

## Experts claim food shortages

By Greg Saltzman

"The present worldwide food shortage is not a temporary problem. It's something much more serious than that," said Dr. Lester Brown of the Overseas Development Council. In the US, he noted, this problem is manifested by rising food prices; in West Africa, by famine.

Brown, Associate Professor of Management Glen Urban, and Professor Nevin Scrimshaw, head of the Department of Nutrition and Food Science, addressed the problem of "Policy Responses to World Food Scarcity" in the spring's first Karl Taylor Compton lecture.

Although the world food supply generally has been increasing, demand is increasing also. "In addition to the traditional increase in demand caused by population growth," Brown said, "rising affluence is beginning to have an impact."

"The people in the wealthier countries are consuming much more protein than they need," he continued. A large part of the increased protein consumption in rich nations has come from an increase in the amount of animal protein.

Brown explained that, because animals are inefficient in converting vegetable protein into animal protein, "the production of meat, milk, and eggs requires the use of large amounts of grain as animal feed." As a result, "it requires a ton of grain per year for the diet of the average American. Only 150 pounds of this are consumed directly. In contrast, the average person in the poor nations of the world consumes only 400 pounds of grain per year — about one fifth of the American average. Almost all of the 400 pounds is consumed directly," Brown noted, since

the poor cannot afford the luxury of beef.

According to Brown, "the US is the world's leading importer of beef. American per capita consumption of beef, which was 55 pounds in 1940, was 116 pounds in 1972." Much of the beef produced by developing countries is exported to the US, because Americans can afford to pay more for the beef than the local people can. The market for America's food exports, Brown continued, is now dominated by other industrialized countries such as the USSR and Japan.

Urban, discussing the role of rapid population growth in the food crisis, commented that "Five to ten years ago, there was a great sense of optimism that the 'green revolution' would solve our food supply problem. However, population growth has cancelled the gains that the green revolution brought."

The green revolution, a result of new plant hybrids and new agricultural techniques, brought about spectacular increases in cereal grain yields in many developing countries. An unexpected consequence of the green revolution, however, was to shift agricultural resources from legume production to more profitable cereal production. This shift, said Urban, has aggravated the protein shortage in the poor nations.

According to Urban, rapid population growth is a recent phenomenon. Urban remarked, (Please turn to page 7)

## Environmental Engineer may save \$1 million/yr

By Bert Halstead

MIT will soon be choosing the first person to fill the newly created post of Environmental Engineer.

Thomas E. Shepherd, MIT superintendent of utilities, declined to set a target date for the appointment to be announced, but stated that "we're coming down to the wire."

The search for an environmental engineer to work at the Institute started in earnest last August. Applications were slow coming in, despite an intensive publicity campaign. As late as last month, inquiries were still being received in response to articles in *Technology Reviews*, publicity in *The New York Times*, advertisements in *Spokeswoman* and *Ms.* magazines, among others, and letters to many universities and professional societies, including the Society of Women Engineers (as part of MIT's Affirmative Action Plan). Altogether, there are now 30-35 applicants for the job, a number with which Mr. Michael Parr, the personnel officer in charge of the matter, feels he can work. Although the applicants come from diverse backgrounds, none of them are women.

The extent of the search is indicative of the crucial importance of this position. MIT's Environmental Engineer will be responsible for all efforts to cut energy use (and the attendant costs) throughout the MIT physical plant. "We feel it is possible to save a million dollars a year," says Shepherd, "Without interfering with the normal (Please turn to page 6)

## Officials examine 'Dartmouth plan'

By Howard D. Sitzer

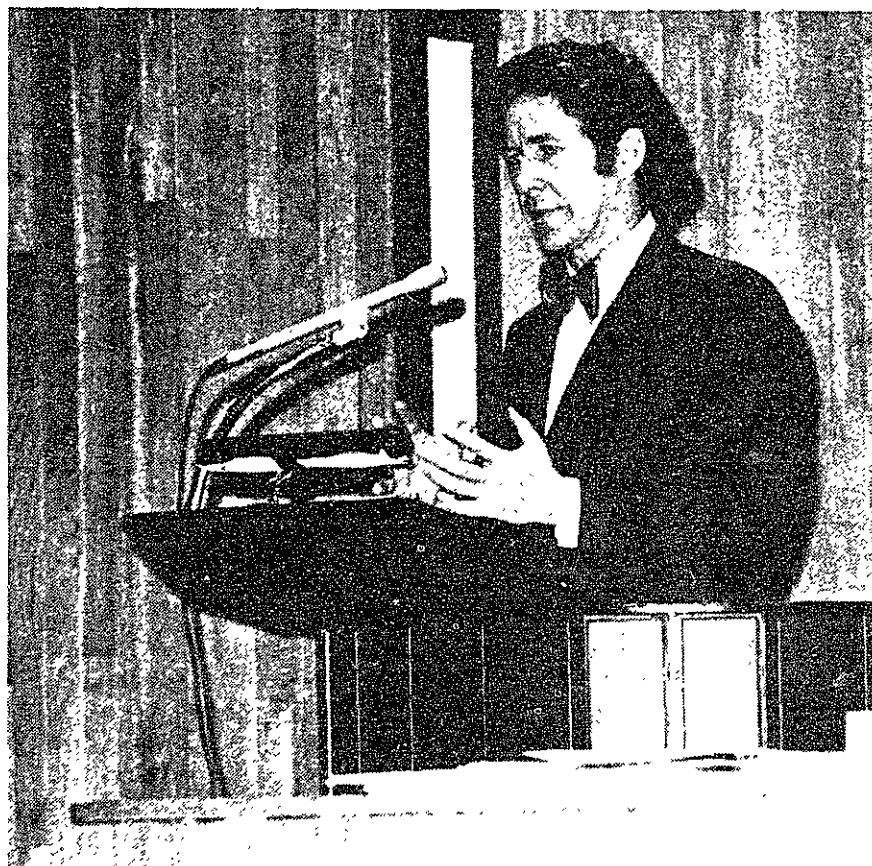
Administrators at MIT are continually considering the adoption of a year-round academic calendar patterned after a plan presently in operation at Dartmouth College. Discussions commenced in 1972 on offering courses and innovative educational activities during the summer months.

There are numerous benefits to such a program which are being evaluated against the administrative and social costs. A major calendar change might facilitate major course revisions in such areas as curricular reform and degree requirements. As an increasing number of students are graduating in less than four

full academic years, the program might enhance the development of a three-year bachelor's degree.

The full-year calendar might also enable students to receive more enriching summer experiences than the ones they now have. "Some faculty feel that the time spent away from the Institute by many undergraduates is not as rewarding in the total educational sense as it could be if they continued at MIT," according to a report by Kenneth R. Wadleigh.

Financially, students could potentially increase their life's income by entering graduate schools and the job market one year earlier. The Year-round operations would simulate the



Dr. Lester Brown of the Overseas Development Council.

Photo by Kevin Miller

## Williams appointed new Ass't for Minority Affairs

By Jules Mollere

Clarence G. Williams, Assistant Dean of the Graduate School for Minority Affairs, has been recently appointed Special Assistant to the President and Chancellor for Minority Affairs. Williams says that he sees his job as "trying to encourage people at the Institute to utilize means that will promote positive racial action on all levels."

"I intend to go to students, faculty, administrators and employees to see what each has to say. This is the only way to do my job as they are the ones who will be affected by any decisions."

Williams said that these discussions would help him to assess "what is being done here and what direction minority affairs should take." He said that he would then advise the President and Chancellor accordingly. Concerning other offices that involve minority affairs such as the 'interphase' program and financial aid, Williams said he would use "persuasion." "In areas that involve minority affairs I would try to encourage, help and influence these offices."

Williams stated that his function as MIT representative and spokesman to minority communities outside MIT would "call for a different approach."

(Please turn to page 2)

"real-life" employment situation, and increase the maturation rate in undergraduates.

There would be efforts to coordinate the twelve-month session with undergraduate cooperative programs and the extension of UROP opportunities on and off campus. Exchanges with other universities would be encouraged as well as a staggered admissions process for freshmen.

(Please turn to page 5)

## Draper to move activities to new Tech Square HQ

Draper Laboratories, divested by MIT eight months ago, has announced plans to relocate its research facilities into a 6.2 acre site in Technology Square.

Construction will start this spring on a complex of low-rise buildings and landscaped plazas which will serve as the headquarters for the Laboratory. Occupancy of the Tech Square complex is expected late in 1975.

The announcement was made jointly Tuesday by MIT Vice President for Research Albert G. Hill, who is also Chairman of the Board of Directors of Draper Laboratory, and President Gerald W. Blakeley of Cabot, Cabot and Forbes, the original developers of the Tech Square project. Cabot, Cabot and Forbes will be constructing the new Draper complex.

The new headquarters will, according to Hill, help the Laboratories overcome serious operational problems caused by their current location in twelve

different buildings scattered throughout Cambridge. Another factor behind the move, MIT officials noted, was that many of these buildings, some of which are owned by MIT, are "pretty grim" — overcrowded and structurally unsound.

MIT officials indicated to *The Tech* earlier this week that the relocation of Draper had been considered for some time, but that the particular solution chosen — the move to Tech Square — had only been discussed in the last few months. They stressed that the move was mainly a relocation, and did not involve substantial expansion of the Laboratory facilities.

"Smart money" stays

Reaction from Cambridge officials to the announcement has generally been favorable. City Manager John H. Concoran, addressing a press conference shortly after the announcement Tuesday, noted that "It has (Please turn to page 3)



The new Tech Square location of the Charles Stark Draper Laboratories, Inc.

# Technical Notes

By Storm Kauffman

\* RCA has created a new chemical compound which could increase a hundredfold the speed of data readout of the bubble memories being developed for use in information processing systems. Bubble memories made with bismuth thulium garnet can be read out with low-power light, and this optical readout permits higher speed of data retrieval and increased efficiency in information storage over previous systems. The bubble memory is an integrated circuit-like device of garnet material in which data is stored as tiny magnetic cylinders or "bubbles." It should replace the magnetic disk and drum presently used. Until now, high-powered light sources such as gas lasers were required for optical readout, so non-optical approaches were utilized. These techniques are not only slow but also reduce the inherent data storage capacity by up to 25%. But the new compound permits the employment of light sources as low-powered as light-emitting diodes. This is possible because the reaction occurs ten times more readily than with present memories.

A bubble device consists of a thin film of magnetic garnet epitaxially grown on a non-magnetic garnet substrate. When surrounded by the proper magnetic fields, the garnet film sustains stable, extremely small areas of reversed magnetization,

referred to as domains. Although these domains appear as bubbles when viewed under polarized light, they actually are cylinders that can be moved electronically at high speed along predetermined paths past a sensing device. The presence of a bubble represents a one, or on bit. To be sensed by present magneto-resistive techniques, the 6 micron bubbles must be enlarged 100 times, a requirement that ties up much of the memory area with sensing. RCA engineers have utilized Faraday rotation (an effect which converts domains to a visual pattern under polarized light) to detect the presence of a bubble. Bismuth thulium based garnet was found to have a large Faraday rotation and very good techniques permitted the growth of thin films, in which the bubbles can be detected by low-power, IC compatible diodes. Higher detector density will also permit faster readout.

\* HEWLETT-PACKARD has announced the production of the HP-65 billed as "the first pocket sized calculator to provide full programming capability for electrical engineers, laboratory technicians, and university and industrial researchers..." The HP-65, which can perform essentially all of the functions of the HP-45, enables users to write and edit their own programs and to use prerecorded programs developed by HP. The programs, which are stored on magnetic

cards, can be edited piecemeal and can be erased when no longer needed. The user enters the program using the calculator's keyboard, and one program containing up to 100 steps (or several programs totaling 100 steps) can be recorded on one card. Branching, logic comparisons, and conditional skips can be used. HP will be developing a library of prerecorded programs for purchase by HP-65 owners. The calculator will cost \$795.

\* A report by economists Jerolyn Lyle and Jane Ross has found that industrial firms with the largest numbers of employees and the highest levels of assets practice less educational discrimination toward women than do smaller, financially weaker firms. In the book *Women in Industry: Employment Patterns of Women in Corporate America*, Ross and Lyle reveal that one problem that inhibits the entry of more women into management positions is employee resistance to female supervision. The study recommends that both a change of attitudes and policy are in order: "We must reevaluate the way in which we educate young women and the occupations we encourage them to enter."



Professor Paula Harper of Stanford University told a group of MIT people last week about the power of posters in politics. Her lecture was part of a Symposium on Art and Architecture in the Service of Politics. Her topic was "Votes for Women? A graphic Episode in the Battle of the Sexes." Photo by David Relman

## Complaints welcomed, according to Williams

(Continued from page 1)

"I'm naturally very interested in knowing what concerns these people but my major responsibility would be to tell them what the Institute is all about."

As special assistant for minority affairs Williams will also be an ex-officio member of MIT's Personal Policy and Equal Opportunity Committees and of the Faculty and Administrative councils. Before accepting his new job Williams had not worked with these committees as such. However Williams stated that he had either heard of or knew "practically everyone on these committees" and has met with each (committee) at least once since taking office.

Williams also hopes to act as "a point of appeal" for formal and informal complaints and concerns. He said this should include not only minority members but anyone with a complaint or problem involving minorities. He stressed however that this should be thought of as a "final appeal."

"I can't handle every little detail," Williams said, "as I'd never have time for anything else. However if anyone can't get a problem heard, they can always bring it to me."

Williams said that he will not remain in the Graduate School and that he expects someone else to be appointed to his old position. He emphasized that this would not limit his involvement "across the entire segment of the Institute."

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## MidEast situation best since 1948, says Wright

By Dave Danford

The political situation in the Middle East has been tense since October's Yom Kippur war. However, a State Department official said earlier this week that "we now have the best opportunity for a just and lasting peace in the Middle East since 1948."

Speaking at a political science seminar, Deputy Public Affairs Advisor Wilbur Wright elaborated on the reasons for a hopeful outlook, pointing out that there are a number of differences between the present situation and previous postwar periods.

"The differences focus primarily on Israeli demands," Wright began, citing several perennial demands which no longer loom as insurmountable obstacles to peacemaking. In particular, he mentioned that the issue of Arab recognition of Israel has become less important now that talks are proceeding.

Further, Israel's demand for a non-aggression treaty may, in Wright's view, be unimportant if progress along other lines is made. We might have such a treaty in fact and not in words, Wright proposed.

In the context of recent events, he said that Israel's past demands for defensible borders are difficult to interpret. "only good neighbors make defensible boundaries," Wright commented.

On the Arab side, Wright noted the presence of a confidence and dignity missing after the wars of 1948, 1956, and 1967. "The world of psychology seems to be much more important to the people in the Middle East than we might feel," he explained. "Both sides are victims of the same psychological problems."

It is important for peace, Wright stressed, not to be imposed by one side upon the other.

Wright, from his viewpoint in the Bureau for Near Eastern and South Asian Affairs, described the American position in the Middle East: "Our ambition is to contribute toward a friendly relationship between Israel and her neighbors." Reiterating the positive outlook he carried throughout the seminar, Wright said; "I've seen miracles before, and all parties to the situation believe in miracles."

## Recycling efforts failing due to sponsorship lack

By Charlie Shooshan

Recycling of paper and other materials at the Institute, long advocated by groups ranging from student ecologists to administrators, has suffered another set-back with the failure of a plan for separation and reuse of office paper established over a year ago.

The plan, based on a study done in 1972 by students and implemented in November of that year by Physical Plant, depends on "source separation" by office workers of recyclable and non-recyclable materials. A special waste basket was placed in many administrative and academic offices, so materials that were recyclable could be processed without costly separation.

Turnover in secretarial positions and lack of a central group to work on the plan are causes for its failure, according to Manager of Building Services Ted Dean, Jr., of Physical Plant. "Secretaries come in and aren't

aware of the differences between the two wastebaskets they see," Doan said. "The recyclable materials get contaminated."

Another problem, Doan said, is that one of the students that did the original work developing the recycling plan, Fred Gross '73, has graduated, and no other students have taken over the operation or improvement of the plan. Lack of a group taking interest in the plan has led to ignorance about its existence and misuse of the facilities provided for it.

The recycling plan drawn up by Gross and Donald Whiston, a former Physical Plant supervisor since retired, was designed to get around many of the problems associated with previous programs. Source separation by the secretary or office worker would eliminate later separation of contaminated garbage; separate dumpsters were to be used for the reusable and non-reusable materials, and Physical Plant employees would make pick-up on alternate nights.

However, the dumpsters that were designated for recyclable materials often have trash thrown in them by people who do not realize what their intended use is. Fire laws also regulate the collection of the paper and other recyclable materials in public places, such as the Building 7 lobby, due to the safety hazards involved.

Physical Plant hopes to resuscitate the plan both for economical and ecological reasons, according to Doan. "In all honesty," he added, "in the future businesses not unlike MIT will have to recycle, so I see nothing the matter with getting started now."

space in Cambridge; MIT sold its share of the project to CC&F in March of 1971.

Draper Laboratory was a wholly-owned subsidiary of the Institute until July 1, 1973, when it was officially divested from MIT and established as a separate corporate entity. The divestment was urged by MIT students during anti-war protests of 1969-70, due to the nature of the research that the Labs were doing for the federal government.

## Draper, Cabot announce Lab move to Tech Sq.

(Continued from page 1)

often been said... that the 'smart money has been going out of Cambridge.' It seems to me now that perhaps we have been able, and will continue to be able, to reverse this trend."

Draper's move to Tech Square, which will double the office and laboratory footage in the area, will "add significantly to the Cambridge tax base and to annual tax revenues," according to Blakeley. The decision to remain in Cambridge, rather than relocate outside the city, will also result in the retention of almost 2,000 jobs in this area. Concoran noted that the Draper move "will not provide any substantial number of new jobs at this time," but added that it meant the "saving" of jobs which "we have come precariously close to losing altogether."

President Jerome B. Wiesner, in a statement released with the announcement, expressed "great pleasure and delight" at the relocation, and noted that "This move is bound to keep close the future relationships between the Laboratory and the Institute and enhance our joint educational and research activities."

MIT is closely related to both Tech Square and Draper Laboratories historically. Tech Square was originally developed jointly by the Institute and Cabot, Cabot and Forbes (thirteen years ago) as a means of increasing commercial office and research

## Police Blotter

Police Blotter is a compilation prepared by Campus Patrol to report crimes occurring in the MIT community.

2/1/74

Malicious damage to four motor vehicles parked in the Tang Hall Parking area. The reports received were that a window had been smashed on all four cars. No sign that entry into the cars had been made nor was anything missing from the vehicles.

2/4/74

Larceny of two wall clocks from Rooms 10-800 and 10-407, both valued at \$50.00. Complainants report that clocks were stolen sometime between February 1st and 4th, 1974.

2/5/74 - 12:10am

Larceny under \$100.00. Stolen from the East Lounge at Student Center during "Rock Revival Dance:" one brown leather jacket, one gray coat with white painted sleeves.

2/6/74 - 10:00am

Patrol reports the recovery of a stolen motor vehicle in the Albany Garage. Investigation revealed vehicle was stolen in Cambridge on February 5th, 1974.

2/6/74

Larceny of a pocket calculator from Bldg. 26. Calculator was mounted on wall of an inner office by means of a security cradle. A bolt cutter or other cutting device was used. No sign of forced entry. Value \$295.00.

2/9/74

Larceny of a tool box containing an assortment of tools, valued at \$50.00, from a car parked in the Albany Garage. Glove compartment contents strewn about car. Theft occurred sometime between 1:00am and 9:50pm this date.

2/9/74

Larceny of a typewriter from Bldg. E10, theft occurred some-

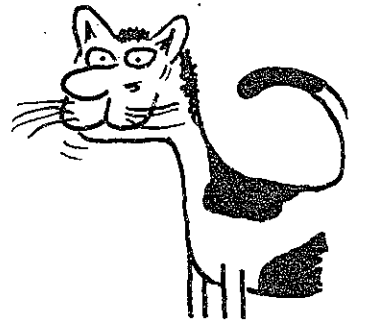
time between 7:30pm, 2/8/74 and 10:45am, 2/9/74. No sign of forced entry. Numerous other valuables in area not disturbed.

2/11/74

Larceny of a table from Room 10-500. Theft occurred sometime between February 8th and February 11th, 1974. This table is dark brown and weighs about 200 pounds.

2/12/74

Attempted larceny of a motor vehicle from the East Garage on February 12th, 1974. Patrol found a broken off antenna protruding from car window.



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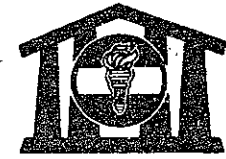
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## In Case of Insomnia— Science: The Selling of the Future

By Storm Kauffman

One axiom that has become increasingly prevalent during the reign of the Nixon administration is that science must justify continued funding with immediately applicable or foreseeable results. Pure research has suffered from this governmental — and, in general, public desire for concrete accomplishments of provable value. The error of following the path of quick returns is great — it attacks the basis on which future discoveries will have to be made.

A concrete example of this trend was the extensive backing given to cancer work a couple of years ago. Cancer is the "in" disease; in other words, it is the medical area in which the public feels it has the most to gain. The decision to support such work against this serious health problem is to be praised. However, when that support comes only at the expense of equally important — but less popular — programs, the policy must be questioned.

We have fallen into an almost perpetual state of crisis. We totter from one imminent disaster to another (from the crisis of overpopulation to the crisis of environmental degradation to the crisis of insufficient energy . . .), never seeming to recognize the causative factors early enough to prevent the evolving crisis situation and never completely solving the problem before the next crisis overtakes us. And, even if foreseen, future catastrophes would have to wait in turn for solutions, the disaster of the day taking precedence.

The point that I am trying to develop is that these monumental bursts of frantic activity are wasteful and rarely satisfactory. Research applications work is, by definition, directed at the current problem. On the other hand, the importance of pure research is in laying the foundation on which the solutions of future crises may be laid. A backlog of formerly unrelated, and possibly unusable, data can mean that science will not have to start from scratch and, therefore, should be able to produce a more satisfying answer in less time. If speed is of the essence in prevention of a catastrophe, a headstart should be reassuring.

Looking at our latest crash program, Project Independence, one should readily see the importance of pure research. While immediate programs were backed, those of less obvious payoffs suffered from neglect. If research into solar, tidal, and geothermal power has been pursued more avidly in the past, it would not now be necessary to scramble like mad to get them going. If coal gasification and liquefaction has not been viewed as a curiosity, viable technology might already be available. Pure research, by which I mean work that promises no immediate payoff, can by its very nature proceed more slowly and orderly than a crash search for applications. And the discoveries will be available when needed to provide the basis for continued work.

People at MIT hardly need to be reminded of the value of research. However, they should realize that a majority of the public probably does not share a similar attitude. MIT faculty and graduates — and the Institute itself — as leaders in science, education, and industry, must play a leading role in convincing the majority of the need for work which produces no apparent immediate results. Like a Savings Bond, science must be sold to the people with the promise of assured returns to come. Scientists must sell their product with all the energy expended by an ad agency peddling a deodorant. After all, where would the deodorant industry be without all that pioneering work by chemists?

# Impeachment: slow but steady

By Norman D. Sandler

Last week the House of Representatives voted overwhelmingly to give the House Judiciary Committee broad, sweeping powers of investigation for its inquiry into the impeachment of President Nixon.

The week before the floor vote on the resolution (which met with opposition from only four representatives) the committee had met in its first public session to discuss the impeachment of the President.

In a packed committee room in the Rayburn Office Building, chairman Peter W. Rodino, Jr., D-N.J., read the committee's charge. "The Committee on the Judiciary," he announced, "is authorized and directed to investigate fully and completely whether sufficient grounds exist for the House of Representatives to exercise its constitutional power to impeach Richard M. Nixon, President of the United States of America."

The public reading of the resolution was quite dramatic. As Rodino went on, the only other sounds in the committee room were the television cameras, set up to record the historic reading. (Later, Rodino was to inform Rep. John Conyers, Jr., D-Mich., that no stenographers had been hired by the committee to make transcripts of the meetings, even though it was only the second time in the history of the Republic that the House had decided to "exercise its constitutional power" to impeach a president.)

During the three hour discussions on the subpoena powers resolution, Rodino and committee Democrats resisted Republican attempts to place a deadline on their inquiry into whether sufficient grounds exist to impeach Nixon.

A number of Republicans — led by Rep. Robert McClory, R-Ill. — wanted the committee to decide by April 30 whether formal articles of impeachment would be returned against Nixon. However, through a series of votes decided strictly along partisan lines, all attempts to limit the committee's powers were defeated.

The subpoena authority contained in the resolution was badly needed by the committee. According to committee staff members, the major questions which committee counsel have had to deal with are not ones of evidence critical to the investigation. Rather it is the basic determination of what constitutes an impeachable offense.

Both majority counsel John Doar and minority counsel Albert Jenner have been grappling with this issue for more than two months, and a decision should be made by next week. Doar and Jenner are expected to report to the committee next Wednesday to present their recommendations on impeachable offenses. Then, the staff will begin its extensive review of previous investigations into Watergate and related matters, and begin to gather its own evidence — armed with the strong subpoena power backing of the House.

Rodino believes the committee now possesses the power to obtain any evidence it deems necessary to its inquiry currently in the possession of any federal officer — including the President himself. Those are strong, direct terms, but the powerful judiciary committee chairman hasn't said what would happen in the event a subpoena issued to the President is refused. And, if the mentality of the White House legal staff is similar to that relayed by Nixon Press Secretary Ronald L. Ziegler, that event is a certainty.

The day following the judiciary committee meeting, Ziegler blew up at reporters during the daily briefing at the

White House, announcing he, like the President, had had enough of Watergate and would not answer any further questions concerning tapes, subpoenas or resignations.

Ziegler also would not spell out the extent to which Nixon intends to "cooperate" with the Judiciary committee. In his State of the Union message he promised cooperation, but with broad qualifications.

Senate Minority Leader Hugh Scott, R-Pa., said at the White House that he was confident "relevant material should and will be made available" by the White House. However, the committee's subpoena resolution contained no requirements of relevance, and it appears the President's legal staff and GOP leaders will negotiate with committee counsel over what material the committee should be supplied.

Members of the Committee believe their investigation cannot be crippled by an obstinate White House. Rep. Edward Mezvinsky, D-Ia., said prior to the meeting on subpoena authority that the committee wanted broad powers to "avoid court action" in defining its precise powers. The subpoena power, he told *The Tech*, would allow the committee to obtain any information it needed assuming, of course, that the parties involved — particularly the President — cooperate.

However, the freshman Democrat did not believe Nixon could hold up the inquiry. Asked what would happen if Nixon flatly refused to honor the committee's requests for information, Mezvinsky stated, "if he doesn't comply with the subpoena, we'll hold him in contempt."

Interestingly, a new horizon for the impeachment inquiry could open if the President is cited for contempt of Congress. That in itself, according to Mezvinsky, could possibly be an impeachable offense, although final determination is left to the House.

To the casual onlooker, it would appear that the impeachment of Richard M. Nixon, "President of the United States of America," for high crimes and misdemeanors, is well on its way. Not true. Even when basic constitutional issues are resolved, the staff will be bogged down in searching through thousands of pages of evidence from other investigations, in order to begin its own.

The staff will wade through volumes of material accumulated by the Senate Watergate Committee and other congressional committees and subcommittees that have been looking into the Watergate break-in, illegal campaign contributions, Nixon's personal finances and the President's misuse of governmental agencies under his control. All of these issues could be regarded as impeachable offenses, and the judiciary committee cannot merely single out several prominent allegations to investigate. Rather, it has the responsibility to examine all existing evidence, in addition to running its own investigation, gathering its own evidence and calling its own witnesses. This is a lengthy process, and one which is not likely to be completed by the end of April.

In the meantime, Rodino is proving himself to be a strong committee chairman, handling a politically explosive issue in what he likes to term "a spirit of bipartisanship."

However, Rodino is under a great deal of external pressure from colleagues as well as adversaries. The Democratic leadership wants to insure that the committee has a strong case against Nixon when the articles of impeachment are referred to the entire house.

The chairman is also under attack from some conservative members of the House for running a partisan assault on the White House. So, Rodino must be certain the committee's work appears to be done on a bipartisan level. If it takes on an atmosphere of Democratic vengeance there is no way impeachment would get past the House.

A third, more "sinister" force may also be at work on Rodino — that pressure being directed from "up the street" at 1600 Pennsylvania Avenue. Like so many other New Jersey politicians, Rodino has been linked with organized crime in and around Newark. The questions concerning his past connections have not been publicly raised since last year, when he took charge of the impeachment inquiry. That, however, does not mean that should the committee probe too deep into Nixon's affairs there would not be an effort to publicly discredit Rodino to slow the impeachment process.

*The Tech* has learned that the Internal Revenue Service has conducted a secret audit of Rodino's federal income tax returns, although it is not known whether the audit uncovered any information that might be used prejudicially against the judiciary committee chairman. IRS officials will not comment on the story. However, sources close to the committee have said Rodino is not yielding to any pressure to slow or stall the committee's work.

Continuous News Service

## The Tech

Since 1881

Vol. 94, No. 4

February 15, 1974

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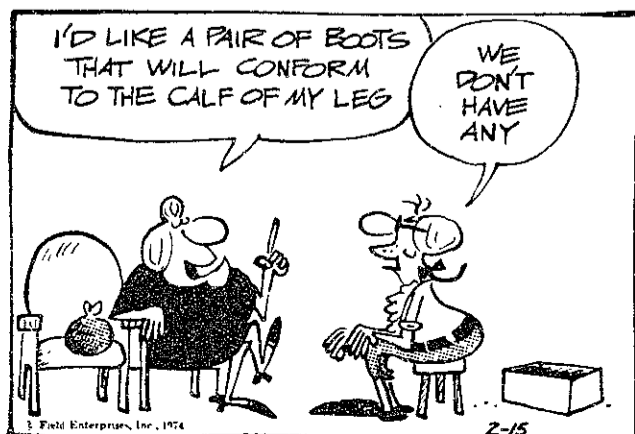
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### THE WIZARD OF ID



by Brant Parker and Johnny Hart



The Wizard of Id appears daily and Sunday in *The Boston Globe*

## NOTES

## Year-round calendar considered

\* The political science department is sponsoring a WASHINGTON INTERNSHIP program for students who want in government-related work this summer. The department has a limited amount of financial support for this work, and students who wish to be considered for such funding should apply to Professor Jeffrey Pressman, E53-421, x3-2449. Assistance can be provided for those students who need help finding a summer position, and applications are due March 15.

\* MIGRAINE: If you have diagnosed migraine headaches 2 or more times a month, or if you have severe migraine attacks at least once a month, and would like to participate in a program at the MIT Clinic to test a promising non-drug treatment for migraine, call the MIT Migraine Control Program, x3-2916.

\* Nominations for the Goodwin Medalist are now being accepted by the Dean of the Graduate School. Please submit the names of any candidates to Dean Irwin W. Sizer, Room 3-136, before Monday, April 1, 1974. Nominations may be made by any student or faculty member and submitted through the Head of the nominee's department, the Undergraduate Association, or the Graduate Student Council. The Goodwin Medal is awarded in recognition of conspicuously effective teaching by a graduate student who is either a Teaching Assistant or an Instructor. Further information may be obtained by calling extension 3-4869.

\* The Department of Music and the Fromm Music Foundation at Harvard present COMPOSERS STRING QUARTET, Sunday, February 24, 8:30pm, Sanders Theatre. Free and open to the public.

(Continued from page 1)

Finally, undergraduates will be able to enter the employment market during the fall, winter and spring seasons when better jobs might be available.

Wasleigh states in the report that "it is conceivable that the style and format of additional time spent at the institute each calendar year could be quite different than the "regular terms."

#### Costs May Be High

An increase in the faculty, facilitated by the extended program, could also result in an increase in undergraduate admissions. With the decline in applications over recent years, a larger admissions rate may reduce the quality of the student body.

An accelerated three-year program has disadvantages in that it would quash any opportunity for student psychological and physical release from Institute pressures. This may serve to exacerbate student identity crises by further insulating the student from the outside world during his tenure at MIT. In addition, it would re-enforce MIT's think-tank-factory image through the publicizing of three-year degrees.

Administrative problems are likely for the flexibility of course offerings. It would be costly to offer specialized, small enrollment subjects more than once each year. Student scheduling would be limited to specific semesters, which would not necessarily coincide with their personal on-campus programs. In subjects in which enrollment is large, were offered continuously, the faculty would have little time for evaluation and revision.

Many students might resent the year-round schedule as an impingement on their summer vacation time. The summer term could prevent them from pursuing high school friendships with students attending other schools as well as spending time with their families.

The Institute may not be physically equipped to convert to summer operations. Many residences and older academic buildings are particularly uncomfortable. Under the present energy constraints, it may be financially prohibitive to install an air conditioning system.

While efforts are being made to disseminate information on the twelve-month calendar to faculty members and solicit

views from the MIT community, the administration is investigating various aspects of the school's present summer operations. Although there are few regular subject offerings, about

60% of the graduate students are enrolled for the summer term. Most faculty also devote a large portion of their summer work to Institute-related matters.

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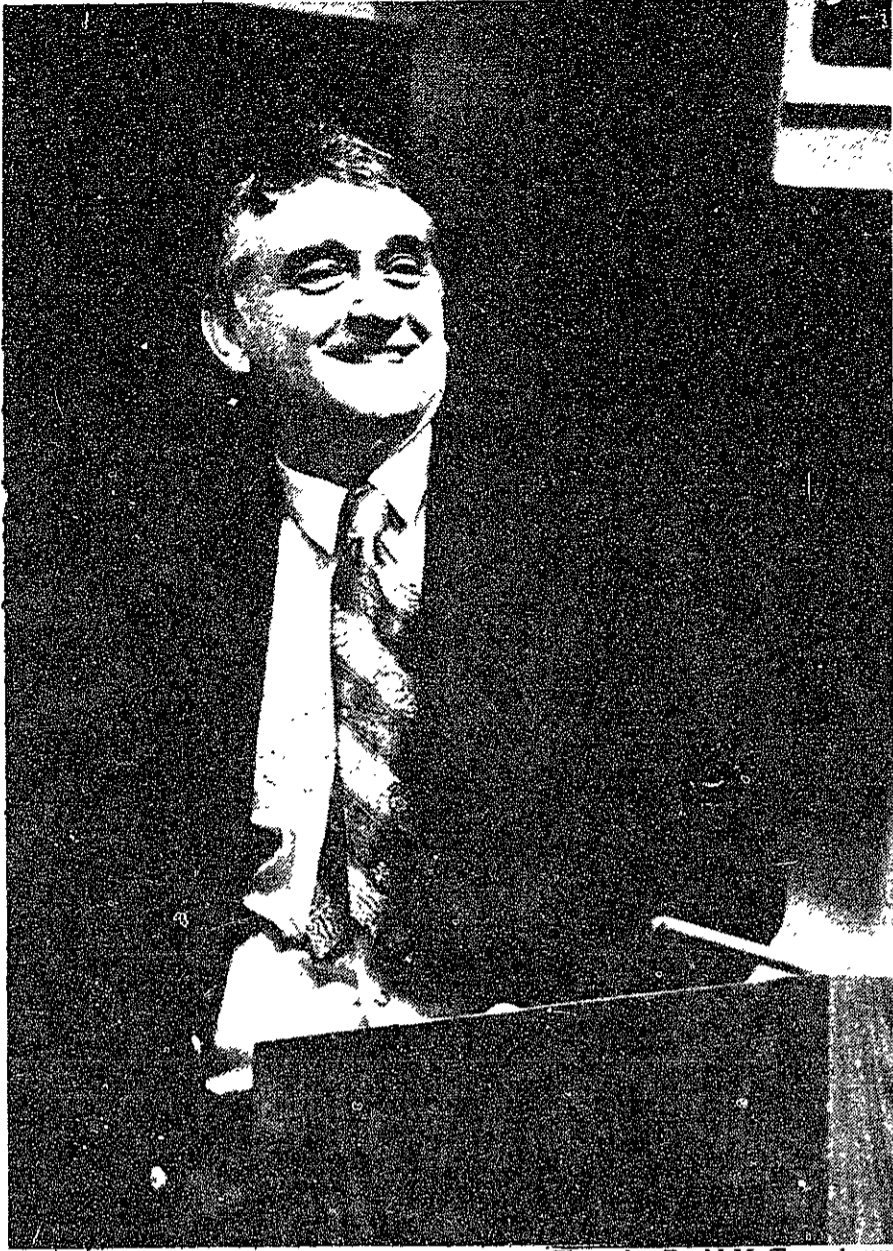
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Jerome R. Cox, Jr.

Photo by David M. Tenenbaum

# Medical industry discussed

By Stephen Blatt

Large government expenditures and an emphasis on developing technology led to what is now referred to as the "military industrial complex."

However, Washington University's Jerome R. Cox, Jr. '47, said Wednesday that the same thing has not happened to the medical industry.

"The United States does not have a medical-industrial complex," said Cox, who is director of the Biomedical Computer Laboratory at the St. Louis school.

Cox, noting that the medical and military professions have the same goal, "to stamp out death by natural causes," listed several reasons for the absence of a medical-industrial complex paralleling the military-industrial complex. He claimed that discouragement by the US Department of Health, Education and Welfare of industry involvement, decentralization in the Federal government and mutual suspicion between industry and medicine have stifled the growth of a medical-industrial complex.

The individualized nature of medicine has also hindered the development of such a complex, according to Cox. He explained that while military decisions are "made in the halls of Congress,"

medical decisions are generally made on a much smaller scale, by physicians and patients all over the country, and independent of one another.

However, Cox suggests that these obstacles "could be overcome by a medical-industrial complex worth its salt and a few gigadollars."

Cox received his BS, MS, and ScD from MIT in electrical engineering, and soon combined medicine and EE. In 1964, he was appointed Director of the newly formed Biomedical Computer Laboratory at Washington University. His current work is the design and application of small computer systems for use in clinical medicine.

"Twenty years ago, it was a rare and foreign experience for an engineer like myself to be involved in medicine," Cox said. "But the present size of the military-industrial complex makes one wonder what would have happened if physics and engineering had been turned with equal vigor to medical problems over the past thirty years."

"A gap exists between expectation and performance" in biomedical engineering, according to Cox. Technology has not sat-

isfied either of two major goals: to cut deaths and to cut costs. For example, Cox's project has been computer analysis of electrocardiograms (ECGs) to find ventricular fibrillations and other problems requiring quick attention. Trained nurses and doctors can easily detect these problems, with however the hazard of boredom and sloppy performances attendant upon watching an oscilloscope for long periods of time. Computer analyses, however, are less than 40% accurate. Monitoring of ECGs by first computers and then cardiologists have doubled the number of ECGs the cardiologist can read, without a measurable difference in mortality, but with an increase in cost.

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## News Analysis

### D-Labs move to Tech Sq; sticking close to MIT?

By Derrick Shannon

The recent announcement that the Draper-Labs will move into Tech Square is a further reminder of how closely MIT and Draper remain, even after divestment.

The news is still important enough to the MIT community that it is worthy of a front page announcement in *Tech Talk*. The relation is so close that MIT Vice-President Albert G. Hill is Chairman of the Board of Directors at Draper. And it is of note that one of the reasons cited by Hill for locating at Tech Square (which contains large components of Project MAC) is the close and continuing research and educational relationship with MIT which the lab enjoys.

The lab obviously expects to continue to enjoy this relation-

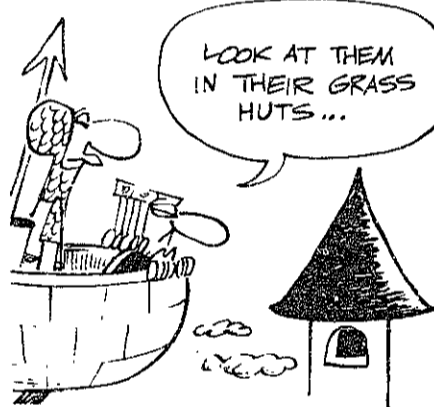
ship for some time into the future; otherwise they would not be building 450,000 square feet of building space.

MIT no longer has any role to play in the decisions of the D-Labs, and since the Institute no longer has any ownership interest in the Square, it has no influence over the location decision from that end either.

But serious questions are, or should be, raised by a decision so obviously based on the presumption of a continuing close future relationship. President Jerome Wiesner welcomed such a presumption, and hoped to enhance the joint educational and research activities of the two organizations.

What did divestment mean? A large portion of the community presumed it was a repudiation of the concept that operational weapons system development belonged on campus. Recently it was shown (*The Tech*, February 5) that growing inability of MIT to manage so large an enterprise as Draper was another major factor, if not the major factor, in the decision to split the labs off from the university.

If the former is true, close ties are inappropriate. If the latter, in light of recent statements, divestment means little, and the issues of war research at the University remain unresolved.



## Institute 'Energy Czar' will be appointed soon

(Continued from page 1)

life of the Institute." This position will therefore have enormous leverage on the MIT budget, which will more than offset his lucrative salary.

The first steps have been taken, Shepherd explained, to institute energy-conserving practices, but now procedures need to be established to follow up on these initiatives, and ensure that MIT does not slide back into the energy lethargy that prevailed when energy was cheap and easy to get. Already the job of supervising and keeping statistics about these policies is taking a significant fraction of the time of a ten-man committee constituted to deal with the emergency. The new engineer will assume this organizational burden and let the others get back to their jobs.

The decision to hire an environmental engineer was made last summer, when the contributions he could make to holding down energy costs were recognized, but before the current "energy crisis" could be accu-

rately foreseen. The crisis, however, brought with it a novel bonus in the form of a grant from the Union Pacific Foundation to pay the engineer's salary. The foundation figures that funding an engineer who will save MIT a million dollars a year is roughly equivalent to donating a million dollars a year to the Institute.

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# Food to join shortage items?

(Continued from page 1)  
 "Even as late as the 1930's or early 1940's, there was no population explosion problem in the developing countries. It was the importation of technology to reduce the death rate that caused the explosive growth."

Urban noted that past family planning efforts, whether they have been based on merely providing information, exhortations in the mass media, or even cash incentives, have been largely unsuccessful. Scrimshaw explained, "Family planning programs will have hard going as long as there is a high death rate." Parents in the developing countries, he added, often have large families to insure that they will be supported in their old age.

Urban then said, "The question, however, is not whether population growth will be controlled, but how it will be controlled. It now looks like massive starvation will be the means."

To prevent such a situation, Urban suggested a huge increase in money spent on family planning programs, more research on contraceptive technology, and improvements in the management of efforts to limit population growth. He added that, if the US is called upon to make large transfers of food to the developing nations, then "it might be self-defeating to make these transfers without requiring as a condition that more effort be devoted to birth control programs."

### More serious than energy

Scrimshaw noted that "the consequences of a food shortage are more serious than those of an energy shortage." In addition to the problem of outright starvation, there are the secondary impacts of malnutrition.

Poor nutrition, said Scrimshaw, "means a poor start to life. Malnutrition among young children now means the mental and physical impairment of the generation upon whom the developing nations must depend in the 1990's."

"When 80% of the income of people in developing countries is spent on food, what does that mean when the price of food doubles?" Scrimshaw asked.

Scrimshaw commented that there is a cyclical drought in North America every 20 years. There was a drought in the 1950's and the "dust bowl" drought in the 1930's.

"With much of the world dependent upon North America for food," Scrimshaw continued, "what is going to happen when that drought recurs?"

Brown noted that the world's main "cushion" against a disaster in food was the US grain stockpiles and the idle US cropland. "The US has virtually no stockpile left," he said, "and most of the US reserves of idle cropland were put into use either last year or this year."

Before 1950, most of the increase in food production

came from the use of new land, according to Brown, "Now, however, most good land is already in production, and increases in food output must come from more intensive use of the existing cropland."

Brown said that much of the land in other countries may soon be rendered useless for agricultural purposes. In Africa, "the Sahara is spreading southward, causing massive hunger." In Asia, "the pervasive deforestation of the Indian subcontinent will lead to serious problems in flood control." Brown said that more needed to be done to "develop the unrealized potential of cropland in developing countries."

The energy crisis has also aggravated the food problem. In addition to the problem of fuel shortages, said Brown, "fertilizer production has been significantly reduced, and the developing countries can't get the fertilizer

they need. Because of this, their crop harvest this year will probably be less than it was last year, regardless of the weather." Natural gas is a main raw material used in the production of nitrogen fertilizers.

Another problem, Brown noted, was the recent drop in the catch of fish from the oceans. "Overfishing has been a main cause of the collapse of the anchovy fishing off the coast of South America," Brown remarked. Fish meal from the anchovy catch had been one of the main sources of animal feed.

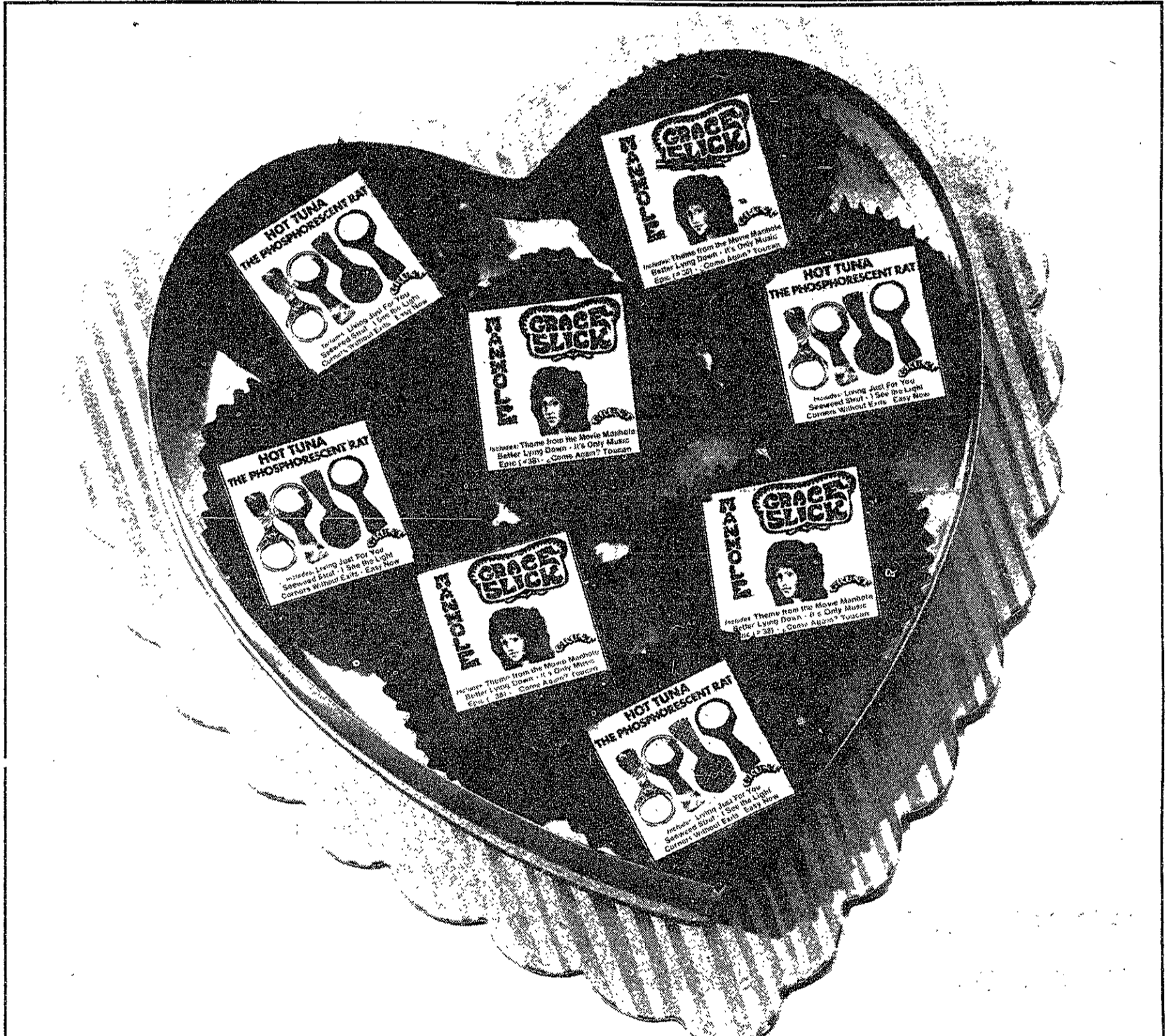
There are also problems with another main animal feed, soybeans. "We have not been able to increase the yield per acre very much," said Brown. Brown suggested that advances in this area could be made if the US which has advanced agricultural technology, and China, which has a great variety of soybean strains, pooled their resources.



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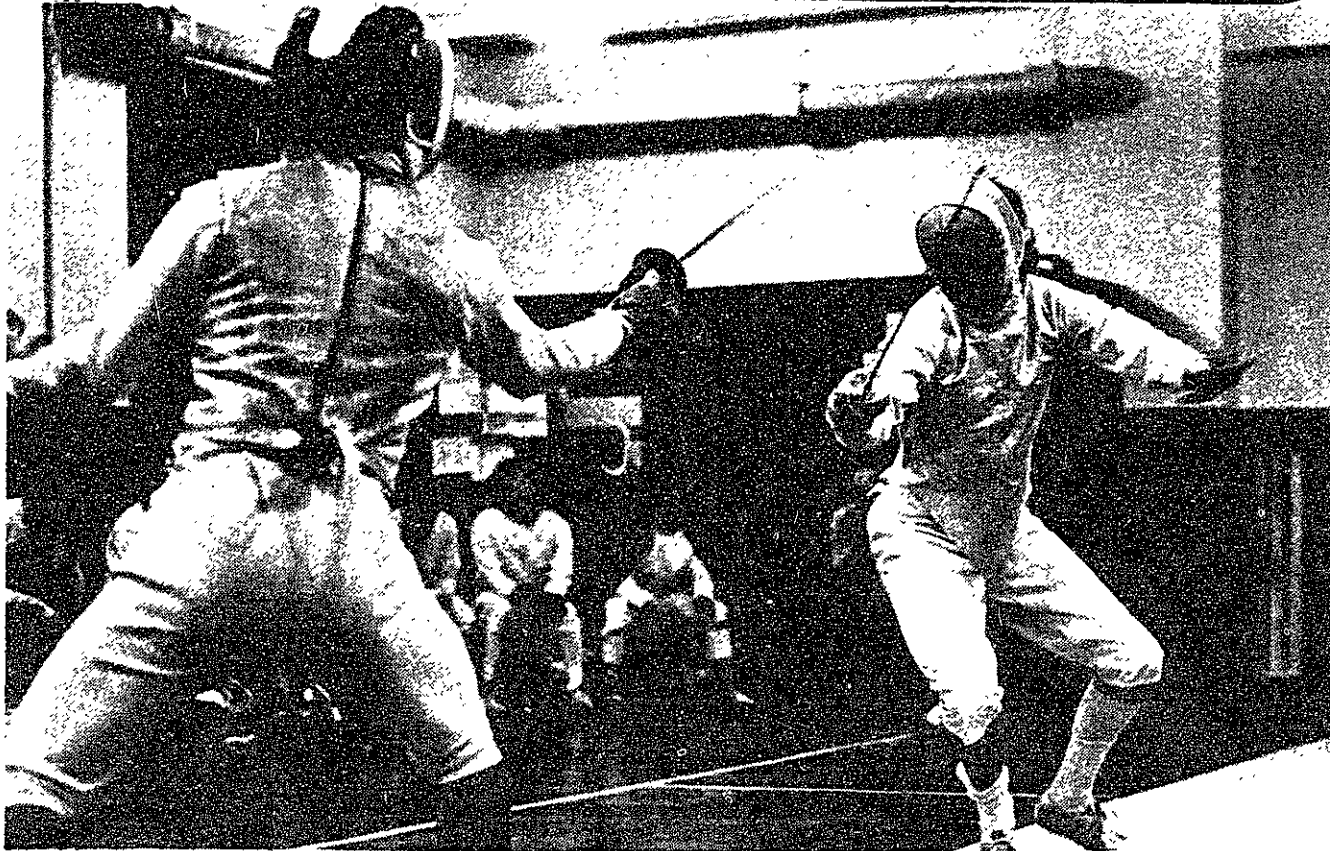
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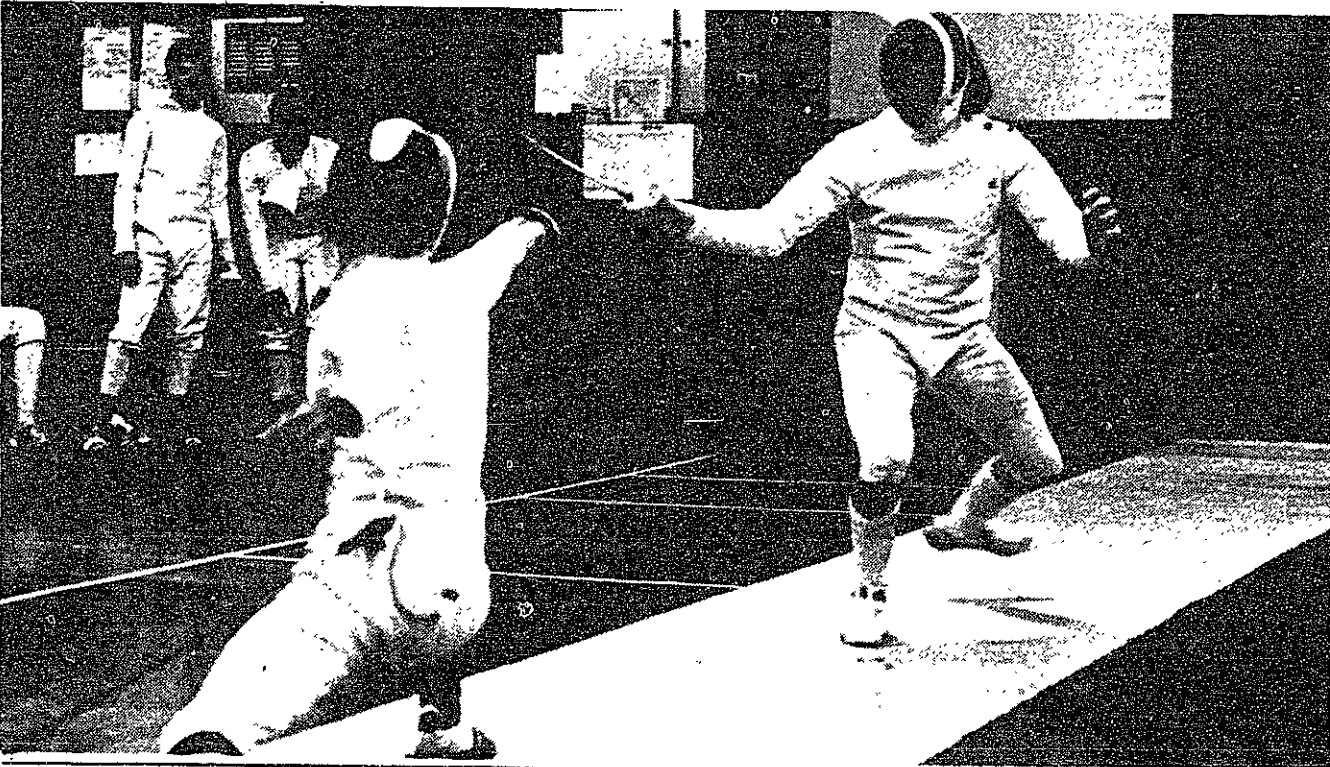
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# Sports



MIT Fencers battle Harvard

Photos by Robert Olshaker



## Maine routs cagers in Snakepit

By Glenn Brownstein

"Welcome to the Pit" reads a sign outside the University of Maine at Orono gymnasium, commonly known as "The Snakepit" due to its small court (ten feet short) and extremely enthusiastic crowds, to which many visiting basketball squads have become victims.

MIT was added to that ever-increasing list of Snakepit casualties Tuesday night, dropping a disastrous 94-51 decision to the Black Bears.

Actually, the Snakepit, while not quite as frightening as the name would seem to indicate, is rather peculiar in these days of modern 10,000 seat facilities and composition-surfaced courts. Basically, it is a small tile-walled gymnasium with highly sloped rows of seats and amazing acoustics that make a crowd of 700 (the number that attended Tuesday's game) seem ten times as large.

The Snakepit is a throwback to courts of twenty and thirty years ago, with its girded interior and ornate exterior, and its dated ticket booth and popcorn machine.

All of this, as well as the singing of the Maine fight song

accompanied by a standing ovation two minutes before each half begins, creates a highly charged, tense, and intimidating atmosphere. So intimidating, in fact, that no visiting team has taken the floor first for the pre-game warmup in over two years.

MIT did not break that tradition, but broke another instead. It was the Engineers' first loss to Maine, ever, and quite a decisive one at that, although at first it seemed as though things might be different.

Engineer coach Fran O'Brien game plan was to play a deliberate offense against the run-and-shoot Black Bears. For ten minutes the strategy worked as MIT held the ball for a good shot each time downcourt and scored most of the time.

Unfortunately, MIT's unfamiliarity with this style of play began to show, as the semi-stall disintegrated after a number of bad passes and traveling violations, turning a 10-10 tie with ten minutes left in the half into a 37-15 Maine lead at intermission.

The second half was mainly one of frustration for the Engineers as most of their passes and shots failed to click. With Maine's lead at 30 and growing, Coach O'Brien sent in the MIT bench to try and stem the tide, a maneuver that worked temporarily, but eventually even they were engulfed by Maine's excellent shooting and rebounding.

The final few minutes of the game were very disorganized as the Engineers, obviously outclassed, tried everything to make the score respectable, and failed.

High scorer in the game was Maine's 6-6 star forward, Bob Warner, who poured in 21 points, mostly on layups and inside jumpers. Warner added 14 rebounds, remaining second among New England players in that department.

Cam Lange '76 pumped in 14 points for the Engineers, while Peter Jackson '76 was high rebounder with nine.

MIT will attempt to shake off Tuesday's crushing defeat Saturday afternoon against Middlebury. The 4-16 Engineers will then return home to face Suffolk at the Cage Wednesday night at 8:15.

## Harvard defeats fencers; Streak stopped at eight

MIT's varsity fencing team saw its unbeaten string of eight come to an end last Tuesday night, collapsing in the final nine bouts to suffer an 18-9 loss at Harvard.

Despite the score, the meet was extremely close through the first two rounds of fencing, Harvard up by one after nine bouts, with MIT evening the score after the second round at 9-9.

At this point, the roof caved in as Harvard swept the last nine bouts, three in each weapon, to avenge a 15-12 MIT win earlier in the season.

Standouts for MIT were John Akerman '77 and Rich Riemer '77 who each contributed two victories in foil competition. Cong Park '75 and Robert Shin '77 picked up single wins for the

sabre team as did Chip Farley '75, Jim Cook '75, and Christopher Eckel '74 in epee.

The meet was particularly disappointing for freshman sensation Ackerman and sabre standout Park, victimized by numerous bad calls, both of whom suffered their first personal losses of the season.

In contrast, the MIT junior varsity showed a marked improvement over its earlier contest with Harvard, losing this time by only a single bout, 14-13. Especially encouraging were the fine performances of Bob Liu '76, Barry Williams '75, and Craig Johnston '77 in sabre and David Dreyfuss '76 in foil.

Tech's final home fencing match will be next Wednesday against WPI.

## Ski team fifth at Lyndon; Championships are next

This past weekend, the MIT ski team finished fifth in a field of nine schools at the Lyndon State Carnival. After being moved around northern New England in search of snow, the alpine events were finally held on Friday at Mt. Watatic and the nordic events were held on Saturday at Lyndonville, Vermont.

In slalom, three skiers, John Nabelek, '74, Debbie Stein '76, and Gary Ruff '76, scored for the team, finishing among the top fifteen. Drew Jaglom '74 and Marshall Fryer '77 also put in strong runs. Plagued by several falls, the alpiners were unable to score in the giant slalom event.

Saturday's nordic events were more successful despite the fact that the team competed without its number one cross-country skier, Scott Weigle '74, also a strong jumper. Bob Collier '74 finished fifth in ski jumping with distances of 96 and 98 feet. Evan Schwartz '75 finished 10th with jumps of 86 and 90 feet.

Saturday afternoon, the cross-country team showed its strength with finishes of second and third by Steve Ryan '77 and Collier respectively. The second place finish was Ryan's first

intercollegiate race; Collier's third place showing left him tied for first place in nordic-combined points. Dennis Wetherall '77 and Tom Gaskin '76 also ran well, finishing in the top twenty.

The division II championships will be held this Thursday, Friday, and Saturday at Norwich University in Vermont. This team will be skiing together in full force for the first time this season and is anticipating a strong finish. The first place team and the top five individuals in each event will qualify to compete in the division I championships next week.

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#### Saturday

Basketball (V) Middlebury, away  
Fencing (MV) Trinity, away  
Gymnastics (MV) Dartmouth, home, 7pm  
Hockey (V) Assumption, home, 7pm

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