

Class B Votes In Council

Two new groups, both fixing their attention on current social problems, were granted Provisional Class B status at last Thursday's Activities Council meeting, as five Class B activities took their voting seats for the first time in Council history.

Admitted were the MIT Student Association for Rational Approach to Disarmament and Peace (RADP) and the MIT Civil Rights Committee. RADP is an independent organization — not affiliated with SANE—which plans, among other things, to support a February demonstration in Washington which would involve about 3,000 students from all parts of the country.

Unlike RADP, the Civil Rights Committee is affiliated with a national group but plans various demonstrations and research projects as does RADP.

Debaters Score At Tufts, Dixie

At Tufts University, the first and Mary, Scranton, and Amherst. The combined 10-2 overall record of the Tech team was second only to Harvard, who suffered only one defeat.

Three days later the Society entered in the two-man division at the Dixie Classic tournament at Wake Forest in North Carolina. The two-man unit of Glen Books and John Morris finished 5th with a 4-4 record, recording wins over Duke, Virginia, Fordham, and Wake Forest. John Morris was awarded a trophy as second best speaker in the tournament.

Due mainly to scholastic consideration, the Society will be virtually inactive over the vacation and the month of January.

Frosh OK Quizbook Plan

A meeting of the MIT Freshman Council was held on Friday, December 13. The Walker Quizbooks, freshman questionnaires, a freshman dance, and the sale of Beaver Pins were discussed.

Students who bought quizbooks through the mail will receive without cost a second semester quizbook which Walker will publish. This agreement was made with Walker on Nov. 12. The book will be of better construction than the book distributed this summer, being similar to the Freshman Chemistry notes. Answers in the book will have been checked through in an effort to avoid error.

Freshman questionnaires were distributed to the section leaders for distribution to their sections. The completed questionnaires were returned by the section leaders at the next meeting of the council on December 13.

Dance Committee suggested an all day event in the Spring, possibly at Cape Cod. A dance the Friday night of Spring Weekend was also suggested.

The council did not feel enough information had been gathered to justify a decision for or against the sale of Beaver pins.

Ancient Rome Expert Syme Discusses 'The Myth of Political Salvation'

By Michael Weiss '65

Professor Sir Ronald Syme, British expert on ancient Rome, gave a series of 2 lectures to a large crowd last Tuesday and Thursday, December 12 and 14. The talks, given at Kresge were entitled "The Myth of Political Salvation," and "Roman Political Ideas Under the Early Empire."

In the first lecture, Professor Syme discussed the question of whether the last century of the republic, ending in 31 BC with the battle of Actium, was really a period of decline and fall as brought on by corruption, anarchy, and immorality, as is commonly thought.

Sir Ronald pointed out that this was not the case as this period was an age of energy and vitality. Rome was not exhausted and worn when the Republic fell, but was growing and expanding all over the Mediterranean area and into Gaul and Spain.

Corruption was widespread in government, and this was brought on by a variety of rea-

sons. Some men, like Cicero's close friend and brother-in-law, Atticus, had no desire to enter politics although they had money and connections. On the other hand, men like Caesar, Crassus, and Pompey had great desires for political power. As proconsuls, Caesar in Gaul, Pompey in Spain, and Crassus in Syria, these men had powers approaching those of a monarch, and these powers only increased their desire for control of the entire empire. The legions under the proconsuls developed strong loyalties for their leaders and gave them a strong weapon to use against the Senate, if necessary.

Trend Toward Monarchy
Not only did the proconsuls exhibit a trend toward monarchy, but the practice of the Senate of calling upon one man for leadership in times of crisis also reflects the trend. The Senate was composed of 600 men and was led by ex-consuls, about 35 in number. In times of emergency, this large body of older men could not make rapid decisions, so they called in a younger man. The very size of the empire itself was bringing out the flaws in the structure of the Roman government as the Senate could not handle all the provinces in the same manner. Rome did not get along well with some of the Italian neighbors, and, in 91 BC, a group of Italian states revolted and formed their own state with a capital at Tarracina, but Rome put down the rebellion.

Not Culturally Dead
Rome was not culturally dead

at this time, but exhibited a culture adopted from the Greeks. Lucretius and Catullus were poets of the late Republic, and Cicero was a great writer of prose. Vergil and Horace were poets of the same era who contributed a great deal to literature of the late Republic and early Augustan Age, although their works are filled with praise of Augustus.

Decline in Religion
About the only great decline in Roman life of the time in question was the decline of religion. Officially, the gods were still worshipped, but not by individuals. The Roman religion was an archaic and ritualistic system that began to decline in the second century BC. There is not much evidence existing indicating a common belief in the gods. Julius Caesar does not

Registration Material To Be Ready Jan. 4

Second term registration material will be available Thursday, Jan. 4. The Office of the Registrar recommends the following registration procedure: (1) Show registration card. (2) All regular students will be able to obtain their material in the Building 10 lobby from 9:00 to 4:00 After Thursday this material will be available at the Information Office. (3) Special students and new graduate students may pick up their material at the Registrar's Office after approval of their applications by the Admissions Office.

Merry Christmas

THE TECH



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5 Cents

T. S. Eliot Speaks Before Capacity Crowd Reads Own Choices

By Roger Weissinger '62

T. S. Eliot, a poet and playwright of international reputation, spoke and read before an enthusiastic capacity audience in Kresge auditorium last Wednesday night. Students, faculty, and everyone who could get a ticket filled the seats, the stage and a large section of the aisles.

Eliot introduced his readings by pointing out two distinct types of poetry—that which he liked to read and that which audiences enjoy hearing. Apparently feeling that MIT students are too uneducated to enjoy poetry, Eliot then announced that he would read the poetry he liked to read. By implication, this is the poetry audiences do not like to hear. Many Tech students did not realize they were being insulted.

Eliot then read selections from "The Family Reunion," "The Book of Practical Cats," "The Wasteland," and several of his shorter works, including "Preludes."

Throughout the program his voice seemed tired and unexciting, lacking the energy of 20 years ago when he was a dynamic and purposeful reader. Occasionally he prefaced his



readings with amusing and reasonably clever comments. Before reading "The Hippopotamus," a short poem comparing the church with the hippo, T. S. Eliot commented, "The next poem, which I enjoy reading very much, is not only blasphemous (maybe not strictly blasphemous), but irreverent to the church. I think the church I had in mind was the Church of England."

If there had been more of the Church of England in his audience last Wednesday night, he admitted, he would claim he referred to another church in his poem. This was Eliot at his funniest.

T. S. Eliot was born in St. Louis in 1888, and educated at Harvard, the Sorbonne, and Merton College, Oxford. While several of his poems were published as early as 1910, it was not until the appearance of "Prufrock and Other Observations" in 1917 that he received widespread recognition for his writing. However, he commented last Wednesday that he did not feel the "The Love Song of J. A. Prufrock" or similar poems of his were good writing.

M. E. Honorary Holds Banquet

The MIT Pi Kappa Chapter of Pi Tau Sigma, the national mechanical engineering honorary fraternity, holds its banquet and initiation in the Miller Room, last Wednesday. Two honorary and fifteen regular members were initiated.

The new honorary members are Professor H. G. Stever, new head of the Mechanical Engineering Department, and Professor Frank A. McClintock.

Nine members from the senior class were chosen: Albert Gleim, Ray Landis, Pete Ommundsen, Chuch Rein, Mike Terry, Hugh Thompson, Harold Waller, Ken Wang, and Dave Wormley. The six juniors selected were Crawford, Delmar Fehrs, Mike Finson, Adi Godrej, Bob Maskrey, and Dave Reiste.

INDEX

The next issue of The Tech will be published Jan. 10.

Bookworm	4
College World	2
Editorial	4
Entertainment	5-7
Sports	8-12

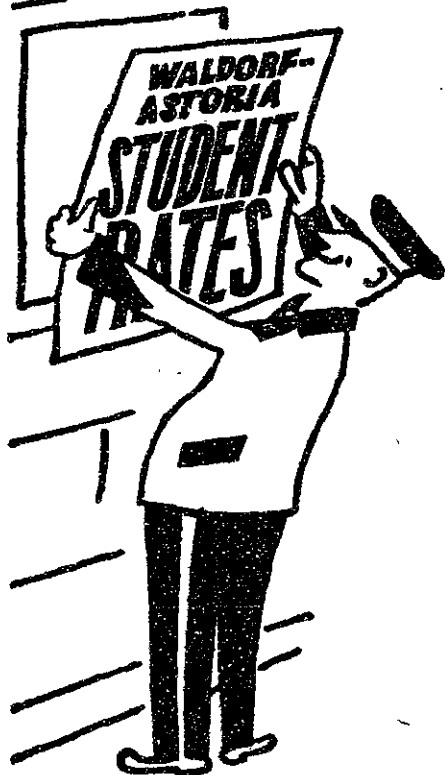
Invitation

President and Mrs. Julius A. Stratton cordially invite all students remaining on campus during the holidays to a Christmas Open House at their home, 111 Memorial Drive, on Friday, Dec. 22 from 4 to 6 p. m.

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College World

Do South African Lobsters Reside In South Africa Or North Atlantic?

Do you know where South Africa is? Probably, you say, it is the southernmost part of the continent of Africa. At least that's where it was the last time you looked at a map. Well, if lobsters are any indication, the location of South Africa is subject to considerable geographic change.

The details of the travels of South Africa have recently been reported in *The Record*, newspaper of Antioch College, Yellow Springs, Ohio. The menu of Yellow Springs' restaurant once featured "South African Lobster Tails." In protest against the racial policies of the South African government, however, the restaurant manager ordered this delicacy stricken from the menu and even persuaded the wholesaler to stop importing the lobster tails. A wave of protest from lobster-hungry Antioch students, however, led the manager to investigate the situation further.

It was at this point that the first voyage of

South Africa was arranged. South Africa, from the lobsters' point of view anyway, was moved to the island of Tristan da Cunha, 1800 miles off the coast of Africa. Here the islanders had so intermarried that racial policies were homogenous enough to satisfy every Antiochian dissenter. "South African" lobster was reinstated to the menu.

Happiness was not to last forever. Tristan da Cunha's volcano erupted, and the islanders had to be evacuated to London, where the Thames was found to be a very inadequate source of lobster. Indeed, the Charles, itself, would have been more abundant. Yellow Springs, for the time being, had to be satisfied with lobster from New England.

The British government has now announced plans to relocate the displaced islanders to one of the Shetland Islands, where they will be able to resume their lobster fishing.

World geography will again be changed as the restaurant manager has announced that in the future "South African Lobster Tails" will come from the Shetland Islands.

Last week it was reported that Michigan students had abandoned the science of telephone-booth packing and had turned toward the art of the "talkathon." This week's papers report that most talkathons are still going strong and that Eastern Michigan University has decided to participate in the "most hours" race. In Canada, however, a new approach has been taken to the science of telephone-booth packing. It has been refined, rather than abandoned. Students at the University of Alberta have gone in for cramming fallout shelters. It has practical applications, they say.

"Rackathon" Joins Talkathon

Meanwhile, back in Michigan, a new type of "most hours" race has been evolved. The brothers of Phi Gamma Delta at the University of Michigan have started what they call a "rackathon." The object is to have a specified couch occupied by a sleeping brother at all times. So far the record is 144 consecutive hours.

Also at the University of Michigan the School of Medicine is making news. It requested and received permission to change the name of one of its departments. Hereafter, the otolaryngology department will be known as the otorhinolaryngology department. In case you're wondering, the department deals with the ear, nose, throat, and related structures.

Going to Europe?

For those who want or need part-time jobs over Christmas vacation, once again the University of Michigan has come up with a solution. The following ad appeared in the classified section of *The Michigan Daily*.

"BARNICLE (sic) REMOVERS. Prefer students with strong toes and sharp fingernails. Your choice of \$2 an hour or 3c/barnicle. Travel to Europe while you work on side of spacious ocean liner. Planning on dropping out of school soon? Call Ted..."

Merry Christmas!

10 ROTC Cadets Honored

Ten MIT ROTC Cadets were presented certificates today awarding them the title of Distinguished Military Student. The group of seniors were presented the certificates by Colonel Irving W. Finberg, Professor of Military Science, before a Retreat Formation of the ROTC Battalion in the MIT Armory.

Those receiving honors were Gordon H. Jones, Oscar Orringer, Bardwell C. Salmon, Paul D. Abramson, Jr., Stephen J. Banks, Albert F. Gleim, Cadet Lieutenants Walter S. Cluett, Peter E. Thurston, Martin M. Homburger and Robert A. Lytle, Jr.

The certificates, signed by Lieutenant General Edward J. O'Neill, Commanding General of the First US Army, cited the students "for displaying outstanding qualities of leadership, high moral character, noteworthy academic achievement and exceptional aptitude for military service".

The designation of Distinguished Military Student is both a recognition for outstanding achievement, as well as an important consideration in gaining approval of applications for commissioning in the Regular Army.

can see the entire picture...the man who can draw on a broad background of knowledge, evaluate the problem, then assign the details to specialists.

The world of entertainment may seem somewhat special, but it's a case in point. These days, it demands more of its people than ever before. Today's musical comedy score is often as sophisticated as grand opera. Drama draws heavily on psychology and history. Television productions are concerned with nuclear science and political science. If you've ever watched 'Omnibus' you may have seen how our productions have run the gamut of a wide range of man's interests.

So I suggest to you that even though you may concentrate on one special field of interest, keep your viewpoint broad. Keep your college curriculum as diversified as possible. Attend lectures and concerts, the theatres and museums. Above all, read and read, and listen and listen! But pay scant heed to the oracle who says there's no route to the top but that of specialization. I don't believe it!"



Robert Saudek is the creator of many of television's most famous programs—including the award-winning "Omnibus" series. Former network executive and head of the TV-Radio Workshop of the Ford Foundation, Bob enjoys a "Camel break". He's been a Camel fan since undergraduate days at Harvard.

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At Weekly Colloquium

Photon Absorption Results Reported To Physics Dept.

By Tom Sheahan '62

The Physics Department's weekly colloquium, Thursday at 4:00 in 26-100, last week featured Dr. H. W. Koch of the U.S. Department of Commerce, National Bureau of Standards. Dr. Koch described current research at the bureau striving towards more precise measurements of "Photon Absorption Cross-Sections."

The earlier part of his talk was devoted to reviewing the general concepts relating to the experiments. In classical physics, the term "cross-section" implies a certain area presented by a target; in nuclear physics, only a vague semblance of this idea is retained. Depending on the energy of the photons being shot at nuclei, the "area" presented by the nuclei changes. Photons are not merely stopped or passed, but rather are scattered at various angles to the side. Measuring the distribution of scattered photons enables the experimenter to calculate the cross-section for a photon-nucleus interaction.

At the energies of interest to Dr. Koch's group, two types of photon absorption occur: Compton Scattering, in which the wavelength of the photons changes as they are scattered; and pair-production, where the photon, in the presence of the nucleus, generates a positron and an electron. As the photon energies increase, the Compton process becomes less probable, while pair-production increases; there are corresponding changes in the cross-sections for each type of interaction.

In a certain energy range (different for each element), the two probabilities (hence cross-sections) are about equal; some unusual effects occur in this range. In particular, a "giant resonance" appears, in

which the cross-section suddenly rises above its normal value in the range. The sharpness of the peak depends on a variety of factors related to the target nucleus.

Dr. Koch next described certain dispersion relations, in a necessarily mathematical form. Theory predicts that the cross-section for elastic scattering depends on the integral of the absorption cross-section over all frequencies. By measuring this integrated cross-section exactly, a good check on the theory can be made. The whole purpose of the dispersion relation is to relate the absorption cross-section to the scattering cross-section.

Turning from the blackboard to a large number of slides, Dr. Koch described the actual experiment in the final fifteen minutes. In the apparatus, a white light spectrum strikes a detector and absorber; large crystals of sodium iodide (9" long by 5" diameter) were used for this purpose. A coincident counter is used to improve the reliability of photon detection in the apparatus.

The results showed a fair energy resolution; in some cases the statistical weight of a large number of counts per point allowed a good calculation of the attenuation coefficient of the photon beam, leading directly to a value of the photon absorption cross-section.

Carbon and Beryllium are the two elements investigated most by Dr. Koch and his collaborators; he displayed slides showing results of test runs, the predicted "giant resonances," comparison of Beryllium with Carbon, similar data obtained by Soviet scientists, predicted energy-level diagrams, and an assortment of other results. Dr. Koch explained that by finding at what energy the resonance occurred, it becomes possible to make qualitative statements about the structure of the nuclei under investigation.

Dr. Koch closed by describing a new laboratory for this purpose operated by the National Bureau of Standards. Here a linear accelerator gives a high-intensity beam of high-energy electrons; the entire system is designed to permit a number of very unique experiments to be done.

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Course XIV To Offer 'Urban Life Structure'; Field Work Stressed

"The Structure of Urban Life" (14.99), a double credit (16 hour) course, will be offered by the Political Science Department this spring. The course is designed to give, through lectures, reading, and extensive field work, a feeling for what makes the political, social, and economic systems of major cities work. Subjects range from transportation, to crime, to urban renewal, to "suburbia," to party politics.

14.99 will be taught by Professor Robert C. Wood, assisted by Bradbury Seasholes.

Although 14.99 is the only limited prerequisite, the number that can be accepted is limited.

Eight to ten students from Dartmouth and Simmons will be registered. Anyone interested in taking the seminar should talk with Professor Wood (14N-233) before registering.

Field work comprises a large part of the course. Last year several students interviewed suburban government officials in the Boston metropolitan area.

Chairman Charles Muntz '62
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Unsigned editorials appearing in THE TECH constitute the opinion of the newspaper's Board of Directors, and not that of MIT. The newspaper welcomes letters from its readers. Space permitting, such letters will be printed in whole or in part, if deemed by the editor to be of sufficient interest or benefit to the community. Brevity increases the chance of publication. Anonymous letters will not be printed. Names will be withheld upon request.

Graduate Grades

Graduate admissions each year become the concern of the larger portion of MIT's senior class. Students whose cumulative average is between 3.0 and 4.5 are faced with the task of selecting a school which is likely to admit them and which offers the best program in their field. It is a sad reflection upon many schools that some of these people are excluded without a hearing. Graduate schools fall into two general types: those which have a cumulative average cutoff point, and those (like MIT's) which do not. A student who has earned a 3.2 in his four years at MIT will find that his application is not considered by a school which decides that a 3.5 is requisite for admission while his colleague from a state university is admitted with a 3.6. Since there are differences in the quality and difficulty in undergraduate education it seems unfair that many, if not the majority of graduate schools do not give consideration to this factor. From the standpoint of professional competence it is downright dangerous.

The ideal condition would be for each graduate school to give qualifying exams commensurate with their standards to all applicants. In the absence of this, the departmental weighing of grades and recommendations used here is probably best. But to think that either of these plans will be adopted is whistling in the dark. If MIT feels that its 3.5 represents a higher level of attainment on the scale of overall graduate applicants then it should do something to reflect this. Perhaps an adjustment upward of the mean would help, but this is not the whole answer. Over the years one hears of many radical proposals to change the grading system so as to maximize this factor or that. We do not suggest MIT should "soften up," but we do hope that the faculty which has shown itself willing to be open minded where knowledge is concerned will keep the same open mind to proposals which bear on this situation.

Russians

About two weeks ago, MIT played host briefly to a group of four visiting Russians who were nearing the end of a tour that had taken them to such places as New York, Washington, Atlanta, Chicago, Los Angeles, Madison, Wisconsin, and many more on their two month tour. The four Russians were Mikhail Nikitin, who spoke no English, Vladlen Dubovik, Yuri Kashlev, and Albert Belyaev, who did speak English quite well. They represented such groups as the Lenin Young Pioneers' Organization, the Student Council of the USSR, the Presidium of the Committee of Youth Organizations, and the Soviet Young Communist League.

Though representing youth organizations, they were not exactly the American Boy Scout type, all being in their late twenties or thirties. Albert Belyaev, a graduate student at the USSR Academy of Sciences was thirty-three. The conversations that took place with these people in the space of little more than an hour included such persons as Frank Osha, the UAP, Vijay Shah, chairman of the MIT Foreign Opportunities Committee, and a representative of *The Tech*. Even after six weeks of touring the United States, and visiting literally dozens of American colleges and universities, it became clear immediately there were enormous gaps in the Russians' understanding of this country. Some of the people who had been travelling about with the youth representatives expressed the opinion that the Russians just did not understand what was being said to them. This was not to mean they could not understand English, but that they could not grasp the thought patterns of Americans. Their spheres of thought and experience are totally different from ours, and they did not make the connection between what was said, and a real world.

It was incredible to them that American youth were not all members of some giant organization with a distinct party line and clear rules. There was no way for them to connect

American students with an ideology they could go back to Russia and explain to their respective organizations and superiors. Looking at the structure of MIT activities and student government, it was impossible to explain to them how things got done, for we have no orderly hierarchy, no neat lines of power and command. One tried to explain that there was no such relationship between the Editor of this newspaper and President Stratton, as exists between the Editor of *Izvestia* and Nikita Khrushchev, but it didn't seem to get very far.

With each of the Russians busily making notes in little books, some people tried to explain that Atlanta, Georgia does not epitomize American democracy, and that we are working to right the injustices to American Negroes. One cites the Stalin "cult of personality" as malfunctioning in the Soviet system, but is immediately assured that all is now righted, and such a thing could never occur again. And the Russians keep bringing the talk back around to Atlanta.

What did they like about this country? The friendly, interested people. And what didn't they like? The high prices, the lack of democracy, the discrimination. Would they like to live here? There is no place like Moscow, and they are anxious to get back.

Clearly, the problems of communication with the Soviet Union are very formidable. Mr. Belyaev is a student of American literature and had read virtually every major twentieth century American author, running from Upton Sinclair, to Farrell, to Sinclair Lewis, to Steinbeck, to Arthur Miller, to Mailer, to Capote and Salinger. (He admitted to having great difficulty with Faulkner.) One would have thought that he might have had a little more understanding of American society even just from his reading, than he evinced after six weeks' tour. Whether or not exchange visits with touring Russians is the answer to better Soviet-American understanding is going to remain a big question for a long time to come.

Wintering

The advent of cold weather is a sign of a number of things, among them the approach of Christmas, and the just as inevitable approach of final exams. In many ways, this is a period of mixed fortunes, of gloom and joy; in short, the best of times and the worst of times. For the skiers and skaters, the dead of winter is the most eagerly anticipated time of the year; for the person with aesthetic sense, there is nothing more beautiful than the sight of snow on the landscape. For the merchants of Boston and elsewhere, the Christmas goose is one that goes on laying golden eggs year after year, and the holiday season is to be heralded as soon as Thanksgiving is safely out of the way.

For the Bostonian however, the winter season leaves something to be desired. If scientists ever learn to control the weather, the first thing they ought to do is improve the climate of Bean Town, so that it no longer will seem as though it rains, snows, or sleets most of the time. Then no longer will the MIT student from California be able to say with such superiority that "it was seventy-five in LA yesterday," as he and everyone else slogs through the slush. Certainly one of the more depressing things about November and December in this area is the prospect of four more months of Winter.

For that special Bostonian, the student, the coming of winter means Christmas, but more important than that it means Christmas vacation. Now this celebration of the winter solstice among other things, is usually an unmixed blessing for the average student. Not only does it mean the traditional Christmas and New Years cheer, but for the nine out of ten students who have normal human failings, it is an opportunity, that very often goes untaken, to start studying the course that hasn't been touched since September, to bat out the all-important term paper, or just generally catch up. It is a breathing space before the deep plunge into final exams.

To the student who cannot afford to go home, to the foreign student who may be ten thousand miles from home, the sight of MIT can be most depressing indeed. Its silent, empty corridors, the deserted atmosphere, the bleakness and cold, are all too clear reminders of the distance to home. Some faculty members make an effort to entertain these students, to extend some of the holiday spirit to them. But it is never enough, there is always the empty room to come back to, the lack of company, the cold campus. There is little that can be done, except to hope that next year will be different.

There are very few however, who would give up the Christmas season, and the Board of Directors and staff of *The Tech* wishes all its readers the very best for the holidays and New Year.

Letters To The Tech

To the Editor:

Considering the magnitude of the parking problem at MIT, it appears that the Campus Patrol is doing a good job of enforcing the necessary restrictions and administering the paperwork.

In general, the attitude of the Institute towards parking offenders has been at least reasonable and, in many cases, more than fair. A first offense warrants a warning ticket, and cars are seldom towed without a previous warning letter to the offender.

In the face of a reasonable solution to a difficult problem, it is unfortunate to observe that a tumor has managed to survive through some miscarriage of the MIT organizational facility. This tumor exists in the form of the Student Parking Committee, a sort of "join us if ROTC won't take you" type of organization for leaders who can't find any followers.

The Student Parking Committee, composed of undergraduates living primarily in Burton House, is somehow vested with the authority to give out parking tickets to cars located in restricted areas around the dormitory.

In the first place this is a

job which the Campus Patrol could and would no doubt handle efficiently, given the opportunity. I suspect that certain members of the Campus Patrol have been fed up with the Student Parking Committee for some time since they are burdened with the task of collecting fines for tickets they are not sure are justified. In one instance a member of the "junior G-men" told a student his car would be "confiscated" if he didn't move it. I wouldn't blame anyone for getting angry, if some pipsqueak tells him he's going to take his car away. A little tact goes a long way.

In theory a student parking committee is not a wholly bad idea, provided its members have previously demonstrated their ability to act as responsible members of the MIT community. Up to now the members of this committee have been chosen on some other basis. That is all one can assume on the evidence of their totally childish attitude.

The simplest and most obvious solution to the problem is the elimination of this group. How it has existed this far is the mystery of the year.

R. Brian Strong '62

The Bookworm

SINCLAIR LEWIS

by Mary Gail Menzel

Several seasons back, the phenomenon of the "nonbook" was engaging the attention of the satirists, shoring up the fortunes of the publishers and finding gleeful acceptance as the staple of many a Christmas gift list. To some extent, we are still amply provided with a goodly supply of "nonbooks" for the animal lovers, amateur chefs, Jack Paar fans and do-it-yourselfers; But at the same time we are being introduced to a newer phenomenon, here defined as the "ultrabook."

Its major characteristics are (1) weight (or, in absence of an appropriate weighing device, number of pages); (2) volume of source material painstakingly pored over, decoded and finally collated and bound with suitable interspersing remarks by the author; and (3) years of research lovingly devoted by the author exploring his subject. It goes without saying that in each case the greater the quantity the more ultra the book. In fact, in deference to the scientific-minded reader, a simple formula might be used to help in classifying a borderline case: $wVt < K = \text{Ultrabook}$. Unfortunately, the value of K has yet to be determined, but perhaps some reader of this column might find in that quest a fruitful baccalaureate thesis.

Several recent examples of the ultrabook spring to mind: Shirer's "The Rise and Fall of the Third Reich," Swanberg's "Citizen Hearst," Aaron's "Writers on the Left: Episodes in American Literary Communism" and this article's present concern, Schorer's "Sinclair Lewis: An American Life." (Evolution may prove the colon to be a fourth characteristic in the title of the ultrabook.)

In this instance, the reader may be puzzled as to why Prof. Schorer devoted ten years to an exhaustive study (867 pages) of the life and works of Sinclair Lewis. There does not seem to be in the offing a Lewis Renaissance (though "Elmer Gantry" was revived as a critically-successful movie several years ago), and Prof. Schorer characterizes him in the final pages of his book as "one of the worst writers in modern American literature." The author has equally little affection for Lewis the man,

SINCLAIR LEWIS:
AN AMERICAN LIFE
By Mark Schorer
New York: McGraw-Hill

and treats his moral, social and alcoholic lapses with little sympathy.

However, to this reviewer, and to many readers of college age, the intellectual history of the period from WWI to WWII is a fascinating one, probably because we just missed being born into it. Though Schorer maintains that Lewis never had "one good and true friend," his acquaintances, correspondents and colleagues are virtually a catalogue of the intelligentsia of the era. The twenties and thirties were decades of intensely political writers, and though Lewis himself professed the cause of Eugene Debs and at one time was a resident of Upton Sinclair's Halicon Hall, his political views were muddled and he came close to the "America First" movement prior to WWII.

No writer in American history achieved the commercial success that was Lewis' in the twenties with "Main Street," "Babbitt," "Arrowsmith," "Elmer Gantry" and "Dodsworth." And probably no American writer could lay claim to having had a profounder influence on later literature. He exposed the small town, the businessman, the evangelist. He satirized provincialism and made a hero of the research scientist. He shocked his readers of the time and they grew to love their own caricatures. He defined America to Americans.

At the same time he was also the prodigious author of potboilers for the pulp magazines and seemed unable himself to distinguish his good work from his bad. Prof. Schorer, however, seems less than charitable in characterizing even the best of his short stories as "adequate for a college theme."

Perhaps the question of the *raison-d'etre* for this "ultrabook" is answered by its author. Prof. Schorer says, "without his writing one cannot imagine modern American literature. That is because, without his writing, we can hardly imagine ourselves." Surely a legacy worth bequeathing.

Lincoln Lab Finds Sun An Inefficient Radar Reflector

The first successful results in a detailed, long-term study of radar reflections from the sun were announced last week by the Lincoln Laboratory of MIT. The results of 32 radar measurements, made during the eleven-week period from April 19 to July 7, are reported in the December 1961 issue of the *Journal of Geophysical Research*. This work is part of the general research program conducted by the Laboratory with joint support from the U. S. Army, Navy, and Air Force.

First Regular Measurements
The measurements were made with a new VHF (very high fre-

quency) space radar system, recently installed by Lincoln Laboratory at a field site near El Campo, Texas, believed to be the most powerful VHF radar in the world. The first radar contacts with the sun were made by the Space Radioscience Laboratory of Stanford University on April 7, 10, and 12, 1959. The Lincoln Laboratory observations represent the first time that regular measurements have been possible over an extended period of time, and marks the start of a continuing systematic measurement program.

Waves Penetrate Corona
The radar echoes come from the solar corona, an irregularly shaped atmospheric layer that surrounds the visible ball of the sun, which is called the photosphere. Unlike the thin layer of atmosphere around the earth, the thickness of the corona observed by radar is comparable to the radius of the photosphere itself. The radio waves pene-

trate some distance into the corona, and a considerable amount of the energy in the radar signal is thus absorbed, causing the returning echoes to be weaker than they would be from an efficient reflector.

Corona Fluctuation Studied
The effective size and shape of the corona, and the way its reflectivity grows and diminishes in response to sunspot activity, is a subject of great interest that can be studied systematically and in some detail by long-term radar measurements. Present observations on a "quiet" sun indicate that radar echoes were obtained from regions as much as half a million miles out from the photosphere. It is expected that violent solar activity causes the effective size, shape, and intensity of the corona to fluctuate greatly. Indications of very large fluctuations have already been observed.

Radar measurements on the

sun differ, in one important respect, from radar observations on solid targets like the moon and the planets. On a solid target, radar signals are reflected from a well-defined surface, and range measurements can be made with great precision, because the speed of radio waves in space is very accurately known. On the sun, the radar signals penetrate the tenuous gases of the corona to considerable depths, and at a slower speed. Because the reflection process is thus distributed over a considerable depth of the corona, and because of the immensely turbulent and irregular shape of the corona, the radar returns from this "soft" target are more complex than they would be from a "hard" planetary surface. The purpose of these radar measurements of the sun is to obtain information about the nature and extent of electrical phenomena and disturbances in the solar corona, rather than to establish a precise measurement of the distance from the earth to the sun.

Half-Million Watts
Lincoln Laboratory's VHF space-radar system is built around an exceedingly powerful radio transmitter, in combination with a large but straightforward and economical array of simple dipole antennas. The

transmitter operates with a continuous output power of 500,000 watts, ten times greater than the largest broadcasting station in the United States. It was developed for Lincoln Laboratory some eight years ago for experiments in ionospheric scatter radio communication.

The powerful signal from the transmitter is applied to an array of 1024 dipole antennas in eight rows, fifteen feet apart and about one-third of a mile in length. This antenna array concentrates the transmitted power in a single, tight, fan-shaped beam, fifteen degrees wide in the east-west direction, and only three-quarters of a degree thick in the north-south direction. (The visible disk of the sun, called the photosphere, subtends an angle of about half a degree when viewed from the earth.)

16-Minute Barrage

In each radar run on the sun, the transmitter operates continuously for 16 minutes. The radar signal, travelling at the speed of light—about 186,000 miles per second—takes about 8 minutes to travel 93 million miles to the sun, and the radar echoes take another 8 minutes on the return trip. After 16 minutes, as echoes begin to come back, the transmitter is turned off, and the receiver goes into operation for the next sixteen minutes, picking up the radar returns reflected from the sun. The fan-shaped beam of the antenna array is aimed at the target by electrical adjustments on the connections to the individual dipoles.

New Year Brings Fine Selection Of New Plays Rolling Into Boston Area

Boston play-goers will be able to choose from four major plays being presented here after Christmas vacation: "Giants, Sons of Giants," "The Music Man," "Irma La Douce," and "Old Vic."

Giants, Son of Giants, a new play by Pulitzer Prize-winning Joseph Kramm, opens a fortnight's pre-Broadway engagement at the Wilbur Theater on Tuesday, Dec. 28. It stars Nancy Kelly and Claude Dauphin.

The Music Man, Meredith Wilson's internationally popular musical comedy, opens a limited engagement at the Shubert Theater on Tuesday, Dec. 28, with Forrest Tucker in the leading role.

Irma La Douce, following successes in London and Paris and on Broadway, and featuring Taina Elg, Denis Quilley, and Joseph Bova, comes to the Colonial Theater Jan. 4 for a 2½ week run. This is the musical comedy of an innocent young French girl beset by men on the make.

Old Vic—the world-famous Shakespearean players in seven performances of "Romeo and Juliet" Tues., Jan. 16 thru Saturday, Jan. 20, with matinees Thursday and Saturday, at the Donnelly Memorial Theater. Advance mail order sales have been heavy. The first box office sales will be at Filene's mezzanine beginning Jan. 2.

During the 16-minute transmitting period, the transmitter operates continuously, at its half-million-watt power level, at a frequency of about 33.25 megacycles per second. In order to dig the reflected radar returns out of cosmic noise, and to distinguish the returns from the radio noise generated by the sun itself, a particular frequency pattern is impressed on the transmitted signal, by switching the signal frequency up or down very slightly (8 kilocycles, or only about 0.02 per cent of the operating frequency) at eight-second intervals. The up-down switching pattern is irregular (pseudo-random) but carefully controlled to permit identification of the desired signal when the recorded radar returns are analyzed.

Lloyd Berkner Is Lincoln Labs Lecturer



Lloyd Berkner delivers third Lincoln Laboratory Lecture, "Communications", in Kresge Auditorium Monday Evening, Dec. 11.

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① How important is it for the U.S. to be the first to reach the moon?

Crucial
 Important but not crucial
 Unimportant

② Would you mind dating a girl who's taller than you?

Yes No

③ Do girls think it's wrong to always smoke their dates' cigarettes?

Yes No

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Important	44%
Unimportant	10%
Yes	43%
No	57%
Yes	53%
No	47%

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theater... Drama Shop Presents 'Entertainer'

The Dramashop production of "The Entertainer" was, barring some poor singing, excellent. It was a production of much higher caliber than most people would think the Institute capable of. The play's message was conveyed very well by Mike Meeker as Archie Rice, and the scenery was almost professional in design.
Archie Rice is the son of a famous music-hall entertainer, Billy Rice. His father left the business as it was beginning to wane, and Archie, following blindly in his father's footsteps, will not admit that the music hall is dying, that it is becoming one of those relics of the past like the speakeasy. His attachment to this life is indicated by the rather smooth scene shifts from the music hall stage to his own home, indicating that the two are really one in the same. He really lives the part of "the entertainer."

THE ENTERTAINER, by John Osborne, music by John Addison, directed by Joseph Everingham, costumes by Helen Bottomly, Dances by Esther Brooks, lighting by Joseph Hankin, settings by James Dorr.
THE CAST
Billy Rice Richard Hornby
Archie Rice Michael Meeker
Jean Rice Faye Dunaway
Phoebe Rice Joan Tolentino
Frank Rice Leonard Rubinstein
Georgous Gladys Norma Anderson

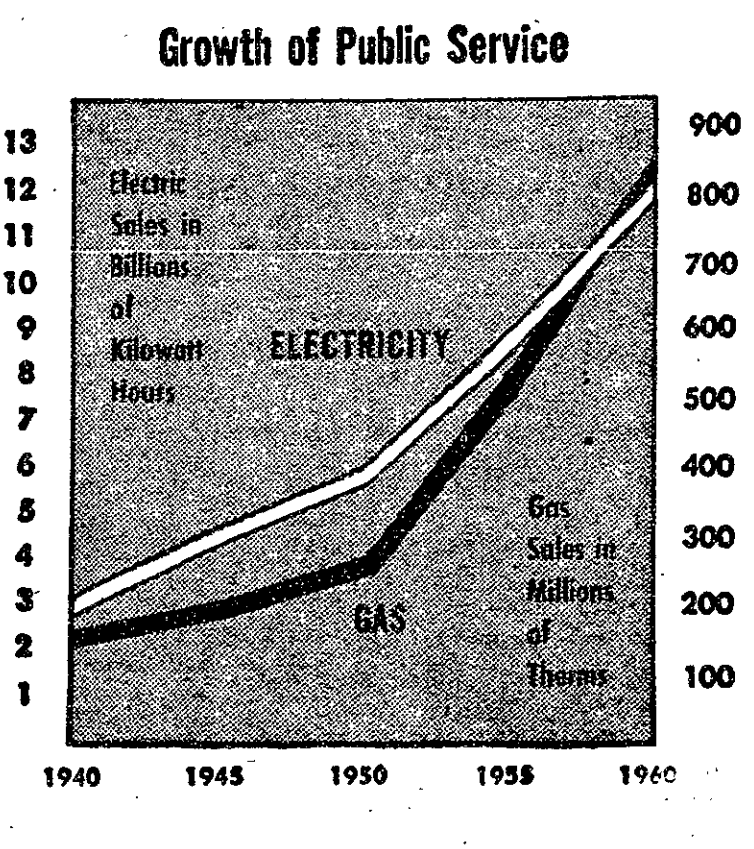
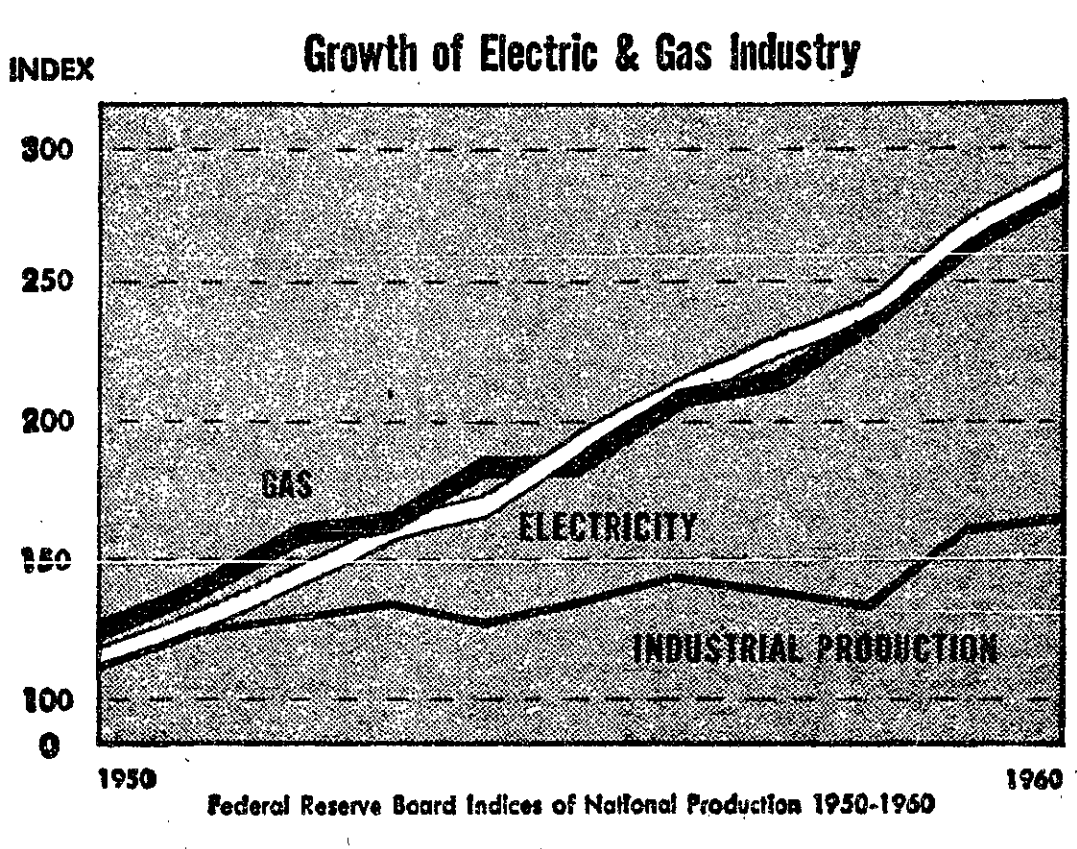
The story of the play, then, is the forces which ultimately compel Archie to leave the business, to destroy not just his living, but all of life as he knew it. Prime among these forces is the death of Billy, whom Archie had brought back to the stage in a last-ditch stand to keep his show open. The music hall killed Billy.
The role of Archie, designed specifically for Laurence Olivier, was carried off quite well by Mr. Meeker, but unfortunately he does not have the voice for singing those music hall numbers. The best acting was, however, that of Faye Dunaway in the role of Jean,

Archie's daughter. She made one realize that the play was her story, too, of how she found that the man she thought she loved had nothing in common with her due to their different backgrounds.
The setting was basic to the play, and the Dramashop production arranged it remarkably well. Archie's home and the music hall stage were one in the same, and a partition with nude girls on it would rise and fall as Archie moved back and forth between the two. Those scenes which took place outside this sphere of influence, such as Billy's funeral, were staged behind a semi-transparent type of netting, where the figures were shadowy and not clearly distinguishable, and definitely other-worldly.
The Dramashop staff is to be complimented on this production.
Warren Wiscombe '64

'El Cid' Tells Of Spanish War-Hero In Twelfth Century

The spectacular "El Cid", starring Charlton Heston and Sophia Loren, will have its New England premiere at the Astor Theater Thursday, Dec. 21. It is the story of the great warrior-hero who altered the course of Western history, and was called "el Cid" by the Moors, a word derived from Arabic and meaning "lord" or "leader."
El Cid, born Rodrigo de Bivar, grew to manhood in a nation of disorganized kingdoms, in a land drained by petty conflicts which gave rise to numerous alliances among Moslems and Christians. From youth, his dream was to drive out the entrenched Moslems and create a great nation out of the quibbling kingdoms.
The film was produced against an authentic background of Spanish castles and countryside. A tremendous amount of historical research prefaced the costuming and making of weapons, and the whole is an effect of great reality.
The influence of El Cid was almost as mighty after his death as during his lifetime, for Spain, the nation he had started on the road to unity, made him its national hero, like Roland in France. His memory was like a banner around which the Christian kingdom, rallied to finally drive the Moors out forever.
It is the fabulous story of this giant that producer Samuel Bronston has brought to the screen in "El Cid". The enormous cast includes—in addition to stars Charlton Heston and Sophia Loren—such international stars as Raf Vallone, Genevieve Page, Hurd Hatfield, Massimo Serato, and Herbert Lom.

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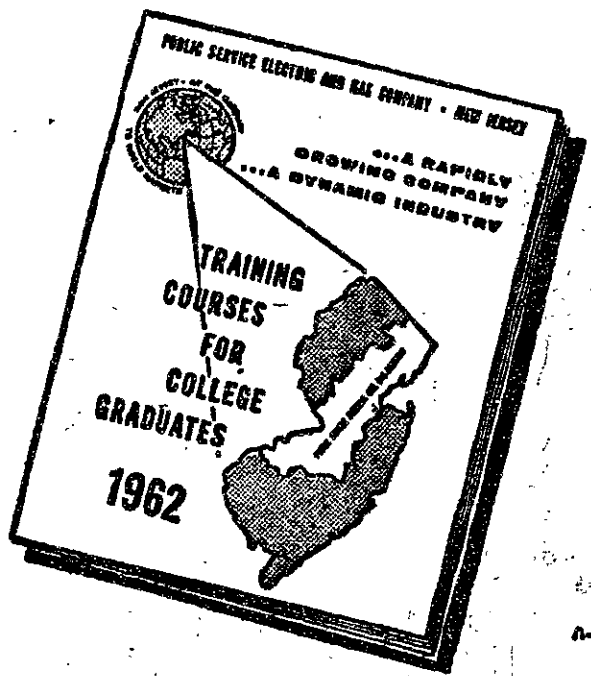
Wadleigh, Osha On 'Inscomm Open Line'

Dean Kenneth Wadleigh and Undergraduate Association President Frank Osha were the guests of Public Relations Committee over "Inscomm Open Line" on WTBS, yesterday.
Principal topics of discussion were the operation of the Dean's Office, and the responsibility of students in Student Government. The point of the discussion was the division of responsibility for student affairs between student government and the administration.
Students were allowed to call in during the program, as telephone lines to WTBS were open as usual.
Students call in questions or express points of view while "Inscomm Open Line" programs are in progress. The program is sponsored by PRC of Inscomm.

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Choral Society's 'King Arthur' Lacks Polish

"King Arthur", the dramatic opera produced last Sunday as the joint effort of the MIT Choral Society and the MIT Symphony Orchestra, was rather disappointing. It lacked the polish which ticket prices seemed to portend, and it

turned out to be more like a choir practice than a dramatic opera. Advance billing for the show indicated that it was to be a play to which the music and songs were only incidental. In actual fact, the Choral Society

did nothing but sing the music (and not all of it, at that), leaving the rest of the play, which was considerable, to the imagination. At various times the soloists, Helen Boatwright, Donald Sullivan, and Paul Matthen, would rise and sing parts, which, though small, were apparently quite difficult to remember, for all three had to told scripts in front of them while singing. One wonders whether these professionals spent much, if any, time in practice.

The orchestra kept the performance from being incredibly dreary, though certainly not by force of numbers. They did a commendable job with some of the rather difficult Old English scores, and made them enjoyable even in the absence of the chivalrous dramatics these scores were intended to complement. The unearthly tones of the harpsichord lent a certain ancientness to the music which almost seemed to transport one back to Arthurian times.

As for the Choral Society, they made no obvious mistakes, but beyond this we have little praise for them. They strike one as a group of Den mothers and been hurriedly assembled to Cub Scout leaders who have sing at the neighborhood church. Perhaps the material gave them no chance to display their talent; in that case, we pray they may choose music which will for their next performance, if it exists.

Warren Wiscombe '64



— Photo by Sanford Libman '65
Soloists preparing to sing in the Choral Society presentation of "King Arthur".

New Plays Open In New York Over Xmas

"Madame Aphrodite," a new musical concerning a middle-aged woman executive who manufactures a beauty cream concoction and a sensitive young salesman who comes to work for her, opens Wed., Dec. 27, at the Orpheum Theater in New York City. The play is written by Ted Mosel, who won the Pulitzer Prize and the Drama Critics Circle Award last year for "All The Way Home." Jerry Herman, who wrote the music for the hit play "Milk and Honey," also created the lyrics and music for "Madame Aphrodite."

Also opening in New York, at the Midway Theater, 420 West 42nd Street, is "The Ticket of Leave Man," on Wednesday, Dec. 20. First produced in London in 1863, this classic 19th century drama revolves around a man recently released from prison and his cherished parole ticket. It is a play that combines elements of comedy and drama in its tale of Hawkshaw, the master detective, and his running battle with "Tiger" Dalton, king of the underworld. The author, Tom Taylor, wrote numerous plays of the period, of which probably the best known is "Our American Cousin," the one President Lincoln saw that fatal night at Ford's Theater.

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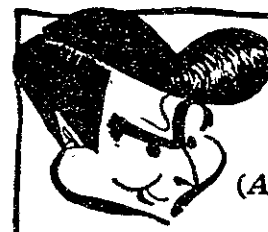
5:30 7:30 9:30

Charles Lists First Musical

New York's long-running musical spoof "The Fantasticks" opens at the Charles Dec. 27th. This is a play's first presentation in Boston and the Charles's first musical ever.

In New York at the Sullivan St. Playhouse, "The Fantasticks" recently celebrated its 600th performance. Other productions of it are currently being presented in London, Australia, Belgrade, and the West Coast.

Stanley Jay, who performed in the New York company of "The Fantasticks" will recreate his role in the musical for the Charles Playhouse production. According to the Saturday Review, this play "equals the best Broadway has to offer with a degree of artistic taste that Broadway seldom attains any more."



On Campus with Max Shulman

(Author of "I Was a Teen-age Dwarf", "The Many Loves of Dobie Gillis", etc.)

HAPPINESS CAN'T BUY MONEY

With tuition costs spiralling ever upward, more and more undergraduates are investigating the student loan plan. If you are one who is considering the "Learn Now, Pay Later" system, you would do well first to study the case of Leonid Sigafos.

Leonid, the son of an upholsterer in Straitened Circumstances, Idaho, had his heart set on going to college, but his father, alas, could not afford to send him. Leonid applied for a Regents Scholarship, but his reading speed, alas, was not very rapid—two words an hour—and before he could finish the first page of his test the Regents had closed their brief cases crossly and gone home. Leonid then applied for an athletic scholarship, but he had, alas, only a single athletic skill—balancing a stick on his chin—and this, alas, aroused only passing enthusiasm among the coaches.



He had, alas, only a single athletic skill.

And then, huzzah, Leonid learned of the student loan plan: he could borrow money for his tuition and repay it in easy monthly installments after he left school!

Happily Leonid enrolled in the Southeastern Idaho College of Woodpulp and Restoration Drama and happily began a college career that grew more happy year by year. Indeed, it became altogether ecstatic in his senior year because Leonid met a coed named Salina T. Nem with hair like beaten gold and eyes like two squirts of Lake Louise. Love gripped them in its big moist palm and they were betrothed on the Eve of St. Agnes.

Happily they made plans to be married the day after commencement—plans, alas, that never were to come to fruition because Leonid, alas, learned that Salina, like himself, was in college on a student loan, which meant that he had not only to repay his own loan when he left school but also Salina's, and the job, alas, that was waiting for Leonid after graduation at the Boise Raccoon Works simply did not pay enough, alas, to cover both their loans, plus rent and food and clothing.

Sick at heart, Leonid and Salina sat down and lit Marlboro Cigarettes and tried to find an answer to their problem—and, sure enough, they did! I do not know whether or not Marlboro Cigarettes helped them find an answer; all I know is that Marlboros taste good and look good, and when things close in and a feller needs a friend and the world is black as the pit from pole to pole, it is a heap of comfort and satisfaction to be sure that Marlboros will always provide the same unflagging pleasure, the same unstinting quality, in all times and climes and conditions. That's all I know.

Leonid and Salina, I say, did find an answer—a very simple one. If their student loans did not come due until they left school, why, then they just wouldn't leave school! So after receiving their bachelor degrees, they re-enrolled and took masters degrees. After that they took doctors degrees, loads and loads of them, until today Leonid and Salina, both aged 78, both still in school, hold doctorates in Philosophy, Humane Letters, Jurisprudence, Veterinary Medicine, Civil Engineering, Optometry, and Dewey Decimals. Their student loans, as of last January 1, amounted to a combined total of eighteen million dollars, a sum which they probably would have found great difficulty in repaying had not the Department of the Interior recently declared them a National Park.

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Squash Rout Adelphi; Smashed By Harvard, Navy, U. Pennsylvania

By Bostwick Wyman '62
The MIT squash team beat Adelphi 8-1 at Garden City, New Jersey last Friday for their first win of the season. Don Nelson '62 was outstanding in the number-eight spot, holding his opponent to a total of five points. Al Pitegoff '62 won the top match for Adelphi, while MIT won all the rest in straight games.

After a victory celebration at Mamma Leone's, the team went to Philadelphia for a match with the University of Pennsylvania on Saturday, Dec. 16. The Penn match was very close, but MIT lost, 6-3. Six of the nine matches went the full five games. Monrow LaBouisse '62, MIT captain, Joe Strutt '62, and Bill Mihaltse '62, were the Tech winners. Mihaltse has the best individual play record this season, with three wins out of six in intercollegiate play.

On Wednesday December 13, the Techmen lost to Harvard, 9-0. Joe Rappaport '62, who lost 3-1, was the only MIT man to win a game from Harvard. Harvard has been ranked second (under Yale) in the intercollegiate squash circuit, and will be a strong contender for the title this season. The MIT freshmen lost their first match 9-0, also to Harvard. Marty Snyder was the only MIT fresh to make a reasonable showing, losing to Harvard's Hank Morris, nationally ranked number-one man, in fairly close games.

Fencers Downed 18-9 In Duel With Harvard

In a close match that belied its lopsided score, the MIT cavaliers lost their first major challenge to Harvard, 18 to 9. The match began poorly as MIT lost the first three sabre bouts to a superior Harvard sabre team; however MIT countered with strong foil and epee teams that took two bouts out of three for each weapon during the first round. The score for the first nine bouts was Harvard 5, MIT 4. It might be noted that there are twenty-seven bouts in a match, three rounds of nine bouts each; fourteen bouts are required to win a match.

The match was lost in the second round as MIT managed to win only two bouts to make the score at the end of the round 12 to 6 in favor of Harvard. Several critical bouts were lost in this round and MIT was unable to regain control of the match. Bob Levis '63, an excellent foil man, but new to the epee, lost his epee bout with a very close score, although he won his bouts in the first and third rounds with no touches against him. Dave Juncker '63 lost his epee bout by one touch, and Barry Rosof '63 lost his foil bout by the same score.

After two losses in sabre in the third round, one by Bob Mason '63 by one touch, Harvard had accumulated the required fourteen points to win. At this point MIT emptied its bench and this tactic allowed the lopsided final score.

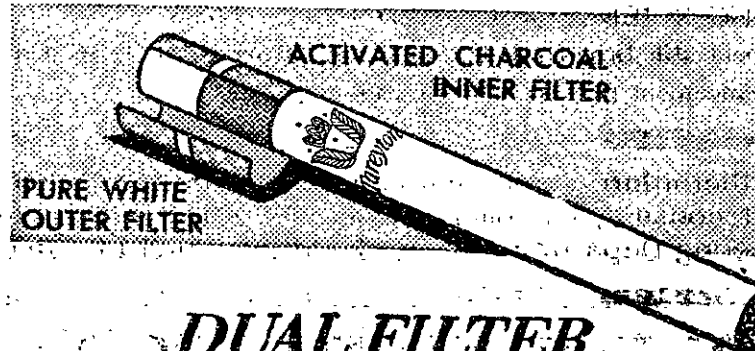
Notable performances were given by Bob Mason and Steve Reznek '63 in sabre despite the excellence of Harvard's Kennedy and Pusey in this weapon. Dave Wakeman '62 and Barry Rosof were very good in foil, each winning two out of three bouts. Levis, despite his one loss, was the outstanding man in epee, rarely giving Harvard a chance for a touch. Two of the sophomores that fenced in the third round, Ralph Zimmerman and Norm Cohler, both in foil, showed considerable promise for the future.

The cavalier's next match is with Brandeis Saturday, January 6th, at 2:00 p.m. at DuPont.



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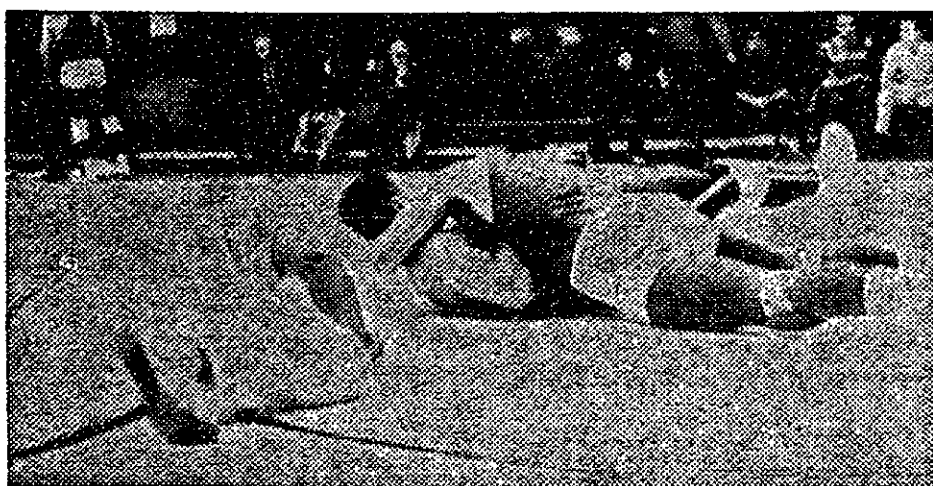
Riflers Nip BC, Wentworth

The Rifle Team scored a double victory against Boston College and Wentworth in a match at BC last Friday night. The scores were: MIT 1410, BC 1391, and Wentworth 1324.

The most encouraging aspect of the match was the fact that MIT had six shooters with scores in the 280's for the first time this year. These were: Richard Ludeman '63, 285; Steve Smith '62, 282; Jerry Skinner '63, 282; Terry Foster '63, 281; Bruce Peterson '63, 280; Joe Wyatt '62, 280.

Coach Ireland hopes to have the entire squad of ten shooters fire at least in the low 280's consistently. In each match any two or three of them could then be expected to come through with a 288 or better. It was this type of situation that allowed last year's squad to average 1426 and shoot much higher on occasion. Until Friday's match, there had been a couple of outstanding scores in each match, but no depth to back them up.

Tech Grapplers Edge Williams, 16-13



— Photo by John Eulenberg '64
 READY TO PIN his opponent is MIT's undefeated wrestler Jim Evans '63. Evans picked up five team points by being the only man to win by pinning. Several other Tech matmen won close decisions, giving MIT a narrow 16-13 margin over Williams.

By John Butler '65
 MIT's matmen traveled to Williams College last Friday afternoon to wrestle against the strong Williams College team. The varsity grapplers triumphed 16-13 and the Frosh won 21-13. In four exhibition matches against opponents with greater experience (and in most cases in heavier weight classes) there were three losses by decision and one frosh was pinned.

Armin Gabrielian '62, varsity 123 pounder, lost his match to Mooty, in a match much closer than the 8-0 decision seems. 130-pound Don Topkis, who lost a large amount of weight in order to get down to that class, lost an extremely close match (3-2). The decision was based on the rule which awards one match point if one man retains the advantage for as much as one minute longer than the other.

The first win of the afternoon came when Jim Evans '63 won the 137 pound class against Winfield by a pin in two minutes and two seconds of the second round. Evans' pin came at a very appropriate time; he was behind in the match by two points and had to pin the man in order to win. The win by fall gave MIT five team points, making the score six to five in favor of Williams. In the next match Greg Brown '62 of Tech won a 7-4 decision over Bauer of Williams to give MIT three more team points.

In the 157 pound class, Tom Gerrity '63 beat Staples, by a 5-0 decision, but Staples was continually in trouble, and was nearly pinned in the last few seconds. Gerrity, Brown, and Evans are undefeated this season.

Paul Olmstead '62 battled Howard of Williams to a 4-1 decision to bring the total team score to 14-6. Howie Graves '62 wrestled to a 1-1 tie with Oehrle; two team points were awarded to each team. Kim Sloat '64, wrestling in the heavyweight class (weight 215 pounds) was pinned by Riley in 6:35. Final score: MIT 16, Williams 13.

In the freshman meet, which was held simultaneously in the same gymnasium, there were two forfeits, 123 pounds and 130 pounds. The freshman who normally wrestle in these classes wrestled exhibition matches, and were beaten by larger men of much greater experience from the Williams junior varsity.

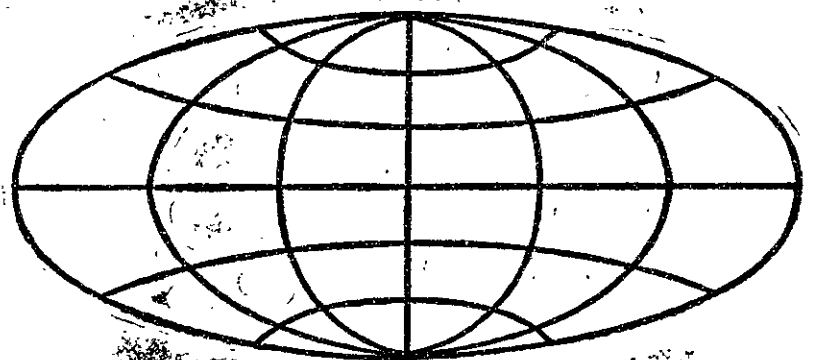
The two forfeits gave the frosh ten team points. 137-pound Ken Cairns, undefeated this year, walked out onto the mat, took his man down, and pinned him in two minutes. Don Frederickson, 147-pounder, came very close to winning his match against Freidman during the first two periods but began to fail in the third. If the match had lasted a few seconds longer, Frederickson, who was in control at the time, would have pinned the man or reversed the close 5-4 decision. George Borton, who wrestled his first intercollegiate match Friday, was reversed and pinned in the second period by Watterson.

167-pound Bob Wells won a 9-6 decision in three rounds after pinning his man after time ran out in the first round.

Bill Stowell, wrestling his first match at 177, after wrestling unlimited for the first three meets was pinned by Selvig. John Butler, wrestling in his first intercollegiate match, defeated Hohenandel 4-0 to round out the freshman team score to a healthy 21-13.

The victories at Williams gave the varsity grapplers a 2-1 record for the season, their only loss being to Harvard, 16-14. The freshmen have a 3-1 record; their only loss also going to Harvard.

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Phi Deltas Win Swimming

Phi Delta Theta won the intramural swimming meet Saturday afternoon at the pool only to have their victory jeopardized by a Sigma Phi Epsilon protest concerning the status of Doug Spreng '65, who took a second in the freestyle for the Phi Deltas.

It seems that Spreng had swum in a freshman meet but was not, according to him, actually a member of the team. The Sig Eps protested this and the outcome of the meet is thus thrown into the hands of the Intramural council protests committee.

Robin Lytle '62, of Delta Upsilon, was the only double winner as he copped both the 50 and 100 yard freestyle events. In other individual events Mike Kettler '62, Alpha Epsilon Pi, won the diving competition; Dave Hoover '63, Phi Delt, took the 50 yard backstroke; Dan Frischmuth '64, Phi Delt, paced the 50 yard breaststroke

Team Scoring	
Phi Delta Theta	47
Sigma Phi Epsilon	41
Delta Upsilon	36
Graduate House	24
Lambda Chi Alpha	19
Burton House	15
Alpha Epsilon Pi	13
Senior House	10
Sigma Chi	7
Alpha Tau Omega	3
Baker House	2

9.01

Two shooting sports, rifle and pistol, are included in MIT's intercollegiate athletic program. In both the objective is to fire the weapon as accurately as possible under a variety of circumstances.

Pistol is fired on a fifty foot range, the contestants standing at shooting posts and firing at the targets. The meet is scored on a total point basis with each team firing a maximum of ten men, the scores of the highest

Introduction To Sports

Pistol & Rifle

By Jay Salmon '63

five being used to figure the total. Each shot has a possible score of ten, a bullseye counting as ten. The participants, each have 30 shots making for a perfect score of 300.

First each man fires ten shots slower at 1 minute per shot. Next comes timed fire with each man firing two strings of five shots at 20 second per string. In rapid fire the contestants fire two five shot strings at ten seconds per string.

The target for slowfire has a .90 inch diameter bullseye and concentric rings decreasing in value to four. The timed and rapid fire target has a 1.8 inch diameter bull and rings going out to a value of 6.

The meet is controlled by a range officer who takes care of timing the meet and makes certain that the time limits are observed. Targets are scored by two scorers, one from each team, who may or may not be contestants. There are two types of match: postal and shoulder-to-shoulder. In postal competition each team shoots on its home range and mails the results to the opponent. In a shoulder-to-shoulder match the two teams compete on the same range and an equal number of participants from each team shoot at the same time, the number being fixed by the size of the range.

The weapons used are all

semi-automatic .22 rimfire pistols which are specially designed for high accuracy. Many weapons even have adjustable weights to produce the desired balance.

Turning to rifle, many of the procedures apply. Ten men fire for record, the high five being used to figure team score. Thirty shots are fired by each man, ten each from prone, kneeling and off-hand (standing) positions. A time limit of 36 minutes is imposed on the match; alternatively the contestants are given ten minutes at each position. A bullseye is worth 10 points and rings go out in descending values to 5. A target consists of ten small bulls and one shot is fired into each bull. Hitting a bull more than once costs a man one point. A new target is put up for each different position. Again, 1500 team points are possible. Anything over 1400 is considered good.

The target rifles are specially made to precise tolerances and generally are single shot. The .22 rimfire weapons usually have peep sights, as optical sights are illegal. The rifles are balanced and weigh 11 to 12 pounds.

As in pistol there are both postal and shoulder-to-shoulder meets. Some of the weapons for both sports are furnished by MIT and others by the contestants themselves.



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New Hampshire, Bowdoin Defeat Hockey Team



SCRAMBLE FOR THE PICK ends as Tech goalie Tim O'Brien (1) bats it behind the net.

By Tom Sheahan '62
 After an auspicious start with two victories, MIT's hockey team evened their record last weekend by being shut out twice. Friday night the icers were downed by the University of New Hampshire, 4-0; Saturday Bowdoin drubbed the Engineers, 8-0.
 Following the Christmas vacation, the icemen will travel to Colgate for a January 6 encounter. Colgate is generally considered in the same class with UNH, and is favored to win this year. Last year Tech dropped a 9-4 battle with Colgate.
 A battle of goaltenders ended in a 4-0 defeat Friday night. Doug Dunning, New Hampshire's superb sophomore goalie, turned away dozens of concentrated MIT attacks, making 38 saves. MIT netminder Tim O'Brien withstood a heavy barrage to make 33 saves, many spectacularly.
 Despite the score, the engineers made an exceptionally good showing. In past years, New Hampshire has taken MIT lightly, running up scores like 11-3 and 15-0; they were permitted no such romp this year. Tech displayed equal skating,

stick-handling, and checking ability: The Beavers were beaten by a combination of Dunning's amazing goaltending, missing the net on a few key shots, and momentary defensive lapses.
 UNH first scored at 15:18 of the first period as Bob Littel drove in from a face-off, drew the defense aside, and passed to Jack Nichols in front of the net. As O'Brien came out to cut down the angle, Nichols slid the puck into the left corner of the net.
 Three minutes later a two-on-one break netted UNH another point as Sam Merrill carried in and set up Bill Mayher. Midway in the second period, first-line sophomore Mayher tallied again on a three-on-two break, assisted by Littel and Nichols.
 The scoring closed at 17:52 of the second period as a wild shot by defenseman Paul Canuso bounced off the knee of Merrill, catching the MIT net from a sharp angle.
 Late in the third period MIT sustained two injuries: Captain John Rupert '62 was hit in the mouth by a wild puck; Tony Weikel '63 was hurt for the third time in as many games as a UNH defenseman's stick cut his face.
 Against Bowdoin, the Engineers were clearly outclassed, Tech managed only six shots on the Bowdoin goalie to Bowdoin's 39 shots, eight of which paid off. With the exception of infrequent bursts of activity by MIT, the boys from Maine were in complete control of the game at nearly all times.
 The game was in most respects similar to Bowdoin's 9-2 trouncing of MIT last year. At 2:17 of the first period, Ron Famiglietti netted a slap-shot from the blue line, and MIT never really got started. Bowdoin's first line of Newt Stowell, Ken Bacon, and Spence Greson accounted for three goals (one apiece); Lenny Johnson nailed two more, Dev Harken scored one; outstanding defenseman Don Jelly, who was impervious to MIT forwards, picked up a goal on a hard, low blue line shot.
 MIT spent a good part of its time killing seven penalties, as the referees called a fanatically close game. Bowdoin men sat out three equally curious infractions.

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TELEPHONE MAN-OF-THE-MONTH

BOX SCORES
 MIT 0 0 0-0
 UNH 2 2 0-4
 First Period: Goals: Nichols (Littel) 15:18; Mayher (Merrill) 18:00.
 Second Period: Goals: Mayher (Littel, Nichols) 12:53; Canuso (Merrill) 17:32. Penalties: UNH: Merrill (Offensive Zone Checking) 6:09; MIT: McMillan (Cross Checking) 9:00.
 Third Period: Penalties: UNH: Littel (Slashing) 5:35.
 Goaltender's saves:
 O'Brien (MIT) 13 10 10-33
 Dunning (UNH) 9 12 17-38
 * * *
 MIT 0 0 0-0
 Bowdoin 2 3 3-8
 First Period: Goals: Famiglietti (unassisted) 2:17; Stowell (Bacon) 5:49. Penalties: MIT: McMillan (elbowing) 7:29; Sheahan (interference) 9:04; Denny (holding) 15:58. UNH: Harken (hooking) 19:34.
 Second Period: Goals: Harken (Farbell) 10:42; Jelly (Bacon, Stowell) 12:36; Johnson (Bisset) 13:51. Penalties: Bowdoin: Stowell (cross checking) 8:17; MIT: McMillan (hooking) 12:57. Sheahan (charging) 14:36.
 Third Period: Goals: Johnson (Bisset) 3:01; Greson (Stowell) 7:42; Bacon (Greson, Stowell) 12:36; Johnson (Bisset) (tripping) 10:37; MIT: Salmon (interference) 11:31; Salmon (interference) 15:12.
 Goaltender's saves:
 O'Brien (MIT) 12 8 11-31
 Brucksch (Bwdn) 2 3 1-6

