

ASSEMBLY CALLED TOMORROW

Techman Leads Tokyo Bombing, Army Honors Jimmy Doolittle

Brigadier General James H. (Jimmy) Doolittle, who came into the limelight two days ago when it was revealed that he had led the recent U. S. Army Air Corps bombing raid over Tokio, received his master and doctorate degrees at Technology. Doolittle studied for two years in the course in Aeronautical Engineering, and was also engaged in research work here at the Institute.

Professor Herman R. Kurrelmeyer, of the Modern Language department, who is finishing his fortieth year of teaching at the Institute, had Doolittle in his elementary German class in 1925. Professor Kurrelmeyer recalls Doolittle as a hard and efficient worker, a trait which many have noted in the famous airman.

He was a senior in the California School of Mines when the first World War came. Enlisting in the Signal Corps, aviation section, he was twice on the verge of being sent overseas, but each time the order was rescinded. Finally the Air Corps made Doolittle, who was hungry for action, a flying instructor, in which capacity he served until the end of the conflict, much to his disappointment.

After the war, speed became his profession, and he joined the tough

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Lowell Institute Graduates 179

Mr. John J. Robinson Addresses Senior Class

Graduation exercises of approximately 179 members of the Class of 1942 of the Lowell Institute School, which is conducted under the auspices of the Massachusetts Institute of Technology, were held in Walker Memorial at 8:15 o'clock Wednesday, May 20, with John J. Robinson, president of the New England Telephone and Telegraph Company, making the address. Dr. A. Lawrence Lowell, president-emeritus of Harvard University and sole trustee of the Lowell Institute School, presented the certificates of graduation. Dr. Samuel C. Prescott, Dean of Science represented President Karl T. Compton of the Institute and Professor Charles F. Park, director of the school, presided.

Established in 1903, the Lowell Institute School has offered free courses in mechanical, electrical, and building subjects for more than a third of a century. It was founded to meet the increasing need for evening school courses to give skilled workmen an opportunity to receive an education in the application of science to their work.

The Tech Is Rated As "Good" By A.C.P.

The Tech, official news organ of the Technology undergraduates, has received word that the newspaper has again been classified as "good" in the Associated Collegiate Press classification. The paper has been awarded this Honor Rating several times in the past few volumes.

The collegiate ratings are based on many counts, including size of the school and frequency of publication. Some of the points in which The Tech excelled are news coverage, vitality, contents of news stories, typography, editorials, and the coverage and display of sports stories. Judges for the yearly rating were graduate students of journalism and active writers for middle western papers.

Women Can Learn War Engineering In Summer Session

In recognition of the rapidly expanding engineering opportunities for women in war industries, the Institute announced today a summer session course in War Production Practice for women. The course, which will cover a period of seven weeks beginning June 8, will be given in the Institute's Department of Business and Engineering Administration and is designed to qualify women for national service as war production aides in manufacturing establishments.

To qualify for the course, students must be between twenty and thirty years of age inclusive and must have had at least two years of collegiate work in which emphasis on the sciences is preferred. Experience in working with people is a desirable background for this new course.

The subjects to be covered by this course include factory production, accounting, planning and scheduling of factory output, mechanical drawing and interpretation, time and motion study, as well as visits to industrial plants and practice demonstrations in machine tool, foundry, welding, mechanical processing, testing of materials and power laboratories.

The program was planned after consultation with a group of representative war manufacturers and is designed to give students working facilities in four fields, namely; record-keeping, technical sketch-making, production control activities, and work simplification methods.

Beaver Key Soc. Elects Officers

Future Sports Plans Discussed At Meeting

The last meeting of the Beaver Key Society, held last Wednesday in Room 10-200, resulted in the election of three new officers and forming of intramural athletic plans for this Summer and next Fall, it was announced last night by Jack Gardner, president of the society. Waldo F. Davis, Jr., '43, was elected vice-president, and Gilbert S. Graves, '43, was elected secretary. Steven H. Brown, '44, was elected chairman of the committee to receive visiting teams.

Gardner also announced that questionnaires have been sent to all fraternities, dormitories, student residents, in an effort to determine what intra-mural tournaments the students would be interested in participating in during the Summer, softball being among the most important. The questionnaire may also determine how the houses and dormitories are lining up for softball teams, since one softball team requires more members than those

(Continued on Page 4)

Intensive Summer Program Will Aid Nation's War Needs

Army and Navy Officers Will Probably Form Largest Contingent

There will be no let-up in the war efforts of the Institute this summer when it will be engaged to the limit of its resources in research and education in fields vital to the advancement of the nation's war program, according to an announcement of its summer program yesterday. In addition to the accelerated program for Seniors, who resume their regular work early next month, the Institute will conduct a number of special conferences, offer special courses related directly to the war efforts, and will enroll what will probably be the largest contingent of Army and Navy officers for special training.

Members of the class of 1943 will pick up their normal work following a brief vacation and, barring unforeseen developments, will be graduated next February, four months ahead of schedule.

The first of several summer conferences will get underway on June 19 when the Institute will be host to the national meeting of the Applied Mechanics section of the American Society of Mechanical Engineers lasting two days. Special problems on applied mechanics and the strength of materials as related to war production will be the highlight of this meeting.

A special conference on Fire Protection Engineering, sponsored by the M.I.T. Department of Building Engineering and Construction and the School of Architecture in cooperation with the National Fire Prevention Association will be held on June 22, 23, and 24. Industrial and consulting engineers, architects, building and fire officials, civilian defense leaders, and sec-

ondary school teachers, are invited to the conference.

The tenth summer conference on Spectroscopy and its Application, which attracts scientists from all parts of the country, will be held on July 20, 21, and 22. This summer's conference will be sponsored

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The Tech Will Distribute Special Convocation Issue

The Tech will distribute a special complimentary issue on Saturday morning, May 23, at the Institute Convocation. The issue will contain the speech of President Karl T. Compton and other matters of interest to the student body.

Dramashop Will Select Students Who Are Willing To Make Sacrifices To Act

"Dramashop will depend for its existence upon students who get real pleasure out of acting and who are willing to make sacrifices in order to act," said Professor D. M. Fuller, faculty head of Dramashop, student dramatic organization at the Institute.

During its history, this organization has passed through nearly every phase possible for an activity. It was started in 1927 when several students approached Professor Fuller with the idea of starting something to replace the annual Tech Show. Within a few years it had reached the status of a Class A activity, putting on at least two plays a year from the start to the present.

After surviving for about a year and a half as a Class A activity, it discovered that it was becoming more of a social than acting or-

Dr. Compton Will Explain New Plans For Service In Nation's War Effort

Second Convocation Of Year To Be Held In Great Court Tomorrow at 10:40 A.M.; Announcement Will Be Important

The complete details of the new Army Enlisted Reserve Corps as well as other programs for service to the nation will be announced by President Karl T. Compton at a convocation of the student body in the Great Court tomorrow morning at 10:40 A.M. The announcement of this plan open to freshmen, Sophomores, and Juniors, will be of utmost importance to all members of these classes. President Compton is also expected to discuss Technology's place in the present war effort, and to explain the connection of the new plan with the selective service act.

The relation of Institute students to the various enlistment plans offered by the Navy will also be explained at this time, as will other plans for students in the war. Doctor Compton is also expected to discuss the general military situation from the point of view of technological education and from that of service in industry as well as in the Army and Navy.

As was announced yesterday, classes are to be dismissed at 10:40 A.M., at which time the class bells will be rung. As the announcement will be brief, classes will be resumed as usual at 11:05 A.M. Since convocations are held only for matters of extreme urgency, the attendance of all students is important. The message will probably be the most important one of the year for Institute students.

The last convocation was held on December 19, at which time President Compton announced that the Seniors would graduate on April 29, and explained the other phases of the speed-up program. It was at this time that it was determined that freshmen and Sophomores should work in war industries during the summer, and that Juniors would go to school during that time.

The first convocation was originally scheduled to be held in the lobby of Building 7, but was moved to the Great Court when it was found that the weather would permit. These are the first convocations held in several years.

Solons Grant Class A Rating To Debaters

Institute Committee Reinstates Expelled Class Representatives

Voted a Class A activity by the Institute Committee at its meeting last night, the Debating Society becomes the first new activity to be recognized as such in many years. Strongly recommended by a committee of five solons, headed by Kenneth R. Wadleigh, of the M.I.T.A.A., the change boosted the debaters from a conditional Class A status under which the organization has been running the past year.

The Society is now entitled to permanent representation on the Institute Committee, which position is now held by George M. Musgrave, president of the organization.

At the same time, the Institute Committee reinstated the representatives of the three undergraduate classes who were removed last month. The three classes, 1943, 1944, and 1945, had full representation present, and each individual assured the solons that he would attend regularly thenceforth.

Activities Removed

Grogo, Scroll, and Woop Garoo, formerly honorary publications' societies, were removed from undergraduate recognition. It was pointed out that the activities had been dormant since their dissolution by Gridiron over a year ago, that their work was being accomplished by Gridiron, and that no officers have been elected for future activity. The Committee voted to officially dissolve these societies.

Course II-A Society was given the approval of the Institute Committee to make the following changes in its constitution: the secretary will have authority to manage the organization in the absence of the president; a forum was set at two-thirds of the active members; and a majority of those present at any meeting may pass old business.

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Physicists Elect Next Year's Heads

Officers of the M.I.T. Physical Society were elected at a meeting held last Wednesday. The new president for next year is John Reed, '43. Other officers are Irving Shaknov, '43, vice-president; G. Beckley Stearns, '43, secretary-treasurer; Andre M. Weitzenhoffer, '43, Senior Class representative; and Lawrence S. White, '44, Junior Class representative.

At the meeting it was decided to hold a party for students of all courses and faculty on Friday, May 29, the place as yet undecided. Admission will be twenty-five cents.

The Tech



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Rubber Shortage Will Be Solved With Synthetics And Grown Rubber

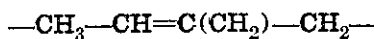
It is the unpleasant, yet incontrovertible fact that the "Gentlemen from Japan" are in possession at this moment of about ninety-five per cent of the world's sources of natural rubber. The strategic importance and the vital part that rubber plays in our national economy and war effort have been forcefully brought home to the American public recently. Fortunately, through the foresight and imagination of the Government a stock-pile of rubber was set up prior to the declaration of war. This rapidly dwindling source cannot be expected to last even with the present severe curtailment of civilian use, until after March 1943.

Plans have been made and partly put into effect to grow the rubber-producing Guayule shrub in the South-West of the United States, and to increase nature's rubber production in all parts of the Western hemisphere. Unfortunately, rubber growing is a slow and tedious business and it will be several years before we can expect any considerable quantities of natural rubber from home sources.

Synthetics are Main Hope

Our main hope for the speedy relief of the rubber crisis is synthetic rubber. The phrase "synthetic rubber" is misleading. No one has ever made a true synthetic copy of nature's produce, but rubber-like materials having elastic properties resembling those of natural rubber to a certain extent have been made by chemists.

Natural rubber is a complex physico-chemical colloidal system of empirical formula (C₅H₈)_x having a very high, though somewhat indefinite molecular weight. The molecules are long chains of the basic isoprene unit whose structure is:



It is a strange paradox that attempts to polymerize isoprene have resulted in very inferior products. Furthermore, no cheap and abundant sources of isoprene have been as yet found.

The commonly-called synthetics are nearly all polymers or co-polymers of butadiene or butadiene derivatives, or of chemically related compounds.

Neoprene Is Outstanding

The outstanding synthetic being produced today is neoprene. It has been manufactured by DuPont since 1931 and is probably the easiest of all synthetics to process. Suitably compounded neoprene products resemble crude rubber products very closely. Neoprene has the added advantage over crude rubber of being largely oil and gasoline resistant.

Neoprene is manufactured from acetylene, which is readily obtainable from the calcium carbides,

product of the electric furnace. Intermediate products are vinyl acetylene which on treatment with hydrochloric acid and isomerisation yields chloroprene which in turn polymerises to neoprene rubber.

50,000 Tons Neoprene

Neoprene however is not going to be produced in quantities larger than 50,000 tons a year according to the present program, because it is rather expensive (the present market price is about 70 cents a pound as compared with a normal price of crude rubber of 15 cents) and because certain critical raw materials such as chlorine are required for its manufacture.

The accent is being put on the butadiene type of synthetics at the present time. They are either polymers of butadiene itself or co-polymers of butadiene with styrene (C₆H₅-CH=CH₂) or with acrylonitrile (CH₂=CH-CN). The Styrene co-polymer is called Buna S and is according to all reports the best material for the manufacture of tire treads. The Germans, who are incidentally the originators of Buna S, have been using this synthetic for tires for a number of years. But even the Germans have never quite succeeded in manufacturing tires without the use of at least a small proportion of crude natural rubber. It has been variously reported that German synthetic tires contain as much as 40% natural rubber in the inside parts of the tire. This is mostly due to the fact that most synthetic rubbers (with the possible exception of Neoprene) have very poor adhesive properties. For this reason all pos-

sible efforts must be directed to increase output of natural rubber in the Western Hemisphere.

Our synthetic rubber program faces therefore the problem of providing sufficient butadiene to produce the 500,000 to 600,000 tons of Buna S which we are aiming to produce each year after 1943. The problem is staggering in its magnitude. It will cost the nation almost one billion dollars in capital investment. But the job can be done, and it has to be done. The engineering difficulties are tremendous but the raw materials are available.

How Butadiene Is Made

Butadiene can be made in a number of ways. Butadiene is a 4-Carbon straight chain diolefin hydrocarbon which is gaseous at room temperatures. One of the best known methods for manufacturing it, is the cracking of gasoline or crude oil at temperatures of around 700°C, followed by subsequent fractional distillation. One of the more serious disadvantages is the fact that the petroleum products remaining can no longer be made into high-octane gasoline for aircraft fuel. Moreover when made from petroleum products it is difficult to free the butadiene from last traces of impurities which are apt to interfere seriously with the subsequent polymerization process.

A less well known method is the simultaneous catalytic dehydration and dehydrogenation of Ethyl alcohol. The alcohol used can be crude and can be distilled from any freely available farm products such as potatoes, grain, molasses, etc.

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LET THE COURSES PLAY

Beaver Key's summer intramural sports program will undoubtedly involve some problems concerning the collection of fraternities under team groupings if the old system of organization according to residential groups is followed. It would be unfair to ask the individual fraternities with only seven or eight Juniors to compete against the dorm teams which will be at full manpower, and it will be difficult to group the fraternities in a manner satisfactory to all concerned.

An obvious solution would be an entirely new program in which the courses instead of the residential groups participate. Most courses are large enough to field at least one team no matter what the sport may be. The smaller ones could be grouped together with less trouble than could the fraternities, the larger ones could be divided alphabetically or otherwise into more than one team.

FINALS—#?/%*—

Each year at some time or other, The Tech directs a fiery plea to Institute officials for the abolition of final examinations. Volume LXII refuses to break this custom and selects this issue, the last before the advent of the dastardly finals, to contribute its bit to the movement.

"Should M.I.T. abolish final examinations in the interest of progressive education to increase the effectiveness of its engineering instruction?" is the question we would like to place before the Institute, its administration, and its students. Each year as a professor outlines his course, he almost invariably expresses his regrets that a final will be given in the subject and excuses himself by adding that final exams are one of the necessary evils of the modern educational system. If these statements have been made with sincerity, we feel that they form a basis for intelligent investigation of the problem.

Without exception, everyone will admit that a final examination has more faults than just the fact that the students dislike to take them. Consequently, the solution of the problem can be found in the determination of the disadvantages and advantages which the system offers. Because it will be necessary to overcome the natural tendency to keep that which is already established, any change that is to be made must be considerably better than the present set-up to warrant its adoption.

The most inherent evil of the final examination is its encouragement of shirking during the fifteen weeks of the regular term. The student who thus depends on the final to pull him through with a passing grade finds himself in the proverbial cramming session the night before the quiz and without knowledge of the subject two days later. Even though he may receive a passing grade, the student does neither himself nor the school's reputation any good.

Many schools have adopted a system of several comprehensive examinations during the term, which cover all the material that has been considered up to the time of the particular quiz. According to this plan, the last examination of the series would in effect be a final but would carry no more weight than the others.

Some students may object on the grounds that a final gives them a chance to raise a potentially poor grade. However, the three or more quizzes of equal weight would give the student that many chances to prove his ability over a period of time and would do away with the possibility of his fumbling the whole course simply because he was nervous or psychologically unfit to perform at his best on the day the final was given.

With a series of progressive examinations which he knew were to constitute the major portion of his grade, a student would naturally make a much greater attempt to assimilate the material as he went along. And he would, consequently, be gaining considerably more useful knowledge from his courses.

Straight 7's Eclipsed



Contributed by the American Society of Magazine Cartoonists.

PRESIDENT COMPTON ADDRESSES CONVOCATION



President Karl T. Compton is shown delivering his momentous address in the great court of the Institute before a convocation of staff and students on December 19, 1941.

Five Tech Men To Compete In I.C.4-A Meet

Tracksters: Wareham, Menev, Hall, Stewart, Miller to Make Trip

With the New England Track and Field Championships cancelled this year, Oscar Hedlund, track mentor, is planning to send five men from the Beaver track squad to the annual I.C.4-A championship meet to be held on the 29th and 30th of May in Randalls Island Stadium in New York City. According to present plans the entries will be: Bob Menev in the 220 and 100, Captain-elect Sid Hall in the 880, Bob Miller in the mile, High Scorer Larry Stewart in the low hurdles, and Dick Wareham in the hammer throw.

The New England meet has been the real goal of Tech teams in the past, so a comparison of the accomplishments of the Beaver cinder-men with those of rival schools might prove interesting. It was unfortunate that the meet was cancelled since the Tech tracksters have been turning in fine marks throughout the spring season.

The outstanding performer of the member colleges in New England competition is Bob Morcum of New Hampshire, who has vaulted 14 feet, jumped 6 feet 4 inches, and reached 23 feet in the broad jump. Outstanding competitors from other schools are Gilson, hurdler from Holy Cross, Hillman, mile and half-miler from Bowdoin, Nichols, present I.C.4-A two-mile champ from Rhode Island, and Sisti and Morro in the weight events from Boston College.

Outstanding among the Beaver men who have been performing well this year is Bob Menev, who last Saturday equalled the long standing record of Dick Bell, set in 1932 when Menev ran the 100 in 10 seconds flat against a brisk wind. Also in the Colby meet he did the 220 in 21.9 seconds, one-tenth of a second short of the mark set by Bellon on the fast Harvard Stadium cinders. Sid Hall raced over the double furlong (440) in 50.5, one-half second short of Doug Jeppe's mark of 50.0. The last of this trio of star Soph performers is Dick Wareham, who has thrown the 16 lb. weight within 6 feet of Dandrow's hammer throw record of 20 years standing. The accompanying chart gives a comparison of the best New England marks with the best marks set by Beaver athletes during the spring season.

Lange and Nelson Will Captain Team

Because the Class of 1943 will graduate next February, not allowing those Seniors who are on the tennis team to play next season, Ben Lange was chosen honorary captain of the team, while Ken Nelson was elected regular captain. Monty Wunsch was appointed varsity manager of the Beaver Racqueteers. These elections, freshman numerals and varsity letters were made at the annual tennis team banquet, which was held last night at 6:00 P.M. in the Dutch Room of the Graduate House.

It was also revealed at the banquet that an informal program of intercollegiate tennis matches has been arranged for this summer. Dick Stern, this past year's varsity manager, is to coach the team, and he has requested that anyone desiring to play in these matches get in touch with him. The first match will be held on June 16, against B.C.

Track Summary 1942

Events	New England	Best In '42	M.I.T.
120 H.H.	14.6	14.6	16.3
220 Yds. L.H.	24.4	24.4	24.8
100 Yds.	9.8	9.8	10.0
220 Yds.	21.9	21.9	21.9
440 Yds.	49.3	49.3	50.5
880 Yds.	1.55.5	1.55.5	2.03.0
Mile	4.27.3	4.27.3	4.38.6
2 Miles	9.49.8	9.49.8	10.26.9
Shot	51' 3 1/4"	51' 3 1/4"	39' 8 1/2"
Discus	151' 6 1/4"	151' 6 1/4"	112' 6"
Hammer	166' 1"	166' 1"	152' 7 3/4"
H. Jump	6' 4"	6' 4"	5' 11 3/4"
B. Jump	23' 6"	23' 6"	20' 7 1/2"
Javelin	183' 7 1/4"	183' 7 1/4"	169' 2"
Pole Vault	13' 5 1/2"	13' 5 1/2"	11' 6"

Awards For Crew Given At Banquet Last Wednesday

The annual crew banquet was held last Wednesday, May 20, in Pritchett Hall of Walker Memorial. The guest speakers included Mr. Ralph T. Jope of the Alumni Association, Professor George Owen, Marshall McGuire, '42, last year's varsity crew captain, Dr. John A. Rockwell of the Advisory Council on Athletics, head coach Robert Moch, and freshmen coaches James McMillan and Patrick Manning. The toastmaster for the evening was Carleton F. Bryant, '43, manager.

T's with crossed oars were awarded to 30 upperclassmen, while freshman numerals were awarded to 31 oarsmen. Marsh McGuire was awarded the McCurdy trophy, and the Molinar trophy was given to Patrick Manning by his lightweight crew. The recipient of the scholarship trophy given by Coach Bob Moch was Carleton F. Bryant, '43, who also gained this honor last year.

In appreciation of the work their coaches put into teaching them, members of the various crews gave gifts to the coaches. Jim McMillan received a \$25 war bond, and Patrick Manning was given a heavy sheepskin coat for the cold weather encountered on the river. The banquet was closed after moving pictures of last years crews were shown.

SOLDIER SAILOR OR STUDENT

—whatever your role may be in the war program, physical fitness is an essential! That means a diet that includes a plentiful daily supply of milk . . . at least one pint every day. Whiting Milk Company is proud indeed to be serving Technology. This fine, old New England company guarantees you that its products represent the finest in flavor, freshness and quality.



WHITING'S MILK
Quality for a Century

Beaver Feats

BY GARD SLOAN

Choose-Up Boats

Will Race This Summer

On June 8, when summer school starts, Pat Manning will begin crew activities for all those with the slightest interest in rowing, whether they have had experience or not. The whole idea of the thing is pure enjoyment, to row for the fun of it.

In general on Mondays the boys will get together and choose up teams. The teams will decide what times they wish to practice and how much they want to row. Occasionally, perhaps even once a week, races between the boats will be run, a mile or the henley being the distance. No varsity cliques will be allowed, probably no weight requirements will exist, and all the equipment will be available. This non-compulsory rowing will enable crew men to keep in condition, but the idea is to row for the fun of it.

Oscar Hedlund and Bob Bowie To Keep the Cinders Flying

Starting June 8 either Oscar Hedlund or Bob Bowie will be on Briggs field to greet any man who would like to do a little track or field work.

The activities during the summer will depend on what the fellows want to do, but Oscar has in mind special handicap meets, relays, and pentathlon meets in which the entry must compete in five events.

Oscar has not had a chance to tabulate the results of the questionnaire which was circulated at the track banquet, or to draw up definite plans, but we are certain that with Oscar Hedlund and Bob Bowie out there, there will never be a dull moment.

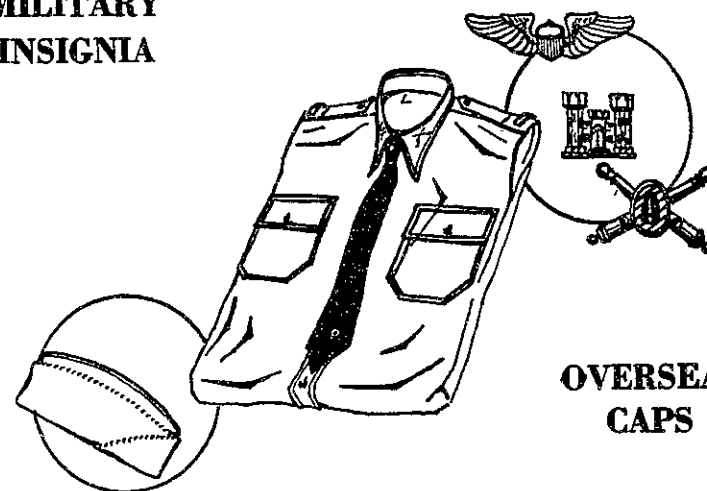
Sid Hall Elected Captain Of Next Year's Tracksters

Sid Hall, '43, was recently chosen captain of the Beaver track squad for next year, according to an announcement made by Oscar Hedlund, track coach.

Hall, who hails from Concord, New Hampshire, is an outstanding quarter miler, recently coming within one half second of the Institute record of 50.5 seconds for that distance. Also a member of the indoor varsity mile relay team, Hall is entered in the I.C.4-A meet to be held in New York.

OFFICER'S SHIRTS and SHOES

MILITARY INSIGNIA



OVERSEAS CAPS

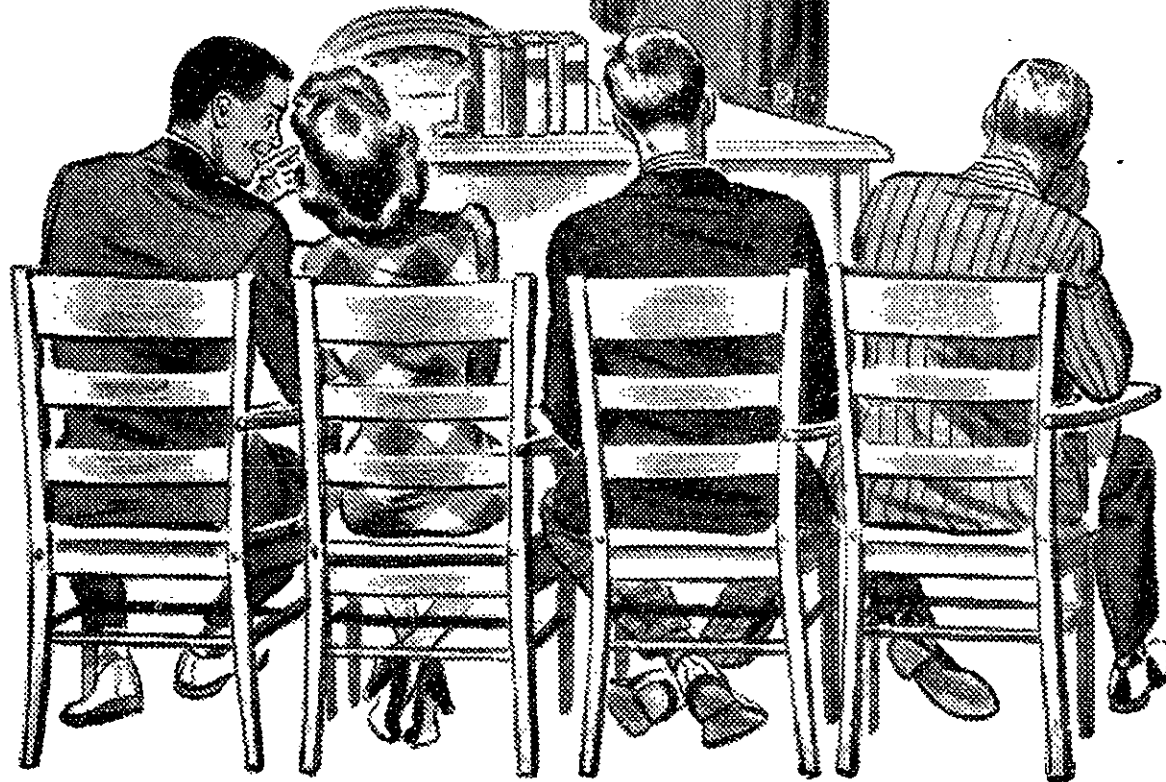
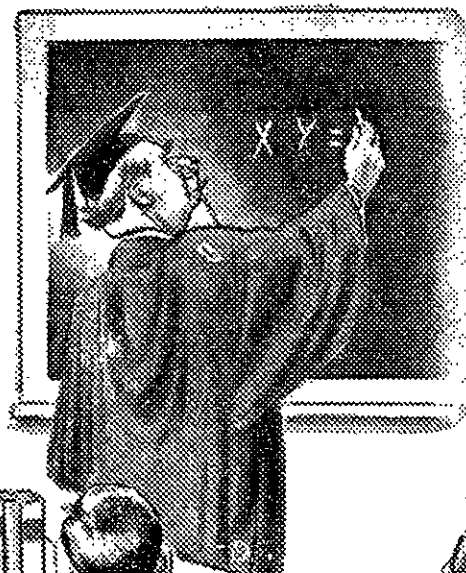
TECHNOLOGY STORE

DIVIDEND TO MEMBERS

DO YOU DIG IT?

MATHEW OPPENHEIM, BOSTON U. '42, GETS TEN BUCKS FOR THIS SLANG

"HEY, DILLY, WHEN ICHABOD CRANE DOES A HOUDINI, LET'S BLITZ THE JUNKMAN'S DELIGHT TO THE TOWN PUMP AND MILK THE WHITE PEPSI-COLA COW!"*



*ENGLISH TRANSLATION

Joe Phibetakappa is suggesting to his fellow inmate that, as soon as class is over, they hop in the car and hurry down to the campus hangout where they can slip a jit or two into the Pepsi-Cola Cooler. That's nice thinkin'—and plenty nice drinkin'.

WHAT DO YOU SAY?

Send us some of your hot slang. If we use it you'll be ten bucks richer. If we don't, we'll shoot you a rejection slip to add to your collection. Mail your slang to College Dept., Pepsi-Cola Company, Long Island City, N. Y.



Pepsi-Cola is made only by Pepsi-Cola Co., Long Island City, N. Y. Bottled locally by Authorized Bottlers.

The First Church of Christ, Scientist

Falmouth, Norway and St. Paul Sts., Boston, Massachusetts
Sunday Services 10:45 a. m. and 7:30 p. m.
Sunday School 10:45 a. m.; Wednesday evening meetings at 7:30, which include testimonies of Christian Science healing.
Reading Room — Free to the Public, 333 Washington St., opp. Milk St., entrance also at 24 Province St.; 84 Boylston Street, Little Building, Street Floor; 60 Norway St., corner Massachusetts Ave.; 1316 Beacon Street, Coolidge Corner. Authorized and approved literature on Christian Science may be read or obtained.

O.C. Announces Summer Plans

Rock-climbing, Camping Head Activity List

Intending to excell its policy of supplying the type of recreation that Techmen enjoy the Outing Club promises a summer program as prolific as was its winter one. During the past year a dozen varied types of trips and activities have attracted more than three hundred students. The summer months will see the Outing Club members horse-back riding, canoeing, camping, bicycling, rock-climbing, hiking, and on beach parties. There are to be several expeditions per week-end, it was announced.

To introduce this activity to those who must remain here this summer, a tri-party trip to Blue Hills is planned. One group is to hike, another is to cycle, and a third to ride. All will assemble for a food, singing, and campfire before the departure for home. This excursion is to be held Sunday, June 14, and all students are welcome.

Those who have no exam next Monday may be interested in a joint trip with Wellesley this Sunday. Horse-back riding will be the feature of the morning and canoeing that of the afternoon. Supper also is to be served.

The cost of this trip is one dollar for the riding and 75 cents for the supper and canoeing, exclusive of transportation. All interested should sign up in the Lobby of Building 10.

Prospective members of the Outing Club may also join at the desk in the Lobby. Dues of two dollars entitle one to membership until June 1943.

Beaver Key Elections

(Continued from Page 1)

expected to be at any one fraternity during the summer. This will necessitate two or more fraternities combining for the purpose, the teams having no restrictions for participation of graduate students and lettermen.

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Institute Committee Reinstates Members

(Continued from Page 1)

Appointment Approved

The appointment of James P. Buchanan, '44, as manager of Field Day for 1942 was approved by the Committee. The final Junior Prom report was read and the Freshman Prom report was read and accepted. The former showed a profit of \$1.15 and the latter a net profit of \$49.10. It was also voted to suspend the by-laws requiring the publishing of the agenda, the lists of absentees and late-comers of the committee for the summer term, as it was pointed out that The Tech will not be published in the summer.

The following students were reinstated after automatic expulsion a month ago: John F. Burke, '45; Langdon S. Flowers, '44; Robert H. Horsburgh, Jr., '45; James A. Leonard, '45; James A. Malloch, Jr., '43; Robert A. Plachta, '44; Robert S. Reebie, '43; George A. Schutte, '44.

Walker Committee Open

The meeting, begun at 5:20 P.M., concluded at 5:47 P.M. Meissner, Metzger were absent, Schaefer and Warden sent proxies, and Maxwell was late. It was announced that the Walker Memorial Committee would be open this summer at least two evenings a week, the date to be decided upon later.

George M. Musgrave, representative of the Debating Society, has drawn up plans for amending the present attendance rules. The proposed amendments were automatically tabled until the next meeting, but will be enacted upon then. The amendments will replace old sections 2 and 3 of Article VII.

Additions to Constitution

Proposed Amendments to Institute Committee Constitution are: ARTICLE VII (old sections 2 and 3 eliminated).

SECTION 2. A member of the Institute Committee must attend two out of any three consecutive meetings in person; if he fails to do this he automatically loses his seat on the Committee. Duly authorized proxies may be sent at any time, but only under the following circumstances will these proxies be accepted in the member's place for purposes of this attendance rule: (a) A member who is ill and out of school may send proxies for the period covered by his medical excuse, provided the medical excuse is shown to the secretary, (b) Members who participate in those inter-collegiate sports at which attendance is essential, and which conflict with Institute Committee meetings, may, if granted permission by a majority of the Committee, send proxies for the duration of that sport, (c) If any unusual extenuating circumstances occur which prevent a member from attending a meeting in person, and if the member makes every effort to see that a proxy takes his place at the meeting, the other members of the Institute Committee may, by a two-thirds vote, excuse that absence.

Proxies are required to observe the same attendance rules as the members they represent. A member who

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Passenger-Driver Service Arranged

Students with Cars Will Aid Those Wanting Rides

The T.C.A. is again sponsoring its passenger-driver service for students who are leaving school after examinations, Robert E. Cooper-Smith, '44, announced last night.

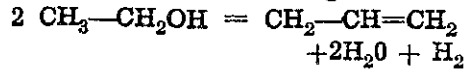
Separate application blanks have been printed for drivers and passengers and may be obtained at the T.C.A. office. The driver blanks contain space for information pertaining to destination, date leaving, route, number of passengers desired, points passed through on the way, driver's name, address, telephone number, and any remarks he may wish to make. The passenger blanks will contain similar information, but has a space for amount that the passenger is willing to contribute towards defraying expenses of the trip.

Payments by passengers to drivers are against the law, and therefore only contributions may be made and accepted.

Synthetic Rubber Requires Butadiene

(Continued from Page 2)

Chemically speaking the reaction proceeds in the following manner:



Russia Uses Alcohol

This process is being used on a large scale in Russia and to a certain extent in Germany also, as far as can be judged. The Russian Rubber industry is reported to be producing more than 100,000 tons of synthetic annually by this process. The question of producing rubber from excess farm products is at this moment being investigated by a Congressional Committee in Washington.

There are other methods of producing butadiene, such as the one using acetylene as a starting material, but most of these processes are rather complex and have little economic future, at their present stage of technological development.

Thiokol and Butyl Rubber

There are also other synthetic rubberlike materials such as Thiokol and Butyl Rubber, but they are at present only of secondary importance. Butyl rubber which is a Standard Oil development can be produced rather more cheaply than the Buna type rubbers, and could in fact compete with natural rubber on the open market. It has however the serious disadvantage of not being capable of being improved in the same way as crude or Buna rubber can by the admixture of various ingredients such as colloidal carbon black and other reinforcing agents.

In assessing the qualities of synthetic rubbers from the point of view of durability and performance, it is well to bear in mind, that our knowledge and experience in the field is very limited. The quantities of synthetics available in peacetime have been very small, and the high cost of the materials curtailed the economic incentive and consequently the funds available for research into the problem have been rather limited.

appoints a proxy is responsible for the attendance of that proxy.

SECTION 3. An activity whose representative loses his seat on the Committee, may, by a two-thirds vote of the Institute Committee, be granted the right to choose a representative for future meetings of the Committee. Full representation for the activity in question may not be resumed until two-thirds of the Committee vote to grant this right.

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CALENDAR

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9:00 P.M. Lowell Institute Dance—Morss Hall.
10:40 A.M. Convocation—Eastman Court.

Doolittle

(Continued from Page 1)

post-war group of stunt flyers who were trying all sorts of tricks with planes to find out what they could do. Following several unsuccessful attempts to make a cross-country flight, one of which involved the death of an army flier, he accomplished the feat in a time of 21 hours and 19 minutes. He repeated this flight 9 years later, lowering the record again.

During his researches here at the Institute in 1923 and 1924, he engaged in much experimental work to obtain technical and scientific data used by aeronautical engineers and aviation medical researchers. Some of this work conducted at McCook field won for him the Army's oak-leaf cluster. Other awards and trophies to his credit include the Bendix Trophy, Schneider Cup, and the Harmon Trophy for the year's outstanding contribution to aviation, which he won in 1929. In 1940 he was President of the Institute of Aeronautical Sciences.

Doolittle found Army pay inadequate for his wife and two sons, and retired from military aviation in 1930. He found financial success in commercial flying, but he returned to active duty as a major in 1940. Last April 19, the day after the raid on Japan, he was promoted to the temporary rank of Brigadier General.

Summer Program

(Continued from Page 1)

jointly by the Institute and the Optical Society of America.

To meet the growing shortage of public health workers who are vitally needed in the armed forces and in civilian areas the Institute has announced a number of special courses and programs by its Department of Biology and Public Health. The initial phase of this program opens on June 8, when the first of two seven-week sessions begins. This program will qualify both men and women for special work in various fields of public health work.

In addition, the Institute is offering four accelerated programs for graduate students, leading to the degree of Master of Public Health or to the Certificate in Public Health. This program begins on June 8 and continues through February 6, 1943. One part of the course will be of special interest to public health engineers, and is open only to graduates of recognized schools of engineering. A second program is to be given for public health administrators and is limited to graduates of approved medical schools only.

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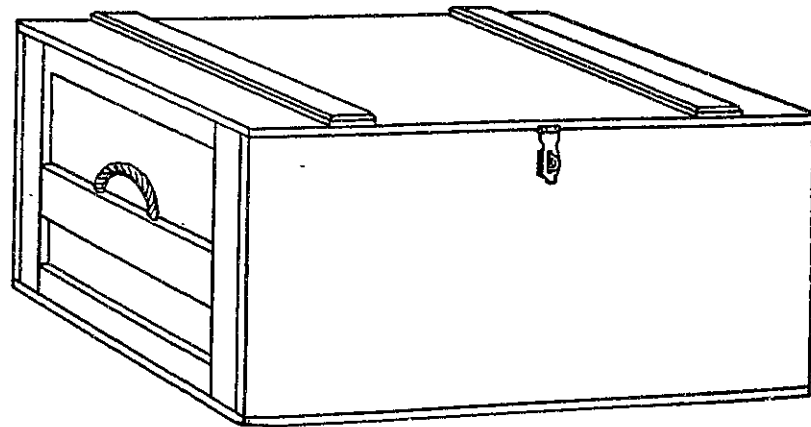
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