, allowing the water to escape and wipe out the town of Austin.

Professor McKibbon described the

(Continued on Page 2, Col. 2.)

U. S. NEEDS CHEMISTS.

Tech Men Should Take Advantage of Exams. in January.

In view of the great demand for chemists, the Civil Service Commission of the United States is experiencing much difficulty in securing a sufficient number of properly qualified persons for the governmental positions.

A recently issued announcement of an examination to be held January 17-18, 1912, for filling several vacancies in the position of assistant chemist, Department of Agriculture, and elsewhere as needed, at salaries ranging from \$1200 to \$1600 a year, states that the opportunities for appointment from this examination are excellent, since of thirty-eight persons who passed this examination in April, 1911, three were appointed at \$1400 per annum, and twenty-seven others were tendered appointment at \$1200 per annum. Full information as to educational training required and nature of duties may be obtained from the U. S. Civil Service Commission, Washington, by asking for a copy of the assistant chemist announcement.

NEW IDEA PROVES TO BE A SUCCESS

M. E. Society Inaugurates Plan of Student Discussion on Topic.

Last evening, in the Union, a meeting of the Mechanical Engineering Society was held. Mr. Noyes called the meeting to order and first gave out some important announcements after the secretary's report. He was followed by Mr. Davis, who talked on the subject of "High Speed Gasoline Engines." He compared the gasoline engines to the athletes on the track and in the field events. In the heavy work, such as putting the shot and hammer, the heavy men count, while in the track events it is the men who are light and speedy who carry off the honors. In the same way light gasoline engines are built for speed, while the heavy ones do the greater amount of stationary and heavy work. In order to increase the horse-power of an engine the speed is increased, and today the number of high speed engines is rapidly growing, due in a large amount to advertising, which keeps the different types constantly before the attention of the public. Cheap, expensive, simple, complex, good and bad engines have been made with corresponding amount of sales.

Mr. Davis showed, with the help of numerous lantern slides, the different steps in the progress of the gasoline from the liquid state, through the cylinder of the engine and out as ex-

(Continued on Page 3.)

TECH'S LOBSTER FIFTY MILLION YEARS OLD

Professor Shimer Brings Valuable Collection From Europe.

Professor Hervey W. Shimer of the Geological Department, who has recently returned from a European trip, collected some very fine geological specimens in different parts of Europe which are probably the finest in the country, if not in existence.

The trip took him to various places on the Mediterranean, where he found many interesting specimens, and thence northward through Europe, stopping at the important geological beds and having his trouble well repaid at each stop.

Among the collection which will soon be placed at the disposal of the Technology students are specimens of relatives of the nautilus and oyster families, which were found in the Jura Mountains, in northern Switzerland, and are estimated to be about 9,000,000 years old, according to Professor Shimer's deductions. A fine specimen of the first lobster, now entirely extinct, was found in the mountains about ten miles from Bohemia, at a point now separated from the sea by two countries. It is estimated to be about 50,000,000 years of age. The internal skeleton of an extinct squid of the same age as the nautilus was also found. These came from the Jura Mountains. With these additions to the collection at the Institute Professor Shimer is now ready to proceed with a new course on European geology.

During the entire trip Mrs. Shimer gave Professor Shimer invaluable assistance, in fact he says that the success of the searches was due largely to her.

F. H. RINDGE WILL TALK TO T. C. A.

Will Meet Them Today—Is Also Regular Thursday Noon Speaker.

Wednesday afternoon an informal meeting is to be held in the T. C. A. office, to which are invited all who are interested in social service to meet Mr. F. H. Rindge, the speaker for Thursday. Mr. Rindge is the secretary of the International Committee of the Y. M. C. A., in charge of the industrial service. He is also an expert in teaching English to foreigners.

A special invitation has been sent to all Tech men who are teaching classes of immigrants. Mr. Rindge's work is much broader than this, and any man who is interested in any kind of social service should meet him. There are many Tech students who find it impossible to engage in any regular work of this kind during their course but who have done so before coming here.

Mr. Rindge has an attractive personality. He is a young man who has already made his mark in his chosen field of work. In other colleges he has spoken many times before large gatherings. Here, on account of the peculiar conditions, evening meetings seem impracticable, so the T. C. A. is relying on the student body to give him a rousing reception at two meetings at which he will speak—the regular one Thursday and this informal one in the office Wednesday, at 5 o'clock.

NO ICE—NO HOCKEY.

Weather Holds Up Practice at Most Colleges.

The college hockey season was to open Saturday, when Williams was scheduled to meet Trinity, but the game was not played because of bad weather. Williams has only about 25 men out for the team. Of these, four men played on last year's team. The veterans are Bronkard, Capt. Michael Curtis and Gillette. The squad has had little ice practice because of the lack of cold weather, although the rink has been in readiness for some time.

Yale is solving the early practice problem by taking the men to New York twice a week to practice at the St. Nicholas rink. Captain Harmon has forty likely candidates out, and prospects look good for a much better team than last year's.

Princeton is also practicing at New York, and has shown very good form for so early in the season. Last week they won a practice game with the St. Nicholas team by a score of 4 to 0. Captain Kay has shown up exceptionally well and is expected to be about the best college hockey player of the season.

CALENDAR.

Wednesday, December 13th.
1.30—Wireless Meeting—Wireless Room.
5.00—F. H. Rindge, T. C. A.—Union.
8.00—Mining Engineering Society Meeting—Union.
8.00—Lowell Lecture on Inheritance—Huntington Hall.
Thursday, December 14.
1.30—T. C. A., F. H. Rindge—Union.
4.15—Glee Club Rehearsal—Union.
5.00—Mandolin Club Rehearsal—Copley Hall.

THE TECH

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WEDNESDAY, DEC. 13, 1911

IN CHARGE OF THURSDAY ISSUE.

EDITOR—Waitt, A. H., 1914.
Associate—Lewis, Jr., M. B., 1914.

It is now over a month since Field Day and still the winners of numerals are waiting for their notifications that they are privileged to wear them. Many of the men that won the right to wear them are out for track practice, and it seems as if it were no more than fair if they could have them on their jerseys. It is a very simple matter to send out a letter to each member of the football teams, the winning relay and tug-of-war teams, and it would certainly show them that their work had been appreciated by the Advisory Council.

The Ballot Box in the Lower Tech Office is still open and will be the remainder of the week. We hope that every one of the 1500 and more undergraduates will express their opinion one way or the other.

In regard to the matter we feel that the foundation of such a society would be a great injustice to the various activities at the Institute. The activities have considerable trouble now interesting the men in their work, and with the chance of earning the privilege of wearing a pretty jewelled pin ahead of them if they pay strict attention to their studies, the activities will die a natural death for want of support, and the percentage of men, vain for personal decoration and a chance to boast of his scholastic proclivities, will be abnormally large. Is that the end that is to be sought? If so, it would be better to let the matter remain until Technology, has increased its size four-fold and we have enough students to supply both the demands of the activities and that of the honorary society for members.

The student body is beginning to wake up to the fact that there is a live issue to be decided, and they are the ones to decide. Next Monday morning we will announce in these columns the result of the voting contest on this question. The only qualification to vote on this question is that your name appears in the catalogue under the list of STUDENTS.

ALUMNI MEMBERSHIP.

By vote of the Alumni Association all former students are eligible to membership, thus the old distinction between complete and associate membership is done away with.

"WORSE THAN DIRTY" MILK IS DISCUSSED

Dr. Rosenau Says Boston Has Best Supply of Any Large City.

Yesterday afternoon Dr. Milton J. Rosenau of Harvard delivered his third lecture in the course on Milk Supplies. Last week's discussion concerned itself with "just plain dirty" milk; yesterday's with infected supplies and the appalling outbreaks of epidemics caused by it, that include tuberculosis, scarlet and typhoid fever and diphtheria. The most important of these come not from diseases of cattle, but are simply transferred from man to man via milk. Because it transmits infection so easily it is responsible for more and a larger variety of sicknesses than all other foods.

Since 1907 there have been over 4000 cases here in Boston, yet this city has the best supply of any in the country. The local supply is handled by a few large contractors, a fact that tends to spread an epidemic farther than would be the case if the market were supplied by a multitude of little dealers who could not contaminate each other's supply. By a study of charts it has become easy to distinguish milk epidemics from water ones, even though the investigator may be unfamiliar with the city concerned, and by the same method the source of infection can be located immediately, and the supply cut off from that place. Because of the possibility of such speed the whole duration of milk-borne epidemics is now not more than a week. Last spring's tonsillitis outbreak here was preceded three weeks by one in Marlboro and Southboro, and almost in a day rose to a height not equaled by any other in recent years, until there were over two thousand cases here, in Cambridge and in Brookline.

Tuberculosis has so far not been fought with a great deal of success, but has now changed from a medical to a social problem, and it is now perfectly possible to escape it and get rid of it, if one can pay for pure foods and air. Tuberculosis infection through milk may come either from a cow or, more usually, from dirt in transit. When germs are once in milk they are swept upwards by forming cream, and consequently the cream is the worst. They can live for months in butter.

With all these unpleasant circumstances Dr. Rosenau still recommends the use of pure milk as much as ever, for he is not fighting milk, but impure milk.

The next lecture will be given Friday.

AUSTIN DAM.

(Continued from Page 1.)

location of every one of the larger fragments, telling of the part each had played in the disaster. The photographs that he showed gave conclusive evidence that the dam had slid on thin layers of shale and clay on which the dam was built, one of the first points to weaken being that at which the first cracks had formed.

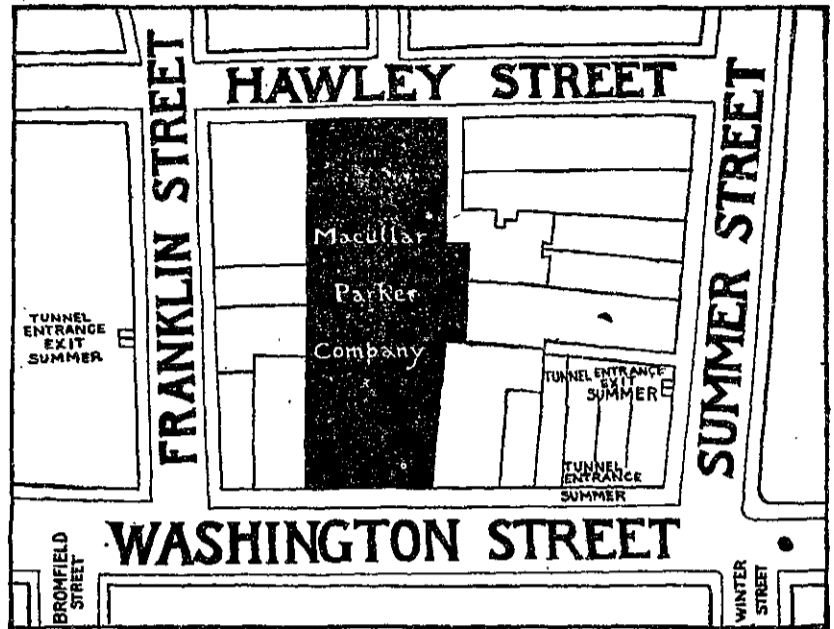
As the result of his study he told the Civils of several important factors that ought to be emphasized more. The first of these is the upward pressure caused by the infiltration of water into the joints and under the base of the dam. In the case of the Austin dam this factor was overwhelmingly important, for there the

Continued on Page 4.)

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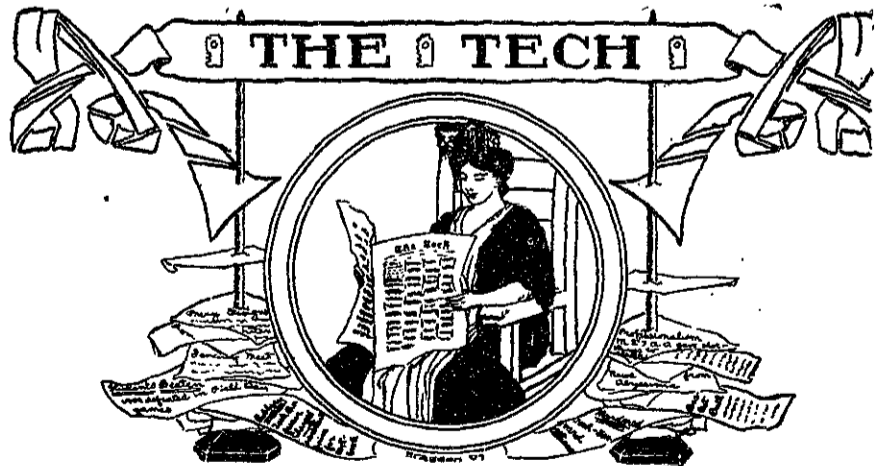
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Mark X

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Name..... Class.....

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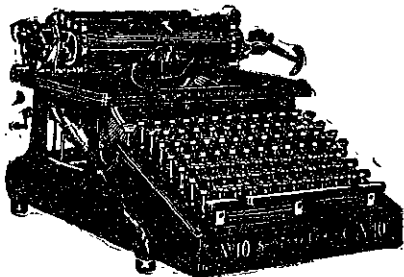
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**DR. LINDGREN TO SPEAK
TO MINING SOCIETY**

Talk on "Western Deposits"
This Evening in the Union—
Refreshments.

An important meeting of the Mining Engineering Society will be held in the Union this evening at 8 o'clock, when Dr. Lindgren of the U. S. Geological Survey will give a talk on "Western Ore Deposits." Dr. Lindgren is at the head of the Department of Mineral Resources of the U. S. Geological Survey, and is the foremost authority in America on Economic Geology. He has made great advances in the opening up of the mineral resources of the West, and his talk will undoubtedly be of the greatest interest to all. Dr. Lindgren stated in an interview that he would not stick closely to the subject, but that he would speak on various topics of geological interest.

The meeting is to be held in the Union, and at its close refreshments will be served. A general invitation has been sent out to everybody, and it is expected that a large number will be present who are not members of the society.

WINTER CONCERT.

(Continued from Page 1.)
at the Junior Prom. This concert is the only important social affair during the first term, and is considered one of the best events of the whole year. In after years, when you are engaged in the practice of your chosen profession, you will look upon these occasions as the best part of your college life. So make up your mind that you are not going to miss this concert. If you don't care for music, come to the dance; and if you don't dance, come and enjoy the music. In either case you will vote it one of the best evenings that you have ever spent.

The musical program will be as follows:

1. Magic Flute, Mozart, Technology Orchestra.
2. The Song of the Cannibal, Scott, Glee Club.
3. Pink Lady Waltzes, Caryl and Odell, Mandolin Club.
4. Sweet Corn, Weidt, Banjo Club.
5. Under the Southern Moonlight, Allen, Vocal Quartette.
6. (a) Faust, Gounod; (b) Cleopatra Dances, Oehmler, Orchestra.
7. Butterfly Waltz (as played by the Balaika Orchestra), Andreeff, Mandolin Club.
8. Winter Song, Bullard, '87, Glee Club.
9. Evening Chimes, Rollinson and Odell, Mandolin Quartette.
10. Plantation Symphony, Paul Eno, Banjo.
11. Stein Song, Bullard, '87, Glee and Mandolin Clubs.

The matrons will be: Mrs. Richard C. MacLaurin, Mrs. Alfred E. Burton, Mrs. Allyn L. Merrill, Mrs. Henry P. Talbot and Mrs. Walter Humphreys.

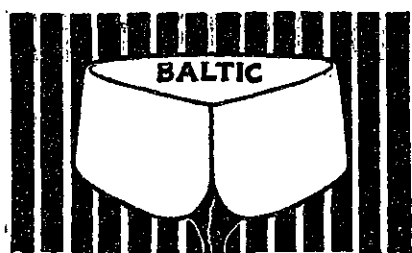
The reception committee is composed of the following: H. K. Franzheim, president; H. H. Partridge, general manager; W. C. Brotherton, treasurer; H. C. Robinson, Glee Club leader; J. J. Aplequest, Mandolin Club leader, and R. F. Rankin, Banjo Club leader.

M. E. LECTURE.

(Continued from Page 1.)
haust. The crude petroleum must first be refined, then mixed with air and carried to the cylinder, where it is ignited, afterward being exhausted.

Mr. Dasso followed Mr. Davis and discussed foreign engines. After his talk refreshments were served. This meeting was the first one to bring in the idea of student discussion and proved a success, the speakers handling the subject with ease and conviction.

There are to be two meetings of the society next week, one on Tuesday, at 4.10, in 11 B, when Mr. F. J. Hoxie, '92, will talk on "The Strength of Timber Affected by Fungii." The other
(Continued to Page 4.)



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M. E. LECTURE.
(Continued from Page 3.)
meeting is to be held on Thursday, when Mr. B. R. T. Collins will address the men on "Boiler Plant Efficiency." The Harvard society has invited the Tech men to hear a lecture to be delivered on January 5, at 202 Pierce Hall. Also the A. S. M. E. is to hold a meeting December 20, in Chipman Hall, Tremont Temple, where "The Electric Propulsion of Ships" will be discussed.

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AUSTIN DAM
(Continued from Page 2.)
The joints were poorly made, and the foundations were unprotected from water. The second consideration is the direction in which the resultant pressure acts on the foundation. If this pressure acts far from vertically, at a point near the lower edge of the base a tendency to slide is produced. At Austin this pressure was altogether too great for the resisting power of the underlying clay, and the dam slid. A third factor is the slight strength of horizontal layers of concrete when poorly bonded, even though iron tie rods be used to some extent. It was this fault which allowed the water to break a way through the dam at one end, as it was the fault of the foundations at the other.

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