THE TECH

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THE OFFICIAL NEWSPAPER
OF THE M.I.T. UNDERGRADUATES

LATE STORY:

Two VI-A Men Win Rhodes Scholarships

Herbert D. Benington and Eugene B. Skolnikoff, both in their final year of Course VI-A, have been awarded Rhodes scholarships for 1950, it was announced yesterday. The scholarships provide tuition and other expenses for at least two years' study at an English university.

Thirty-two such awards are made annually throughout the United States. Of the scholarships given in New England this year, four were won by Yale men, three by Dartmouth, and two each by Harvard and MIT.

National Research Laboratories Utilize High Vacuum Processes

Situated right next door to Technology on Memorial Drive is a young corporation which has risen in a short period of nine years to become one of the nation's most outstanding research organizations and a leader in the field of high vacuum research. This organization is the National Research Corporation, and its president, Richard S. Morse, '33.

After only seven years out of college, Morse gained financial backing from a group of prominent New Englanders and founded National Research in 1940. Five years of research work with Eastman Kodak and a subsidiary had convinced Morse that a company which existed solely for research could carry it on much more effectively than a large industrial concern. N. R. C.'s history seems to prove he was right. Starting out in a vacant automobile showroom over on Brookline Avenue in Boston with an original investment of $50,000 and a Navy contract for coating lenses by a process developed at Technology, N. R. C. now has assets totaling almost a million dollars, occupies the brand new building on Memorial Drive to which they moved in 1947, and can be given credit for being the mother firm to at least one new company—Minute Maid Corporation in Florida, which manufactures the now popular frozen orange juice. In fact, this last achievement was the final act in the development of a policy which N. R. C. claims as a permanent thing. That is—to develop processes which can then be turned over to other companies which nets N. R. C. a handsome royalty) of the frozen orange concentrate each day, and there are already two other competitors in the field. According to Fortune Magazine, close to 30% of Florida's orange juice for the 1949-50 season will pass through vacuum chambers.

The process by which orange juice is evaporated is merely a low pressure, low temperature boiling, but the number of applications for the process are enormous.

Penicillin Dehydration

Orange juice was not the first, nor the most important use to which low pressure, low tempera-

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better qualified to manufacture and market a product. Not only was the setting up of Minute Maid Corporation the final act in developing a permanent policy, but it was also the perfect example of that policy.

N. R. C. Receives Royalty

In 1945, backed by N. R. C. capital, brains, and equipment, Vacuum Foods Corporation was organized at Plymouth, Florida. Two years later, after the production of the frozen concentrate was well under way, N. R. C. relinquished its one third interest in the company, and Vacuum Foods obtained new working capital from other sources. That same year the name was changed to Minute Maid Corporation. At the present time Minute Maid is producing 1,700,000 of the six ounce cans (each can of

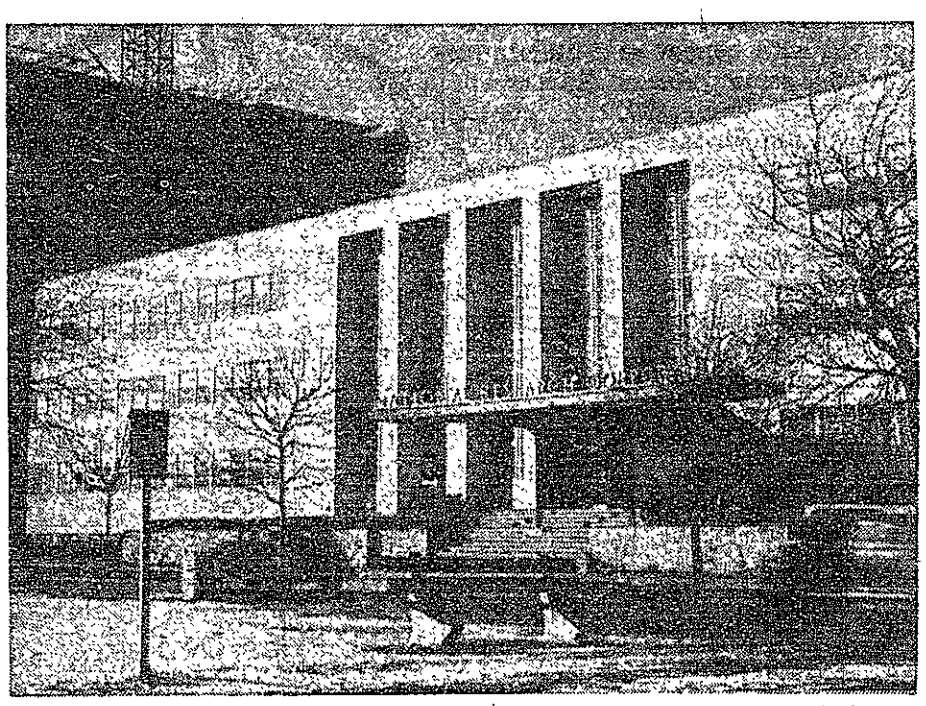

Photo by Frederick Cohen

The Memorial Drive Home of the National Research Corporation

Open House Set For May 6; Three Committees Organize Department, Activity Exhibits

The doors of the Institute will be thrown open to the general public Saturday, May 6, on the occasion of M.I.T.'s 16th Open House. These plans were announced last Friday at the first general meeting of the Open House Committee.

Between thirty and forty thousand people are expected to visit the Institute that day; the hours will be from noon till 7:00 p.m. Each department will present dynamic exhibits illustrating the latest technological advances. These exhibits will stress the close bond between modern science and the man in the street. The various student activities will also participate; their role will be to show that MIT is a school as well as a scientific institution. A track meet, a crew regatta, and a baseball game will highlight the athletic program for the day.

Open House is being organized by a student committee under the chairmanship of N. B. Champ, Jr., '50. This committee, together with a faculty advisory committee under the chairmanship of H. B. Kane will be responsible for all planning. The organization has been divided into the phases of presentations, publicity, and receptions. Howland A. Larsen, '50; George Piness, Jr., '50, and Charles W. Davis, '50, have been appointed vice-chairmen in charge of these groups. Mark H. Baxter is Secretary-treasurer.

Prior to the war, Open House was a bi-annual affair, and present plans call for a continuation of this tradition. The 1950 Open House will be the second since the war. Since Open House is primarily an undergraduate project, the committee wishes to encourage participation by as many students as possible. It is hoped that as many freshmen and sophomores as possible will come out for the committee, as they will be responsible for the 1952 Open House.

Fire Drills Planned For Dormitories

Grad House Emptied In Three Minutes; Dorms Will Be Next

In view of the increasing number of fires in college dormitories and other school buildings and in an effort to increase the safety of dormitory residents, Mr. Frank M. Baldwin, Director of Dining and Housing Facilities, and Mr. Mark J. Dondero, safety engineer here at the Institute, announced that plans for fire drills in the campus housing units are now being tested.

"One fire drill was held recently in the Graduate House," Mr. Dondero stated. "All of the men were out of the six-floor structure in three minutes, which was no small feat for a building of that size."

Drills Planned for Dorms

Projected plans call for drills in the Undergraduate Dormitories, New Dormitory, and Building 22. Although actual dates for these drills have not been set, plans for them are being brought to completion as quickly as possible. Both Mr. Baldwin and Mr. Dondero hope that action such as this will make residents as conscious of the hazards of dormitory and other housing unit fires as are administration officials.

With the advent of the fire drills, the fire-safety program here at the Institute is approaching completion. Mr. Dondero, from his office in the basement of Building 24, controls the fire protection of the entire Institute through a large map of all Technology buildings and the surrounding factories. Not only does the map indicate water hydrant locations, but also the type of material the building is built from and the date of construction, the size of water mains supplying the sprinklers, and the contents of the building.

Double Safety for 22

Special precautions have been taken to make highly inflammable Building 22 as safe as possible. In addition to the large number of

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Low Temperature Effects Discussed In Collins' Lecture

The Society of Arts began its annual Popular Science lecture series Sunday with a lecture by Samuel C. Collins, Associate Professor of Mechanical Engineering, on "The Approach to Absolute Zero."

Professor Collins discussed and demonstrated some of the interesting properties exhibited by various substances, particularly gases, as their temperatures approached absolute zero (—273.16 degrees Centigrade). In the temperature range —150 to —273 degrees Centigrade, commonplace elements exhibit strange, and at first glance, inexplicable, characteristics. Mercury is solid and resembles closely lead, while lead itself becomes much harder. Copper and brass change little, becoming slightly tougher, but steel is quite brittle and can easily be shattered like glass. Rubber, also, assumes a glass-like rigidity.

One of the most important of these effects is so-called superconductivity. This property is evident in certain metals, particularly lead, at a temperature of approximately seven degrees absolute, and simply means that the electrical resistance of these metals becomes very nearly zero.

This means that if an electric current is set up in a closed circuit of lead wire maintained at this

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Pencil-Sized Light Beam Being Used To Predict Acoustical Properties

Institute students, combining their talents in architecture and acoustics, may help end that annoying experience of sitting in an audience most of which is not able to hear the principal speaker.

Trying to predict the acoustics of an auditorium before it is built, one group of students has studied the behavior of a pencil-size light beam reflecting from the highly-polished ceiling of a twelve-inch auditorium model. Now, another group is at work using "beams" of sound in a simplified one-fifth size auditorium model.

Estimate Acoustics

The goal in both instances is to make a very quick estimate of some acoustical properties of an auditorium even before the room is built. If simple tests show that sound from the stage will not spread adequately over the entire proposed room, plans can be altered (and tested again) before construction begins.

The method involving the light beam is based on the fact that (within certain limits) sound waves reflect from a wall in much the same way that light rays reflect from a mirror.

Thus a beam of light is made to take the part of sound waves. Reflected off mirrored panels in the model, the light shows what would happen to sound in the full-size auditorium.

Student Experimenters

The beam's path is recorded as a dark streak on a photographic paper. Thus, if the light source is at a violinist's position on the stage of the model auditorium, the streaks on the photographic paper show exactly where the sound of his violin would go.

The graduate student experimenters, whose "light beam" technique was the result of a class assignment in architectural acoustics, are Scott W. Lyons, Daniel M. Streissguth, William Tamminga, and Clifford F. Young. All are now engaged in architectural practice.

Actual Sound Waves

Such an "optical analysis," they reported, saves the tricky graphical manipulations which are needed to study sound distribution from blueprints by more conventional methods. It gives better precision and—if perfected—could save time. The cost of designing acoustically correct rooms should be lowered appreciably, the researchers said.

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Edgerton Elected To Eta Kappa Nu

Professor Edgerton, it was announced last week, has been elected to membership in Eta Kappa Nu, an honorary electrical engineering society. Professor Edgerton is familiar to all Technology undergraduate students for his many pictures which have been included in Frances Sears' **Principles of Mechanics, Heat and Sound.**

Edgerton is a graduate of the University of Nebraska, class of 1925. He came to Technology in 1927 and has become well-known for his research in stroboscopy and high-speed photography here at the Institute. According to a statement issued by the Beta Theta Chapter of Technology, the election of Edgerton was largely due to the fact that beyond his many technical accomplishments he has shown a constant and active effort to promote student-faculty relations at the Institute.

M.S. Department Appoints Six Master Sergeants

The Military Science Department has announced the lists of men promoted to cadet non-commissioned officers.

Appointed as Cadet Master Sergeants are Juniors Robert O. Bentley, Robert R. Archer, Stephen J. Chamberlain, Robert L. MacCallum, Joseph N. Sherrill, and William L. Maini.

Appointed as Cadet Sergeant First Class are Juniors James E. Roberts, Jerrold D. Title, Thomas R. Friedrich, Richard G. Lock, John O. Champeny, Breene M. Kerr, William Seiler, Daniel E. Magnus, William L. Benfer, Herbert Dessner, Alexander B. Magnus, Howard A. Mills, Reuben Maine, Thomas Magnelsdorf, Kenneth H. Weifenbach and Francis J. Davis.

Appointed as Cadet Sergeant are, sophomores Robert L. Harding, Albin A. Gesek, Richard S. Valpey, Robert W. Damon, Todd L. Wyman,

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T.B. Seal Sales Up; Tech Men Thanked

Cambridge Tuberculosis and Health Association extended its thanks to Technology students this week for their generous response to the Christmas Seal Campaign, from which the association draws 90% of its operating funds.

Emphasizing the dependence of anti-tuberculosis campaigns upon money derived from Christmas seals, the Committee in charge of Sales, headed by Dr. Donald S. Tucker, Professor of Economics here at the Institute, asked, and will continue to ask, that each person give as much as possible.

Locating the cases of tuberculosis and educating the public on general health problems takes up 50% of the association's funds. Another large item is the expense of rehabilitating the patients after they have been released from the sanitoriums.

The Tech

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IF THIS BE BIAS, MAKE THE MOST OF IT

Word has reached us that there is a strong impression among fraternity men that **The Tech's** editorial policy is anti-fraternity. The basis for this idea seems to be two editorials that appeared in the September 23 issue of the paper urging that the fraternities 1) pledge new men in the spring after they have been at Technology for nearly a year, and 2) accept the administration's proposal that they move into houses to be built for them on the campus with insurance company money. Neither of these suggestions, however, have any intrinsic anti-fraternity elements.

We are guided by two postulates in our attitudes towards the principle of fraternalism, 1) the interests and welfare of the student body as a whole is more important than the interests of the fraternities as organizations, and 2) fraternities are worthwhile only to the extent that they provide certain benefits and advantages to their members. The first postulate is simply an expression of the good, old democratic ideal of majority rule, and the second rejects as meaningless the concept of organization for organization's sake. Within the framework of these two axioms, we believe that fraternities can play an important part in Technology life; indeed, the statement is so obviously true that it seems presumptuous for us to make it.

Now, nobody supposes that adoption of the two suggestions will be easy; any change is difficult to a degree, if only because of the inertia that must be overcome. Altering the rushing system or moving the fraternities has all kinds of snags that will have to be ironed out. The thing to be considered, however, is whether the changes, when balanced against the obstacles that must be overcome, will bring benefits to the students and the Institute that are worth the effort.

Here is the point at which our opinion becomes debatable. We believe that the practice of snatching a major portion of the freshman class and removing it from campus life and contact with the rest of the entering group is reflected in the relatively poor turnout for extra-curricular activities and school-wide social events at Technology. The fact is that no other college we know of has rushing before the new men have started school. Many fraternities fear that should rush-week be delayed until the spring term, the whole year will be wracked by a cut-throat inter-fraternity competition for the most desirable pledges, but we fail to see how the present alternative of grabbing for new brothers in a hectic four days can be anything but a lottery in which as many good men are passed up as are pledged. It can be to the fraternities' benefit to wait eight months before pledging.

The arguments for housing the fraternities on this side of the river are much the same as those for delayed rushing. Again it is a matter of getting Techmen to live in a common community as well as go to the same school. The details of the architecture of the new fraternity buildings can be worked out to the satisfaction of all parties although, for economic reasons, certain concessions in the direction of larger living units will have to be made. Actually, should the Institute decide that on-campus housing is to be desired and plans a dormitory on its own initiative, the fraternities may very well find it exceedingly difficult to pledge enough members each year since many men will find the advantages of living right at Technology outweigh the sociability incentives of fraternal life. Once more, it would be to the ultimate good of the fraternities themselves, as well as the whole student body, for them to accept the principle of on-campus housing and to approach as broad-mindedly as possible the problem of designing suitable buildings.

It would give **The Tech** great pleasure to be able to report new IFC rushing rules next April.

Fraternity Findings

By Jim Stolley and Dave Bossen

By the time the week-end rolls around, most Tech men are ready to lay down their slide rules and test tubes, shake the dust off their party clothes, and spend the week-end forgetting about quizzes and all the other nasty things that go with school. This was especially true during the past week-end. The Miami Triad on Friday night and several topnotch parties Saturday night buried studies under an avalanche of good times.

Anniversary Celebration

About two hundred and fifty couples danced to the music of Brad Kent and his orchestra at the Triad. During the intermission, a group of eight girls from Smith, who call themselves the Smithereens, sang several numbers. Dean Baker and Mrs. Baker were celebrating their wedding anniversary that night so the band played the Anniversary Waltz in their honor. The dance Friday night added another success to the long line of Miami Triads.

Halo And Wings

Saturday night, the Pi Lambda Phiyer took off for parts unknown. The entrance of the house was decorated with a sleek rocket ship, while the inside was fixed up to resemble outer space. The top floor was heaven. There were the pearly gates, clouds, and an angel complete with halo and wings. The basement supplied the other alternative, Hell. Red lights, fiery walls, and very shapely devils completed the theme down there. One of Bob Norris' bands played for the party.

Ski Jump In Ski Lodge

Lambda Chi Alpha held their Winter Wonderland party the same night. Outside of the house, a snowman with flashing lights for eyes winked at the arriving guests. The inside of the house was decorated to resemble a ski lodge and in one room they set up a miniature ski jump. To drive out the winter winds, a punch aptly named Red Sneaker was served. Stephen Charles and his band played for the party. Bob Kraujalis directed the decorations and was in charge of the affair.

Last but not least was the Off Limits party at the Delta Tau Delta house. The Delts opened a typical French cabaret with sawdust on the floor and soft candlelight providing the romantic touch. Guests in French costumes completed an atmosphere straight from the back streets of Paris. Another one of Bob Norris' bands provided the music.

We'll take this opportunity to wish all of you a very merry Christmas and a happy New Year. Be good while you're home, and if you can't be good . . .

National Research Corp.

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ture boiling was put. In fact, the equipment used for evaporating orange juice is basically the same as penicillin dehydrating equipment developed earlier at N. R. C. This dehydrating process was offered during the war to penicillin manufacturers royalty-free and boosted production of penicillin tremendously. Drying time was cut 40 hours and the cost reduced 80% by the use of N. R. C. equipment. Today, this same equipment is being used in England, France, Sweden, Italy, Switzerland, and Australia and constitutes a large portion of all penicillin and streptomycin drying equipment in use. Blood plasma is another product to which high vacuum technique was applied with astonishing results.

Coats Zinc On Paper

On the high vacuum coating side of the picture, plastics, paper, glass, and fabrics may be coated with a layer of metal only three or four millionths of an inch thick. Almost any metal may be used. The production of electrical condenser elements by coating three millionths of an inch of zinc on very thin paper is now under way by Smith Paper, Inc., of Lee, Massachusetts, using National Research equipment. Horn buttons, name plates, and other plastic ornaments in many 1949 model cars were coated with copper and aluminum by the same process. Earlier, as mentioned before, N. R. C. coated lenses and prisms for the Navy with an invisible layer of magnesium fluoride to increase their light transmitting qualities. This was the company's first job when it was founded back in 1940, and it was through this process that N. R. C. gained its first experience in high vacuum coating. They improved greatly on the technique developed at MIT.

Location Provides Advantages

Five years later, in 1945, when National Research began its new building on Memorial Drive, many were prompted to ask, "Is N. R. C. moving close to Technology for a reason or is it coincidence?" The answer is simple and the reasons obvious. Yes, N. R. C. did move near Tech for a reason. For at Tech is available a wealth of experience and knowledge in nearly every field of science. Many research projects here parallel those of N. R. C. At one time or another various members of the faculty have served as consultants to National Research, and several of those working for N. R. C. have taken advantage of Tech's educational opportunities.

Mention of N. R. C.'s most recent development was saved for the last. In line with their present policy, N. R. C. is planning to do the same thing with apple juice as they did with orange juice. Apple Concentrates, Inc., was organized this fall for the production of frozen apple juice concentrate, and it is expected that operation of the plant at West Concord, Mass., will begin this season. The juice, claims N. R. C., will taste like pure fresh apple juice and not like the pasteurized product.

PLACEMENT LECTURE

"You and Your Opportunity" will be discussed by Mr. T. A. Boyd, General Motors Research Laboratories consultant, today, in Rockwell Cage.

This is one of a series of Placement Lectures intended primarily for Seniors and Graduate students, whose classes from 12:00 noon to 1:00 p.m. have been cancelled by the Faculty. Any other students who are free at that hour are welcome to attend.

Low Temperature

(Continued from Page 1)

temperature, the current will flow almost indefinitely. However, the presence of this current cannot be detected by the ordinary means of inserting a galvanometer in the circuit, because the instrument itself has internal resistance which would cause the current to cease very quickly.

This difficulty is overcome by detecting the magnetic field set up by the current flow, instead of detecting the current directly.

By using the low temperature of liquid air to lower the vapor pressure of water, Professor Collins caused water, which was partly frozen and containing bits of floating ice, to boil.

The next lecture of this series is scheduled for 4:00 p.m., Sunday, January 15. The topic will be "Modern Ships for the High Seas." The lecturer will be Admiral Edward L. Cochrane, LL.D., D.Eng., Professor of Naval Construction and head of the department of naval architecture and marine engineering.

CALENDAR OF EVENTS

DECEMBER 14 TO DECEMBER 20

WEDNESDAY, DECEMBER 14

Electrical Engineering Department. Staff Colloquium: "Laboratory for Insulation Research." Dr. Arthur R. von Hippel. Room 10-275, 4:00 p.m.

Metallurgy Department. Colloquium: "Chemistry of Copper Smelting Slags." Dr. Reinhardt Schuhmann, Jr. Room 2-390, 4:00 p.m.

Catholic Club. "Catholic Influence in Modern Affairs." Reverend Walter L. Flaherty. Eastman Hall, Room 6-120, 5:00 p.m.

Tech Model Aircrafters. "Experiences in Radio Control." Sture R. Blom. "U-Control Techniques." William F. O'Neil. du Pont Room, Building 33, 5:00 p.m.

American Society of Civil Engineers. Student Chapter. Dinner meeting: "Opportunities for Civil Engineers in the Construction Industry." Alfred T. Glassett, Executive Vice President, W. J. Barney Corp. Campus Room, Graduate House, 6:15 p.m.

American Institute of Chemical Engineers. "Textile Technology—the Chemical Engineering Approach." Professor Edward R. Schwarz. Room 6-120, 7:30 p.m.

THURSDAY, DECEMBER 15

Faculty Club. Luncheon meeting: "Foreign Policy and the Republican Party." Senator Henry Cabot Lodge, Jr. Campus Room, 12:00 noon.

Civil and Sanitary Engineering Department. Sanitary Engineering Seminar: "A Vital Part of Civil Engineering." Professor Rolf Eliassen. Room 1-390, 4:00 p.m.

Physics Department. Colloquium: "Nuclear Reactions and Nuclear Resonances." Dr. Victor F. Weisskopf. Room 6-120, 4:30 p.m.

Staff Players of M.I.T. Tryouts for March production, "Down in the Valley," and another selection to be chosen later. Emma Rogers Room, 8:00 p.m.

FRIDAY, DECEMBER 16

Technology Matrons. Christmas Tea. The Choral Group of Matrons and Dames will present a program of Christmas music. Husbands are invited. The President's House, 3:30 to 5:30 p.m.

Biology Department. Colloquium: "Considerations of the Mechanism and Kinetics of the Interaction of Thrombin and Fibrinogen." Dr. David F. Waugh and Betty J. Livingstone. Room 10-275, 4:00 p.m.

Mechanical Engineering Department. Seminar: "Fatigue Studies on Single Crystals of Iron." Professor Frank A. McClintock. Room 3-470, 4:00 p.m. Coffee will be served in Headquarters from 3:30 to 4:00 p.m.

Kappa Kappa Sigma. Dance. 5:15 Club Room, 8:30 p.m.

SATURDAY, DECEMBER 17

Chess Club. Final playoffs for team, and policy plan meeting. 5:15 Club Room, Walker Memorial, 2:00 p.m.

MONDAY, DECEMBER 19

American Institute of Electrical Engineers—Institute of Radio Engineers. Student Chapter. Smoker. 5:15 Club Room, Walker Memorial, 7:00 p.m.

TUESDAY, DECEMBER 20

Technology Matrons. The Bridge Group. Christmas Party. Emma Rogers Room, 1:00 p.m.

Acoustics Laboratory. Seminar: "A Continuously Variable Filter." Gunnar Fant, Royal Institute of Technology, Stockholm, Sweden. Room 20E-121, 4.00 p.m.

CALENDAR OF EVENTS

The Calendar will not be published for the next three weeks, December 21 to January 10. Material for the Calendar, January 11-17, is due in the Office of the Editor, Room 7-204, not later than noon on Thursday, January 5.

Reviews & Previews

I had the pleasure of hearing last Saturday at Jordan Hall a very fine presentation of the Messiah, under the auspices of the Combined Musical Clubs. The work, which I consider to be far and away the best piece of music ever written for the English tongue, was presented throughout with enthusiasm and technical proficiency that seldom slipped from a professional standard.

In particular, I enjoyed the choral work which brought out the magnificent beauty of some of the finest choral music ever composed with a good deal of verve and natural joy. Often in this sort of performance, there is a tendency for the male sections of the choir to completely overwhelm the female parts, but the singing last Saturday was pretty well balanced throughout the night; the girls really held their own.

Bass Solo Outstanding

Also, I particularly enjoyed Paul Matthen who sang the bass solo part. He has a deep, rich tonal quality to his voice, and he sang those long runs in a way that brought joy to my heart, not slurring a bit, but presenting each note carefully and cleanly. Sumner Crockett, who sang the tenor solo part, was a little less clean in his tricky passages, but he has a big voice that carried the part right along. I thought his "Thou Shalt Break Them" very fine. Helen McCloskey (alto) occasionally lacked the volume that the part demands, but was really quite beautiful in the melodic aria "He Shall Feed His Flocks." Willabelle Underwood (soprano) sang pleasantly and proficiently throughout, but now and then I sort of got the idea that she wasn't quite in the spirit of things.

Criticism of Orchestra

My only really major criticism of the evening, however, falls on the orchestra. During the first part, with the exception of the sections in which it accompanied the chorus, the playing was rather lifeless; proficient, but "square." They seemed to perk up in the second part, however, and got into the swing of things. (Maybe conductor Liepmann gave them a half-time pep talk.) Whoever played the trumpet part in "The Trumpet Shall Sound" did very nicely, too.

All in all, though, it was a very pleasant evening, and certainly one of the finest concerts the music clubs have ever given. It was a pity to see so many empty guest seats; I wonder if something couldn't be done about "no-show" guests? Oh yes, one other thing, it is very distracting to both audience and performer to have flashbulbs popping throughout the concert.

—F. V.

Bridge Club Tops Harvard In Team-Of-Four Contest.

Coming from behind on the final set of hands, the M.I.T. Bridge Club defeated Harvard in a team-of-four match held at the New Dorm last Thursday evening.

After Harvard had built up a lead of 1590 points on the first three rounds, the Tech team swept the final round to win by 1050 points. Other team-of-four matches are planned for the near future.

The Beaver Barks

by Leo Sartori

WHAT ABOUT TECH'S-A-POPPIN?

We should like to register a dissent against the criticism appearing in the editorial column last Friday, which expressed the opinion that Tech's-a-Poppin ought to be dropped from the Technology calendar. In our opinion, Tech's-a-Poppin is a worthwhile institution and deserves to be saved.

Admittedly, Tech's-a-Poppin is not perfect. The conduct of the beauty contest could certainly be improved to a point where less friends of the committee get to be finalists. Moreover, the Hex-a-poppin show, the weak part of the program for the past two years, could well be replaced by a more entertaining and better-planned endeavor. However, the argument that Tech's-a-Poppin ought to be scrapped because most of the athletic contests were lost this year does not seem to us very logical.

It's true that Engineer squads came out on the short end of the score in four of the six events in the abbreviated schedule, including the "major" basketball and hockey games. However, with the possible exception of Harvard in hockey, none of the weekend's opponents can by any stretch of the imagination be considered as "out of our class." B. U., for example, beat us in basketball by 20 points, but over the last decade basketball relations between the two schools have been on fairly even terms. (Last year, B.U. won the T.P. game, but the Engineer five later beat the Terriers on the latter's own court. The order might just as well have been reversed.)

The argument that T.P. has not caught on with the student body is refuted by the large attendance at almost all events. In fact, we might suggest that some means be adopted to accommodate a larger crowd at the basketball game in the future, since the present facilities

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Riflemen Win Two While Losing One

Top Norwich, Vermont; Beaten By Dartmouth

After winning their first two matches at home by record-breaking scores, the varsity riflemen had to settle for two wins out of three starts on their road trip last weekend. On Friday night the Engineers were upset by a hot Dartmouth team which fired 1372, their highest of the year, against Tech's 1359.

Tech came back Saturday morning to down Norwich University, a potential threat to the Engineers' title, by a score of 1381 to 1363. A strong Universiy of Vermont team then nearly gave the Beavers another loss on Saturday afternoon, but was edged out by a 1381 to 1378 count.

The match with Vermont supplied the most excitement. Tech, took an early ten-point lead when Allan Tanner, who was high Tech shooter for Tech in all three matches, scored a 286 on the first relay. Tom Breen then pulled his Green Mountain Boys to a five-point lead in the second relay with a sensational score of 291 points out of a possible 300. Frank Gauntt and Dud Hartung regained a five-point lead for Tech in the third relay with a pair of 276's. John Pasieka added a vital three more points in the fourth relay, shooting under extreme pressure. Vermont managed to gain five more points in the last relay, but it wasn't enough.

Summary:

M.I.T. at Dartmouth: Tanner, 280; Zartarian, 272; Robertson, 269; Champeny, 269; MacDonald, 269. Total, 1359; Dartmouth, 1372.

M.I.T. at Norwich: Tanner, 282; Hartung, 278; MacDonald, 276; Robertson, 273; Gauntt, 272. Total, 1381; Norwich, 1363.

M.I.T. at Vermont: Tanner, 286; Hartung, 276; Gauntt, 276; Robertson, 272; Pasieka, 271. Total, 1381; Vermont, 1378.

Nicholson To Lead Harriers In 1950

It was announced last week that William P. Nicholson, '52, has been elected captain of next year's cross country team, succeeding Sam Holland. Nicholson was a standout on this year's team and took the varsity's only first place of the season, coming in first in the Techmen's victory over New Hampshire.

The team, which won two out of three of its regularly scheduled meets, will be hit hard by graduation. Only Nicholson and Ed Olney will return from the group which ran in the New England Cross Country Championship.

Pistol Team Beaten By West Point Squad

Meeting a powerful West Point squad last Saturday, the Tech pistol team dropped an 83-point decision. Both the Engineers and Cadets got off to a bad start in the slow fire run, but scores picked up with West Point taking the lead in the timed and rapid match.

The high five scorers for Tech were: Billing, 246; Markey, 261; Von Muller, 240; Sames, 248; and Sargent 248. The five high for Army ran from 261 to 278 and gave them a total of 1326 against the Engineers' 1243.

Squash Team Bows To Wesleyan, 6-3

The Tech squash team absorbed its second loss of the season last Saturday afternoon, bowing to Wesleyan on the home courts. The final score was 6-3 in favor of the Cardinals.

Fernando Irigoyen, Gordon Rampy, and Pete Silveston garnered the only wins scored by the Engineers.

The summary:

Hentz (W) defeated Eckardt, 15-10, 15-9, 15-8; Jones (W) defeated Cotter, 15-8, 15-8, 15-10; Travis (W) defeated Drucker, 15-13, 9-15, 9-15, 18-14, 15-12; Irigoyen (M.I.T.) defeated Carney, 15-8, 15-9, 15-9; Ackerly (W) defeated Geisler, 15-11, 6-15, 15-9, 15-11; Rampy (M.I.T.) defeated Byron, 15-3, 15-7, 15-16, 15-11; Huang (W) defeated Namitz, 15-11, 15-8, 18-15; Silveston (M.I.T.) defeated Roy, 15-10, 15-9, 15-9; Keers (W) defeated Weatherbee, 15-11, 15-11, 8-15, 15-12.

Fire Drills

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sprinklers located in the building, two automatic high pressure water guns have been mounted atop Building 24 and directed down onto the roof of the Barracks. In the event of a fire of any great size, these guns would automatically pour tons of water onto the building.

Hoopsters Top New Bedford, 49-41, For Season's First Win

Varsity Maulers Bow To Harvard

Hansen Scores Pin; Frosh Lose, 20-17

Meeting a powerful Harvard team last Saturday afternoon, the Tech wrestlers went down to defeat by a score of 24-7, thus evening up their season's record at 1-1. The Beaver frosh were also beaten, by a closer count of 20-17.

In the 136 lb. class, Tech's John Hansen pinned his opponent for the only Varsity pin of the afternoon. This was Hansen's second straight pin of the season and seems to uphold Coach George Meyerson's convictions as to Hansen's promise for the future. Heavyweight Chuck Bading tied his opponent in the unlimited match to notch the only other Tech points.

In the Frosh meet, heavyweight Charles Seymour registered the fastest pin of the afternoon for any Tech wrestler, with 2:47, while Harvard's Adams scored a fast 1:40. Henry Meyers and John Moga also scored pins while Richard Landy earned a tie for the rest of the Tech points.

Varsity:

121 lb.: J. Kozol (H) decisioned S. Raymond (M.I.T.), 2-1; 128 lb.: D. Harnsberger (M.I.T.) forfeited to Abboud (H); 136 lb.: Hansen (M.I.T.) pinned Carter (H), Time: 6:41; 145 lb.: Smith (H) decisioned Callahan (M.I.T.), 4-2; 155 lb.; Sawyer (H) decisioned Haggerty (M.I.T.), 3-2; 165 lb.: Connors (H) decisioned Mitchell (M.I.T.), 8-1; 175 lb.: Keith (H) pinned Ferguson (M.I.T.). Time 2:22; Unlim.: Bading M.I.T.) tied Claffin (H), 2-2.

Team scores: Harvard 24, M.I.T. 7.

Freshmen:

121 lb.: Meyers (M.I.T.) pinned Tuleja (H). Time: 3:35; 128 lb.: Lee (H) pinned Taub (M.I.T.). Time: 4:31; 136 lb.: Iben (H) pinned Schmidt (M.I.T.). Time: 3:14; 145 lb.: Adams (H) pinned Lecar. Time: 1:40; 155 lb.: Buch (H) decisioned Ebling (M.I.T.), 6-2; 165 lb.: Moga (M.I.T.) pinned Clarke (H). Time: 5:14; 175 lb.: Landy (M.I.T.) tied brown (H) 1-1; Unlim.; Seymour (M.I.T.) pinned Davis (H). Time: 2:47.

Team score: Harvard 20, M.I.T. 17.

Tech Mermen Edged, 39-36

Final Relay Clinches Victory For Amherst; Two Tech Records Set

Despite breaking two records, the Tech mermen lost to Amherst last Saturday in a meet which was not decided until the final relay. The Lord Jefts won by the same score by which Tech defeated them last year, 39-36.

In the 300 yard medley relay, Plummer, Pines and Baker combined to clip three tenths of a second from the old record of three minutes and seven seconds which was set last year by Bob Pelletier, Dick Pitler and Bob Edgar. By finishing the 220 yard freestyle in two minutes and twenty seconds Frank Conlin broke his own record of two minutes, twenty and seven tenths seconds which he set last year. Conlin also took first place in the 100 yd. free-style.

Tomorrow night both the frosh and varsity will play host to the Harvard mermen at the Alumni pool. The frosh meet will begin at 7:30 with the varsities following at 8:45.

Summary:

300-yard medley relay—Won by Plummer, Pines, Baker (M.I.T.). Time—3:06.7.
220-yard freestyle—Won by Conlan (M.I.T.); 2, Stevenson (A); 3, Gittner (A). Time—2:20.
50-yard freestyle—Won by Edgar (M.I.T.); 2, Taite (A); 3. Keydel (A). Time—24:4.
Diving—Won by Conant (A) with 76.95 points; 2, Asche (A); 3, Lehman (M.I.T.).
100-yard freestyle—Won by Conlan (M.I.T.); 2, Stevenson (A); 3, Edgar (M.I.T.). Time—56s.
150-yard back stroke—Won by Plummer (M.I.T.); 2, Wasie (A); 3, Stanford (A). Time—1:44.2.
200-yard breast stroke—Won by Pines (M.I.T.); 2, Tonnessen (M.I.T.); 3, Herzog (A). Time—2:42.5.
440-yard freestyle—Won by Dittner (A); 2, Keydel (A); 3, Baker (M.I.T.). Time 5:19.9.
400-yard relay—Won by Stevenson, Tate, Hall, Schlanger (Amherst). Time—3:47.2.

Glantz Once Again Paces Tech Attack

Technology's cagers hit the winning side of the ledger for the first time last Saturday evening, downing New Bedford Textile by a score of 49-41. The Textilemen did not prove to be the soft touches they were expected to be, however, as they led at halftime and stayed within striking distance of the lead until the final moments.

Zone Defense Effective

During the first half the lead seesawed back and forth, as a zone defense thrown up by the home team seemed to stymie the Engineers' offensive efforts. Textile led, 24-21, at intermission.

The second half proved to be more of the same, until, with five minutes left to play, the Beavers rolled into high speed and went in front to stay.

Glantz Scores 13

Herb Glantz once again paced the Tech offense with 13 points, although scoring honors for the evening went to Fred Burke and Deny Moniz of the home team with 15 apiece. . . . Lou Morton and Hank Hohorst each chipped in with a couple of pivot shots to help the Engineers' attack. The Beavers were also in fairly complete control of the backboards through most of the game. . . . The refereeing was very close, with technical fouls called at the slightest provocation.

Summary:

M.I.T. (49)	G	F	P
Glantz, rf	6	1	13
Nacey	2	0	4
Hohorst, lf	1	2	4
Honkalehto	3	0	6
Morton, c	2	3	7
Garthe	3	1	7
Lee	0	1	1
Corrie, rg	1	5	7
Rorschach	0	0	0
Hong, lg	0	0	0
Herdman	0	0	0
TOTALS	18	13	49

New Bedford (41)	G	F	P
Blanch'd, rg	0	1	1
Bradley, lg	3	1	7
McCauley, c	1	1	3
Stevens	0	0	0
Moniz, rf	3	9	15
Schofield	0	0	0
Burke, lf	6	3	15
Silva	0	0	0
TOTALS	13	15	41

Beaver Barks

(Continued from Page 4)

at the Armory are evidently inadequate. The crowds both at the basketball and hockey games seemed to enjoy themselves, and cheered themselves hoarse despite the fact that both the Beaver five and six were trailing all the way. We haven't heard too many people suggesting that Harvard abandon football, despite the notable lack of success achieved by the Crimson grid forces last fall. And it seems to us that, as a social affair, T.P. fills a valuable spot in Tech's social calendar.

A few suggestions

So, instead of a match for burning up Tech's-a-Poppin plans, we might offer the committee the following suggestions: (1) clean up the conduct of beauty contests, making an effort to obtain some famous personalities to take part in the judging (like Dahl, the cartoonist, who supplied a lot of color two years ago); (2) replace the Hex-a-poppin show with a more professional enterprise, and (3) replace Harvard as a hockey opponent with a team like, say, Northeastern, which is more in our class but definitely not in the pushover category.

M. S. Promotions

(Continued from Page 1)

Irvin J. Grossman, Granger G. Sutton, John W. Deeds, Edward J. Margulies, Gerald F. L. Laufs, Peter H. von Hipple, Conrad F. Frey, Michael S. Sapuppo, Kenneth L. Churney, John D. Harris, Newell J. Trask, Stephen T. Learnard, Lowell W. Smith, William E. Levine, Bradford W. Edgerton, John R. Crowe, David L. Porter, Stanley H. Zisk, William Wardle, William J. Cavanaugh, Lawrence R. Krivit, Henry E. Kloss, Leslie W. Lane, Julius J. Kassig, Frederick I. Fickenwirth, John B. Mattson, Barett M. Bruch, Francis X. Spinelli, Charles A. Doverspike, Alexander A. Urling, Francis M. Frasher, Philip P. Crimmins, and Joe F. Moore.

Acoustics

(Continued from Page 1)

The other study, which involves measuring actual sound waves in a simple plywood auditorium model, is just getting under way. In this case a much larger model is required, but the resulting measurements may be easier, faster, and more complete.

High Pitched Sound

This "sound analysis" system is based on the fact that a high-pitched sound will behave in a small model just as a normally pitched sound will behave in the full-size prototype. In this case the model can be very simple—and thus inexpensive—while still giving all needed information.

These two systems are both recent projects of students in a graduate course entitled Architectural Acoustics. Under the supervision of Professor Richard H. Bolt, Director of the Acoustics Laboratory, and Professor L. B. Anderson, head of the architecture department, the class is guided by Robert Newman, an Institute graduate just beginning service on the architecture teaching staff.

Experimental Results

Combining research techniques with established principles, the students who devised the reflected-light-beam system used it to study the right kind of roof shape for a 1000-seat auditorium of fan-like floor plan.

In some places, they found, the sound from the stage reaches the audience on the auditorium floor directly. In other places it goes up to the ceiling and reflects back to the audience from there; in still others, sound bounces off from the rear wall.