



(Photo by Dave Vogel)

Discussion probes GA ineffectiveness

"Destroy Student Government" the posters read, so twenty faculty, students, and administrators met in the Student Center Monday night to discuss the future of student government at MIT.

None of those present were disposed to take the poster literally, but much of the sentiment expressed ran strongly against the present General Assembly structure.

UAP Greg Chisholm was satisfied that the gathering had produced some useful ideas. Chisholm, Tom Pipal '71, Larry Dagate '74, and Bill Orchard '74 are reviewing student government during IAP as it relates to the MIT Commission report.

Chisholm alternative

Several participants offered alternatives to the current structure. Noting that often the GA representatives lack the respect of their constituents, Chisholm proposed substituting occasional (three or four times per term) meetings of house and fraternity presidents. These leaders are usually picked for their responsibility, and might provide a much

more valuable source of student input to campus decision-makers.

Electrical Engineering Chairman Lewis Smullin warned that some representative structure
(Please turn to page 7)

Prof. explains 'conversion'

By Lee Giguere

A desire to combine teaching with hardware design and development, coupled with uneasiness about the expanding scope of missile development, led Professor of Mechanical Engineering Robert Mann to terminate a successful career in missile component development and to become engaged in the field of human rehabilitation.

In a seminar last Thursday, Mann attributed his "conversion" in large measure to a series of accidents.

The missile industry in the late fifties was becoming a multi-million dollar enterprise, Mann explained, and it was impossible for a group operating at

MIT to compete. As a design engineer, he was primarily interested in developing hardware, and at MIT, "You can't develop extremely large hardware." Rather than give up teaching, Mann began to look for a new area to pursue. Urging on this choice was his own growing "uneasiness" with missile development.

First involvement

At the same time, John DuPress, a disabled, blind World War II veteran, was encouraging people at MIT to move into the field of bio-engineering and human rehabilitation. Mann became involved in a survey of prosthetic devices and then be-

gann to work with sensory aids and prostheses. Mann explained that this "was a more difficult row to hoe," arguing that there was just no comparison between the
(Please turn to page 7)

The Corporation Executive Committee then accepted all but the first of the CJAC recommendations and directed MIT's votes by proxy.

This year's on-campus group, including Dave Burmaster and Steve Carhart, is still in the initial stages of organization and has taken no action as yet. Burmaster said that the group is still "doing its homework" and declined further comment on their plans.

Campaign GM presently holds a low priority on the CJAC agenda according to Randy Hawthorne '71, student member.

GM to face 2nd challenge

Campaign GM has begun to re-organize in preparation for the General Motors shareholders meeting in May.

The national group's proposals are: 1) require the GM proxy statement to include candidates for the board of directors nominated by shareholders at large as well as by management, 2) allow each of GM's three "constituencies" - employees, consumers, and dealers - to nominate a candidate for the board of directors, 3) require the GM annual report to publish detailed information regarding company progress in auto safety, minority hiring, and non-polluting vehicle development.

Campaign GM is supported by the Project for Corporate Responsibility (PCR) which owns some twelve shares of General Motors stock. PCR is a Nader-type consumer advocate, but is not directly connected to Ralph Nader.

The main thrust of Campaign GM's arguments is that while large corporations exert a strong influence over the lives of the general public, they are almost totally exempt from public control in setting their policies.

Last year's proposals, while

soundly defeated at the annual shareholders meeting, cannot be said to have had no influence on GM. PCR called for the creation of a special shareholders committee to review GM's actions in areas of public concern. In the months after the meeting, the GM Board of Directors established a special subcommittee composed of board members not directly involved in the company's management to consider just such issues. MIT Corporation Chairman James Killian is a member of that committee.

Another defeated proposal had called on GM to add three "public representatives" to its board. Just this month, however, GM elected its first black director, Leon Sullivan, pastor of the Zionist Baptist Church in Philadelphia and a nationally-known leader in the training of blacks and other minorities for work in business and industry. Sullivan has stated that he will use his job to find more and better jobs "for my people and other minorities." (In fact, out-going MIT Chairman James Killian has also been a public representative on the board.)

At MIT

Last year at MIT, the Cam-

Gray argues for flexibility

By Alex Makowski

Newly-appointed Dean of Engineering Paul Gray last week outlined his proposals for an educational system attuned to the needs of MIT undergraduates.

He advocated incorporating within the engineering school flexible alternatives - self-paced study, unspecified engineering degrees, approximate interdisciplinary foci - while suggesting that MIT concentrate on providing the foundation for a professional education while leaving the more vocational training to graduate schools or future employers.

Co-op and work/study programs, he concluded, might provide a valuable bridge between educational programs and work experience. A Bush Room audience of 70 or 80 people, three-fourths of them students, warmly applauded his address.

Framework

"Objectives, dilemmas, and opportunities" formed the framework for Gray's remarks.

For the first category, he listed the three student needs an undergraduate curriculum must fill: 1) such basic skills as mathematical ability and facility with models, 2) an appreciation for real world engineering applications, and 3) individual independence.

Of the three, the last one is the most important. Gray described it as "the capacity for sustained self-education," the ability to formulate important problems rather than merely providing answers to other people's questions. Another aspect is an individual sensitivity to the need for self-renewal as research and new applications within one's field continue.

The listed order for the objectives carried more information. Gray explained that the sequence corresponded to the chronological progress of a student's education. Furthermore, the move from skills to applications and on to independence marks a gradual de-emphasis on curriculum content and an in-

creasing stress on the style of education and the mode of encounter between the student and his material.

Three dilemmas

But three dilemmas must be resolved before the three objectives can be successfully implemented: 1) the "ecological trap" of a too total adaptation to learning basic skills blocking a student's progress to creative independence, 2) faulty future predictions may outdate a student's education before its use is possible, and 3) the clash between individuality and efficiency.

The desirability of relying on student initiative to develop problems keys on the efficiency/individuality dilemma. Much can be gained, Gray pointed out, by helping students create their own problems, rather than providing an entire class with one or two stock investigations.

Alternatives

A list of several alternatives, opportunities for change, rounded out Gray's remarks. Flexibility in plan and depth, he began, could lead the way to a better education in the basic skills. Not all students in a large class proceed at the same rate; self-paced courses in introductory physics and math could provide a useful model for early engineering subjects. Central to their success, Gray argued, is the necessary separation of learning/
(Please turn to page 6)

Ehrmann looks back on political career

By Curtis Reeves

At times he seemed to be the only island in the sea of student apathy. For Steve Ehrmann, this current term of work with the Institute of the Future in Middletown, Connecticut, in conjunction with the Cooperative program, marks the end of three and one half years of direct involvement with student government at MIT. I talked with Steve as he was packing his trunks, and discussed with him his days in undergraduate politics.

Like most freshmen, Ehrmann did not intend to get involved with student government, instead he had wanted to work on the staff of one of the campus newspapers. With no idea of the things to come, he became one of the ten Freshman Council representatives from Burton House and was chosen to be the Field Day chairman for the Freshman class. From this beginning he launched a personal campaign for activism that made him one of the best known, if not most popular, students on campus.

In March of his freshman year, Ehrmann was convinced by some of his friends to run for the presidency of the Class of '71, although he was "very nervous about taking on new things." Still, he says, after being assured that the idea that his grades might suffer if he were elected was "garbage," he decided to stay in the running. "I won that one by about twenty-five points," he recalled.

While listing the various General Assembly task forces and

committees on which he has served, Ehrmann noted that such groups could wield a great deal of influence, were they not plagued by disinterested memberships who think that solutions to the problems that they are considering are too long in coming. "It's these things that are hardest for the GA to see; it's in areas like that where GA has more power than it realizes."

Expanding on the topic of the GA, we delved into Ehrmann's personal role in the organization. He refused to say whether he thought that he could have defeated his partner, Wells Eddleman, for the top post, but quickly added, "I think that it would have been a mistake to run against him."

Of the mistakes he has made he is painfully aware. "We waited too much for people to come to us," he said in describing some of the earlier shortcomings of the Eddleman-Ehrmann ticket. "If I were starting over again I would press for doing things a little differently. If the coin toss (that determined that Eddleman would run as UAP and Ehrmann would fill the number two spot) had gone the other way, I might have been able to work things sooner." This was in reference to his two week period as UAP in the middle of December, which was made possible by Eddleman's resignation.

When Ehrmann decided to go on Co-op, the problem of finding a successor arose. While talking to Wells it was decided that they would ask Greg Chisholm
(Please turn to page 7)

Boston's innovative Museum of Science:

By David Searls

(Ed. note... This is the first of a two-part feature on the Boston Museum of Science, dealing with the history of the museum and its philosophy. Next week, part two will examine the Museum today - its work in the field of education, social responsibility, finances, and plans for the future.)

"... there is reason to fear that the very success of science may promote a new species of superstition and intolerance based upon a misunderstanding and misapplication of science... people who are not

from their awareness a knowledge of important developments in science are culturally illiterate."

- Report of the Commission on MIT Education. The Commission's report goes on to state that, in addition to the humanization of scientists, MIT and other scientific communities should but too often do not concern themselves with familiarizing the public with the true abilities and shortcomings of science and technology. For

to the general public - the museum of science. Ideally, it combines the "readability" of the mass media with an abiding concern for education; it is popularization without neglect of underlying principles.

The Boston Museum of Science has been called the finest of its kind in the country by directors of other museums. While this is undoubtedly high praise, it is also true that there are now very few museums like it in the world and, of these, it was the first. What makes it unique are a number of innovations which have been introduced over the years (which are being unashamedly copied by other museums), all of which are more or less directly attributable to the present director, Bradford Washburn. Of the century that the Museum has existed in name, it has been during the last thirty years that, under his auspices, it has flourished and absorbed his dynamic personality.

The Museum itself began quietly in 1861, by an act of the same Massachusetts legislature that established MIT. For nearly seventy years it remained a tranquil repository of carefully labelled rocks, bones, and the like, occupying a site on Berkeley Street adjacent to the old MIT campus in downtown Boston.

Dr. Washburn was named Director of the Museum in March, 1939. His early interests had been geology, geography, and cartography, though he had graduated from Harvard '33 in French History and Literature. "I decided I would rather have my years of concentration in a field that I was interested in that had nothing to do with what I was going to do later... I thought this would give me a little bit broader-gauge approach later on, and I had just enough distribution so that I was subsequently able to get an AM in Geology."

After graduating, Washburn pursued yet another interest, mountain-and-glacier-climbing, by traveling several times to Alaska and the Alps for exploration under the auspices of the National Geographic Society. He first became associated with the Berkeley Street Museum in 1938.

"Things were pretty dreadful. The building had been built in 1860, and the exhibits hadn't changed since then. The director was really only interested in mineralogy, which was his own field, and the number of people coming in was just 35 or 40,000 a year. They finally decided to either get a new director and straighten things out, or just go bust and give the collections to Harvard and MIT."

After becoming Director, Washburn made a lengthy study, interrupted for four years by the war, which finally resulted in the decision to sell the old building and begin work on a modern

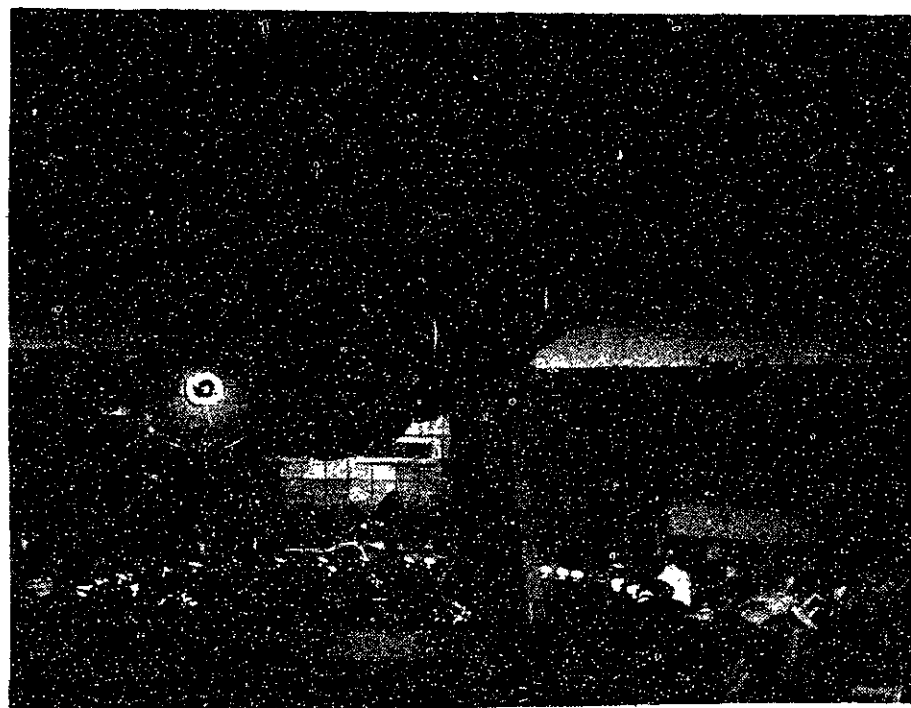
structure on the site of the Charles River Dam. It was completed in 1951.

"Basically, the result of the study was that the move all over the place was away from having a museum a three-dimensional textbook, where you stored things. Way back, in the sort of Darwinian Era, a museum was really a kind of three-dimensional dictionary of sorts, where you had glass cases, and things were put in an orderly way, protected, and labeled. We had a Hall of Rocks and a Hall of Minerals on Berkeley Street, really extraordinary collections, but there was nothing in the museum that said that those minerals went together this way to form those rocks. Then the move that took place quite rapidly, beginning about 1920 or so, was to get away from having a museum as a dictionary, and making it a textbook. This was quite a step because in a textbook, of course, you don't tell all about everything - you're more selective - but it still is presented in a very orderly fashion. You had then a Hall of Geology and a Hall of Biology and a Hall of Earth History and in all these Halls, as the psychologists will tell you, you will come in the door and you turn to the left and you go all the way around, this hall and you read all the labels. If its a Hall of Physics, you start out here with the wheel and the

world we live in. If somebody should ask, what is science, I'd be inclined to say it is what we think at any given moment to be the truth of our understanding about our surroundings. This is constantly changing, and this is one of the problems of a Science Museum - that science is in a constant state of flux, because what we consider to be the truth about our surroundings is in a constant state of flux since we're always learning more things about them. Therefore, our theory of a Science Museum was to embrace a great deal more than the Natural History Museum. We had no planetarium in Boston at that time, no Museum of Science and Industry, and we had no Museum of Public Health - and this is one of the great medical centers of the world.

"It's very interesting to see how few natural history addicts will go into a Museum of Science or Industry, and what a large number of physical scientists or mathematicians will go into a natural history or art museum.

Quite aside from the fact that it makes educational and administrative sense to have these things together, we've found that there are lots of people who come in here to study nature or some aspect of it, who will look at their watch and say 'Well, we've got another hour until lunch or until the place closes



scientists and know very little about science wake up to learn of miraculous new scientific discoveries or technological applications, some seeming to promise immortality, other threatening apocalyptic destruction... those who deliberately exclude

whatever reasons, it is the unfortunate truth that most of the communication of science short of an extended formal education is restricted to the mass media, which seem for the most part to contribute to rather than mitigate the sometimes harmful mystique that surrounds science.

But lying somewhere between the Reader's Digest and an MIT degree is an often-overlooked vehicle for the transmission of scientific principles and progress



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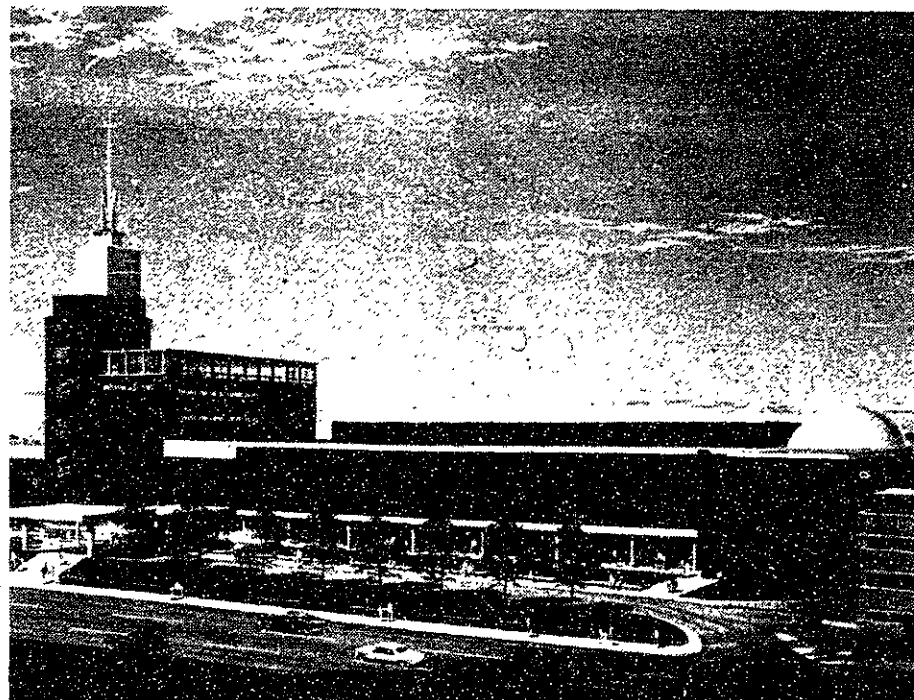
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inclined plane and you end up here with an atomic power plant. The Berkeley Street building was back in the dictionary era, and was just an anachronism. Also, it had been built to house exhibits on this system, so that if you wanted to change the exhibit system you were powerless to do so, because the roof was literally supported by the walls of the old exhibits. So we finally decided to sell the old building and just get out.

"We decided, then, that we would make the building a new one and call it a Museum of Science, instead of a Museum of Natural History. You've got to remember that back in this period when you talked about natural history you were talking about science - they were just synonyms - and you were enquiring about the facts of the

and why don't we take a look over there at those exhibits on space or let's go into the planetarium' who would never have done it if they'd been in two separate buildings. They just come into this by happenstance."

Perhaps the most notable aspect of the Boston Museum of Science is its concept of smorgasbord in the display of exhibits, another of the policies initiated by Washburn.

"A lot of people, mainly a group of professional people teaching science, are very up-tight about the heterogeneity of our exhibits or the lack of precise order in their arrangement. This has not grown up by happenstance at all. One of the things I've tried to do is to visit as many other museums as I could - science museums and art museums - to see why they do what they do and how the public reacts; I think the great majority of the ideas we present here have been stolen from other people.

"There are two things we've learned that are very interesting. One is that if you go into these orderly, three-dimensional textbook museums - and the most beautiful example is the Duetsches Museum in Munich, which is the top quality science

(Continued on opposite page)

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Stimulating an awareness of technology

(Continued from opposite page) museum in the world, and has been for many years — you find that people don't do what they're supposed to do. When they come into a hall, they don't turn to the left, the way the psychologists say, and carefully read all the labels to all the exhibits. You're in trouble then, because you can't just open a textbook to chapter five and start reading; your handling of chapter five depends on your knowledge of the first four chapters of the book.

"If you come into this room, like you do at the Deutsches, and you're a 12-year-old, and you see seven little boys at exhibit five, you go straight to exhibit five. You don't know how they got there — they may have carefully studied all the other exhibits — the thing is that they're there, and they're grinding a crank or pressing a button, and you go over and join them. You may or may not read the label — you toy around with this thing, and it's sort of fascinating.

"This is something we ran into everywhere we went: people weren't doing what the professors said they would do or should do. The exhibits in the Deutsches were extraordinary — hundreds of thousands of dollars spent on them, with the top people in Germany providing the money and the knowhow, and it made you sick to see people not looking at them in anywhere near the way in which they were put together.

"Then the Eli Lilly Foundation gave us a gift about 15 years ago to study our visitors and see why they came here, what they liked and what they didn't like. A couple of fascinating things came out of this survey. One was that the majority of people insisted that they did not come into this museum to learn — this really shook us up. Secondly, they didn't like sequential exhibits. They said they didn't have time to study them, and their children didn't want to study them. The things they liked most were packages of information, rather than chapters of information.

"They almost all seemed to say that they wanted to get out of the house, and they liked to do things — and this is, to my way of thinking, the most important single thing we're doing now — they liked to do things as a family group, and this was one of the places they could do it.

"Out of this general background, our present philosophy began to develop, which is to have a museum that does not give you a three-dimensional course in science. This is what some of the big ones like the Smithsonian or the Deutsches either do or attempt to do.

Part of the reason for this new philosophy comes from MIT. When we were trying to make the move over here, and I'd gone to the Massachusetts legislature in 1948 to try to lease this property from the state, Karl Compton was one of the original honorary sponsors of the project, and I went over and had several stimulating talks with him. One of the things I remember most that he said was to 'be very careful not to try to tell all about science, because if you do you'll be lost.' "He said 'I can make this more graphic by saying what will happen. You'll have to start somewhere, and you'll build a third of your building, and you'll make selec-

tions and you'll put this material in it. As you start to build the next third of your building, you'll be faced with a major decision, because the first half of that third that you've built will be obsolete.

"Are you then going to go back and update the first half of the first third, or are you going to go ahead with the second third, and ignore this? And when you're done with the second third, half of what you've got will be obsolete, and then what are you going to do? And furthermore, the whole thing would be hopeless, because you could build a museum all the way down to the subway bridge before you covered a half of science anyway, if you did it on that scale."

"Therefore, what we have tried to do and are doing now is first, to build a building that is just as flexible as we can make it so that if our current exhibits program makes no sense ten years from now — and this thing has changed two or three times already — we won't be stuck with the problem we had on Berkeley Street. I was delighted, in a way, to have had that ghastly experience of operating for a couple of years in a building that was wrong, and totally inflexible.

"Now with a flexible building, and high ceilings, there can be rapid, relatively inexpensive change in what you do in the building. Secondly, we have a program the objective of which is the opening of people's eyes to the wonders and fascinations of the world that we live in, rather than telling them all about it. If our job is exposing people to this, and encouraging the kids to ask questions, and stimulating creativity, then we think that the way to do this is with a heterogeneity of exhibits rather than having the thing a hall of this and a hall of that.

"You can wind up with a diarrhea of exhibits, of course, and of this one has to be very careful — right now, this museum is bordering on a diarrhea of exhibits. What we really are at the moment — I hate to say it — is a warehouse of exhibits that is open to the public, because we're a year behind on our construction schedule, and all the new exhibits are stored by jamming them in with the other exhibits.

"We are not totally getting away from textbook type exhibits. It's very evident to us that if you have heterogeneity, it can't be all little bits. I think people like a change of pace, anyway. They like big and small things. As Dr. Avinoff of the Carnegie Museum in Pittsburgh once said to me, they love little things made big and big things made little more than they like the real things. He pointed out to me that if you took a honeybee and put it on a pin, nobody would really pay much attention to it; but if you took a honeybee and made it this big, everybody would be fascinated by it.

"So we have got and we're going to have some quite sizeable packages on one subject, like the heart. The heart exhibit

in itself, though, doesn't tell you all about the heart. It tries to tell you what the top heart people in New England felt were the important things to tell people



about their hearts. The thing that interests us about this is that people do go through it in an orderly way. My contention is that if you tried to tell them all about their heart they'd become discouraged and wouldn't do it. But if you take the important things about your heart and present them in a reasonable order, it's fascinating to see how many people will go around and read the labels and study it in order.

"We've done this with birth, also. We've tried it with gas; we put a lot of money in this, and it's a total failure. So few people visited it, you'll be amused to know, we moved the telephone exhibit down opposite it because we knew it drew large numbers of people and we thought they might stumble into the gas exhibit, but they still won't go into it.

"That exhibit is a perfect example of one that was put together by a committee in just exactly the right way — we had the top people in this area on gas and they sat down with our education department and they worked for two years to make this the best gas exhibit that anyone ever had anywhere, and it is so bloody orderly that nobody wants any part of it. It's too educational. So it shows the delicate razor's edge you work on — if you try to be too orderly and too educational, people don't want it, and if you try to have too much of a smorgasbord, there's no solidity, no substance to it, and people don't want that either. All the way along you make mistakes that you have to correct as fast as you can."

In light of the fact that, of necessity, the Museum is a popularization of science, and that the facts are presented in the somewhat haphazard smorgasbord manner, *The Tech* asked

Dr. Washburn just how much of an improvement the Museum is over the mass media in terms of communicating science while minimizing its remoteness and

an outstanding job in public understanding or projection of science. Four years ago, we gave it to Gerry Piel, the head of Scientific American, who has done an extraordinary job with that magazine, starting with nothing at all. After he got the prize, one of the things he said was that in a world where today it is almost impossible for us to get anything first-hand — we see things through television, we hear them through radio, we read about them in books — it is very refreshing to come into a place where you can see the real thing — something that's three-dimensional.

"I think that in this evanescent, never-never world that you get in television — and I'm not opposed to television, I think it's doing an extraordinary job — there have got to be some places where you can still see things. People have urged us to have more and more projectors and movies and two-dimensional stuff of this sort; I go back to the experience of another big museum out West, where they had done just this. They had a good many exhibits of this sort, but people didn't use them and they asked why. They made the simple statement: 'If we wanted to go to the movies we'd go to the movies; if we come to a museum we want to see things.'"

mystique in the eyes of a relatively non-scientific public.

"Let me give an indirect answer to this that might be of interest. We give an award each year to somebody who has done

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When the Corporation first began its search for President Howard Johnson's successor, there was a great deal of interest expressed in the community in the selection process.

The Corporation, however, has been negligent in keeping this interest alive. When the selection committee was first named, the community expressed strong disappointment that it was composed wholly of Corporation members. While the Fisk Presidential Selection Committee announced that it was seeking community input, and even called upon the faculty to set up its own advisory committee, interest quickly waned. The question of who should be MIT's next president dropped from sight.

In the intervening months, the selection process has most certainly moved ahead, but the committee's considerations have remained secret. The Fisk Committee has made no effort to invigorate the community's flagging interest in the decision in spite of the fact that the success of their efforts will rest in large measure on the community's reaction to their choice.

The Committee, it would seem, has been negligent in serving the interests of the MIT community. They have taken the easier of two roads and have been able to avoid controversy, but they have also avoided involving the very people who will be most affected by their choice.

Certainly no one expects the committee to put up for community debate every name they consider. Such an action would make their job overly difficult.

There can be no good reason, however, why the Fisk Committee never chose to discuss their selection criteria with the community. By taking the initiative, and presenting to the community their conception of what the office called for, they might have prompted significant input from students and faculty, without significantly hindering their later efforts.

Before their final decision is declared to the community, it seems imperative that the Fisk committee act now to prompt fresh input from the community. Open discussion of their criteria could serve not only to aid their own work, but would provide important guidelines to a president-elect on what the MIT community will expect of its new president. Perhaps this might save someone from untold mental anguish should he take the job without fully realizing the temper of the community.

Finally, such a discussion would serve to strengthen the credibility of the nominee within the community. They would see him not as the manufacture of a hidden authority, but as a creation of their own, fitting their needs.

Guest column: Slumlords— an urban blight

By John Gunther

We're taught in 14.01 (for the uninitiated, that's Economics Principles I) that rent control is a bad policy because in the long run it lowers the housing supply below the demand. And indeed, this seems to be the case in New York City, where, after two decades of rent control, thousands of units are being abandoned each year by their owners.

Economically sound as this argument may be, though, it offers no alternatives for protecting the tenants in an area where housing demand exceeds the supply, a situation which exists in virtually every city around the country. It is no wonder, then, that harried urban politicians, beset by their constituencies to protect them from unethical landlords, enact rent control statutes which often prove harmful in the ensuing years.

The tenants can hardly be blamed for wanting rent control. They can't be expected to know Economics Principles I. And many of them are being victimized by greedy, ruthless landlords. Many others live in constant fear that a sudden change in ownership of their residence will subject them to the frequent, arbitrary rent increases and deterioration of services that a "slumlord" inevitably brings.

There is nothing inherently evil in being a landlord, yet it is a position of power and, as such, attracts men who, in the course of their pursuit of material gain, will suffer their fellow human beings to live in misery. This is not to imply that all, or even most, landlords are slumlords. Many uphold the obligations implicit in a landlord-tenant relationship and indeed some are victimized by unscrupulous, transient tenants.

Lest anyone feel sorry for the poor landlord who is forced to roll back rents to the March, 1970 level in spite of the rising tide of inflation, let one well-documented example serve to illustrate his "plight."

Near Central Square, just north of the Simplex properties, about ten minutes' walk from MIT, stands a large dilapidated apartment building. Containing sixteen apartments in various

states of disrepair, it is not a place where any concerned parent would care to rear children. The hallways are covered with years of dust; the lighting is inadequate; the chipped and cracked paint valiantly tries to mask the chipped and cracked walls. Three neighborhood alcoholics call its stairwell home and their living conditions are on a par with those in some of the worst apartments.

The landlord (call him Mr. K for convenience) doesn't have to worry about the apartments appealing to families. No family in its right mind would pay the \$175-200 asked for those apartments. Instead, he rents to students and former students who reluctantly triple or quadruple up to bring the rents down to a level they can afford.

One would think that Mr. K would not begrudge his tenants proper maintenance on a building which grosses \$36,000 per year in rents. Yet this is not the case. It takes between five and ten phone calls to persuade him to send a workman to do even the most minor repairs. When the workmen do show up, they are so incompetent and sloppy that the tenant often wishes they hadn't come at all. In addition, the workmen are suspected of pilferage from unoccupied apartments, and once a plasterer stabbed a tenant in a misunderstanding over an open window.

The tenants, being resilient, took these difficulties in stride. But when, shortly after rent control was enacted in Cambridge last October, the landlord personally visited each apartment and made it clear that, law or no law, he would expect a twenty-five dollar increase in the monthly rent, the tenants became enraged.

The tenants, in return, called for a Health Department inspection of the premises in which over seventy five violations were noted. Mr. K, given thirty days to correct them all, took sixty to do wholly inadequate repairs in about one quarter of the apartments. The inspector who came to certify that the repairs had been done, (one of the most honest, but overworked, in the city) allowed Mr. K to show him only those apartments which had been fixed up slightly, and then certified the whole building. The tenants have now organized and are pursuing the landlord on several fronts, using both legal and political means.

The above example has been described in detail to illustrate that without some legal protection tenants can be harassed and exploited without limit by the landlord, if he so chooses. Rent control may be bad in the long run, but in view of the urban housing shortage, something must be done to protect the tenants from inflated rents in the short run.

Marblehead

My lover,

Have you ever been to the beach at Marblehead?

Where the huge rocks stand sturdily arrayed, and the cliffs jut out into the sea itself.

Where the onrushing icy waves alternately batter the rocks senseless and then sweep over them, burying them from view.

Where foolish old men put up "Private Property" signs, as if they could ever keep the power of the oceans for themselves.

From the top of the cliff overlooking that beach, at low tide, the lowest of the giant rocks were suddenly unprotected and visible.

And from my perch atop that Colossus of Rock, I saw, smashed beyond life, on that lowest of the giant rocks, the bird of peace and the flower of love. And then the ocean reclaimed them.

And brought with it, its usual dull roar of calm, obliterating, as always, the sounds of war from across the seas.

And, as always, it failed to still the rage within men. The pounding on the rocks below, now renewed with vigor, rather reinforced this rage, as if to remind one that this was no sandy beach, nor would it ever be.

Restless, I abandoned my bystander's status, and clambered recklessly down to be amidst the fury.

As the waves swelled round, the rocks that had dried up in the morning sun lay perilously open to the sea, and were engulfed by the tide.

As a part now of this setting, the sea first dragged me from the rocks, then returned to smash me helplessly against them, hidden as they now were beneath the waves.

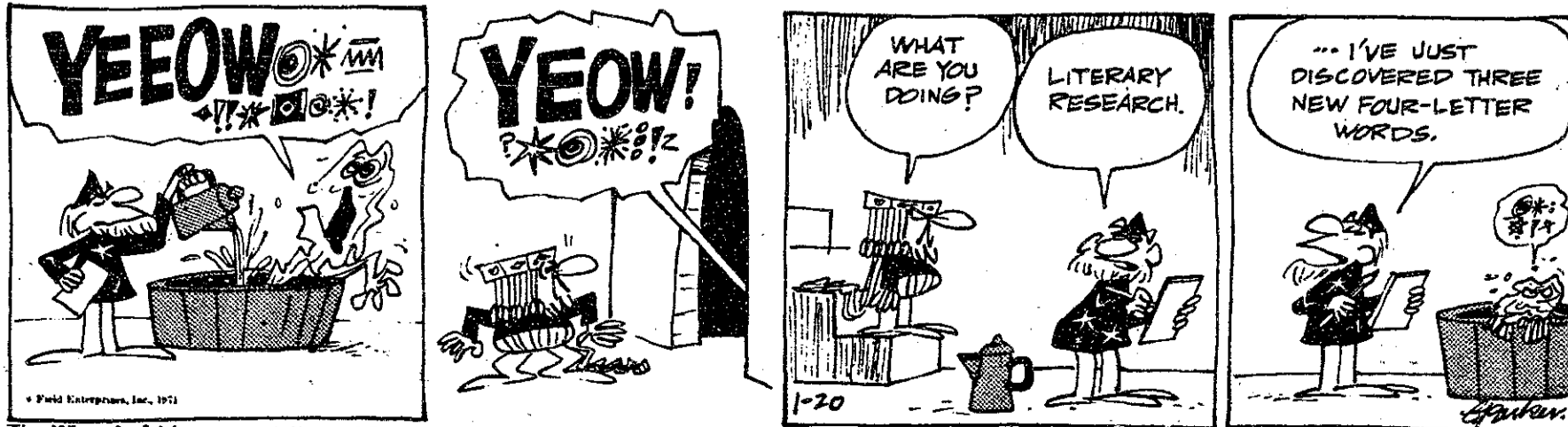
As those waves continued to roll in, above me, I reached out for the flower of our love, but it was not there. Nor did I find any peace.

That evening, the wars from around the world spilled their dead ashore on Marblehead Beach, and among the dead were counted both you and I.

—Harvey Baker

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entertainment

Book:

The Hidden Curriculum

By Alex Makowski

Ever since the Berkeley Free Speech Movement, educators and analysts have been seeking an explanation for the growing student discontent with their universities. Much of the anger that has erupted in years since as political action has been diagnosed as the symptom of a malaise permeating the core of America's higher education system.

MIT Dean for Institute Relations Benson Snyder may well have discovered the key to properly appraising the developing mood on campus. *The Hidden Curriculum* is his penetrating exposition and analysis of the factors underlying current student (and faculty) dissatisfaction.

Soul-searching

With wide circulation, his book could spark some useful soul-searching by MIT faculty members, introspection that would be a valuable beginning to rooting out some of the deficiencies of education here. For it is Snyder's basic thesis that a hidden curriculum exists that supplements and often overshadows the formal curriculum of required courses and catalogue information. This second set of standards includes prevailing faculty attitudes about the role of education (do we turn out daring thinkers or merely competent technicians?), patterns of the reward and grade system (do test marks measure creativity or gamesmanship?), the work expected of students, the academic and scholarly environment (do the faculty associate with and respect their peers in other fields?), Institute rules for social conduct, and the sum total of pressures from the outside world.

Snyder's early and mid 1960's studies of students at MIT, other local schools, and scattered universities across the country and the world convinced him that all too often the hidden curriculum becomes the basis for a student's self-esteem and subsequent career performance. For the traditional scholarly pursuit of knowledge, students have substituted, usually unknowingly, an attempt to measure up to these unacknowledged standards. Inevitably, though, this adaptation must result in major problems: because the hidden curriculum does not apply well to real-world problems and subsequent career work and interactions, success as a student may be merely the prelude to a crashing failure by an executive ill-prepared to meet his job's challenges.

Faculty responsibility

With the faculty must rest the responsibility for tackling the problems posed by the gap between the hidden curriculum and more rationally established

criteria for academic study. While absolving the faculty from premeditated evil intent — "the faculty is not playing a duplicitous game . . ." — Snyder's book can only convince the careful reader that an aware faculty does have the capability to resolve many of the conflicts. After all, they establish the reward structure, they determine (to a large extent) the academic environment, and they are presumably competent enough teachers to recognize that their school's educational process is not producing the desired product.

Hopefully, though, students could also play an instrumental reform role. Undergraduates here bear the brunt of the dissonance between the two curricula: they must often sacrifice their intellectual interests by submitting to a rewards system that at best ignores their creative intelligence. The perceptive and sensitive student will find Snyder's book a salvation, an assurance that blame for the clash between his thirst for knowledge and an impersonal educational system may well rest squarely with the university. Perhaps he will be motivated to join similarly perceptive students and faculty in attempts to improve.

Source of discontent

This hidden curriculum concept, then, captures the essence of the discontent prevalent on many college campuses. The few students at school for a genuine scholarly pursuit of knowledge chafe under a petty and meaningless set of standards that distracts their attention and stifles their creativity, while the more sizable number of students reluctantly on campus because a college degree is *de rigueur* soon tire of school and turn their interests elsewhere. Faculty may attribute slumping attendance and growing restlessness to the wrong causes, unwilling or unable to recognize the role their hidden curriculum plays.

There are other, more subtle or particular, aspects to the second standards. Does the university, for example, encourage an instrumental or expressive approach to learning? "The instrumental student has a pragmatic approach to education . . . such students ask themselves how (or whether) the study of a text or the writing of a paper can help them achieve a higher grade and thus further their specific career of life plans." In contrast, "the expressive student has a more idealistic approach to education . . . studying a text, the expressive student first considers how the text may contribute to his understanding, and only sec-

ondarily how knowledge of the text may contribute to his grade." Charlie Mann '72 highlighted the distinction in his appendix to the Commission report — "It seems as if many students find it difficult to distinguish between grades and learning."

Implications

The implications are clear. Away from the somewhat artificial university reward structure, the professional skilled in the instrumental approach to learning may lack the ability to grasp the problems his job presents. The undergraduate accustomed to studying his discipline by concentrating on passing tests and problem sets could flounder when told to be creative in graduate work. But the university, by its own reward structure and faculty emphasis, can encourage the individual development of the expressive approach.

Another crucial facet is the growing demand on the individual faculty members' time. Increasingly, professors must squeeze more and more tasks into an already-overcrowded schedule. Research and class time must compete with the new demands for more contact with students, service on faculty committees, and the like. This time factor could spell the difference between success and defeat for many an educational experiment; faculty/student committees, for example, that increase the pressure on a professor's schedule (and nerves) may only exacerbate relations.

Experiment

In fact, Snyder takes pains to emphasize the hidden curriculum's foreboding presence in the background of any attempts to experiment with the formal curriculum. Failure to anticipate the hidden curriculum's effect could be grievous. A professor, say, who tries to liberalize his class by foregoing compulsory problem sets may be punished with a drop in student interest. Why? The demands of other courses encourage students to neglect the looser subject to concentrate on the heavy work load for other courses.

Elitist schools

A fourth aspect pertains directly to such elitist institutions as MIT. Although professors may reward mere competence with good quiz grades, their special praise is for the creativity most students lack and their courses seldom succeed in developing. "Elitist educational systems are very hard on their students; they sponsor them, they surround them with the best of facilities, they give them close personal attention and nur-

ture their gifts, but finally they make severe judgements on the majority of them." Or, a bit more eloquently, "this faculty attitude cannot but be a source of strain for the ordinary student who is not a Rutherford or an Einstein, or a T.S. Eliot, and who knows it." There are alternatives for the school able to recognize its punishing effect.

And there is one important effect that Snyder mentions almost in passing, but which deserves more emphasis. Often the hidden curriculum may have the effect of shielding the formal curriculum, the subject matter, from a searching, intellectual study. Harried by the constant pressure to meet the second standards, students may neglect to pause and examine whether

the material they are offered is truly relevant or useful: the school's education could stagnate.

Effect

What effect might Snyder's book have? Much depends on its circulation. The more that faculty members read the book, the more that students press their professors for justifications of course content or the evaluation process, the more likely it is that useful reform will take place. For the essence of tackling the hidden curriculum is bringing it out into the open. Using Snyder's book as a guide, the MIT community might eliminate much of the malcontent on campus by stripping away superfluous trappings that only hinder true educational progress.

Movie:

Love Story

By Dea Kleiman

What do you say about a movie that should have been a book? That its Ali MacGraw was not the Jenny that you'd hoped she'd be. That the "love" you once cried for shamed you in its Paramount perfection.

As a book, *Love Story* was readable, believable, and sometimes even beautiful when things were left unsaid. Enough was left to the reader so that gaps could be filled in by fantasized personalized substitutions. When *Love Story* opens on the screen, however, Jenny becomes ready made. The "love" that on paper was believable, now depends on the 1940-type sentimental slobbery of Francis Lai's score. Arthur Hiller has filled in all those necessary gaps . . . or maybe this "love story" is just a continuous one. Scenes progress awkwardly and possibly reality redemptions

such as Ollie IV—Oliver III relations completely miss the point. The book concludes with a sensitively-conveyed reuniting of a father and son. The movie, however, by tear-probing time tactics and unbroken pride barriers, ends on a note of stagnation. "Love is never having to say you're sorry." Arthur Hiller should be.

Ryan O'Neal is a convincing Ollie, as he skillfully conveys sensitivity masked in pride. One of the few other redeeming factors is John Marley who, although he doesn't say much, doesn't have to. He is a perfect Mr. Cavilleri. Besides a few familiar shots of Cambridge, and an exciting scenario of a hockey game, there is not too much else that is worthwhile in this film. What do you say about a movie that failed? That the two-hour wait in the cold just wasn't worth it.

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Gray stresses self-pacing

(Continued from page 1)
teaching from evaluation/certification. Concentrated study and taped or filmed material are other possibilities.

Corresponding to this flexibility in education should be a flexibility in the degree. Gray suggested a "school degree" in engineering as an alternative to current departmental programs. Patterned after such current experiments as the XII-B science program, the school degree would allow a student to style his own engineering education.

'Problem focus'
Another move for greater flexibility Gray proposed was a "problem focus." Horizontal cuts across the current vertical departmental structure would match developing interests in inter-disciplinary fields. Such a change would increase the fields' visibility and resolve the problem of complying with departmental requirements. For example, MIT has the personnel resources and the facilities for an excellent bio-medical program. A horizontal cut linking mechanical and electrical engineering and materials science with the


biology department could spur nationally-acclaimed work.

Moving to the curriculum content, Gray stressed that MIT must rely on graduate schools and future employers to provide a professional education. Long ago the school gave up the goal of providing a complete engineering training in four years, but some departments still try to provide a start. Continue to develop individual independence and the ability to tackle engineering applications, Gray encouraged, but erase from the undergraduate curriculum the vocational work more appropriate to

future study.

Integration of work experience with educational programs was the final suggestion. "Extremely valuable" co-op and work/study programs could prepare the student for recognizing and dealing with engineering applications, while familiarizing him with his education's utility. Industrial work, Gray pointed out, could also provide an attractive possibility for meeting rising education costs.

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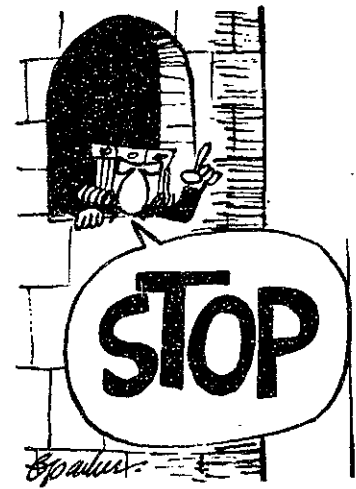
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Ehrmann: colored words show style

(Continued from page 1)
to fill the vacancy "because he was the very best person we could find." Fearing that a person who would be UAVP for only two months might be too easily forgotten, they asked Chisholm to take the position of UAP.

Ehrmann aired his views on the search for the next president of MIT, with which he has been actively involved as a member of the Corporation Joint Advisory Committee. "I don't share the view that CJAC is not listened to; great minds run in the same ruts. I'm sure that if CJAC did not approve a candidate he would never become president."

The discussion then wandered to one of the year's more controversial issues - the Student Homophile League's fight to

hold a mixer on campus. "It's a disappointment that our community is in the state it is. When we (the GA) came on the scene there was no communication at all, there was no one at all to study the issue. "My feelings have been ambivalent. Confrontation is alien to my nature. I can be pushy but that's about as far as I can go." Ehrmann said that he did think that there will be a Homophile League mixer on campus, "and I think it'll be fairly soon too."

An idea conceived by "just me" exposed many people to what Ehrmann termed his "purple flaccid writing style." "I don't think there is anything around here that I can take full credit for with the possible exception of HoToGAMIT."

Prof. explains 'conversion'

(Continued from page 1)

problems in the two fields. In human rehabilitation it became more difficult to define the problem, the research was more difficult, funding was hard to attract, it was difficult to test new hardware, and almost impossible to sell it to a commercial group for development.

In the missile field, on the other hand, none of these problems had existed. The problem was relatively well-defined, funding was readily available, hardware testing was easier because the requirements were more well-defined, and selling the end product to commercial concerns was no problem at all.

Describing the commonly-used artificial arm, Mann described it as technologically crude. The device relied on a pair of cables for its motion, one cable being controlled by hunching the shoulders and the other by lifting and lowering the stump. At the time of his entry into the field, Mann pointed out that there was no "arm" which was self-powered.

The so-called "Boston arm," developed at MIT, employed electromuscular impulses in the remaining arm muscles to control the "arm's" power, instead of using the strength of the wearer.

Other groups are working on computerized Braille translation, and other sensory aids for people with sight and speech impediments.

As an example of the problems faced in the field of human rehabilitation, Mann asked, "How would a deaf-blind person sense a fire-alarm?" The only way to communicate with such severely-handicapped people was by means of finger-tracing on their backs, which Mann termed as crude. One group at MIT was able to develop an induction motor, controlled by a cable in the room, which would vibrate and transmit coded signals to the wearer.

During the seminar and in a

subsequent interview with *The Tech*, Mann elaborated on some of his ideas.

Hardware important

As a design engineer, Mann emphasized the importance of producing hardware. Further, he stated that his criterion for a successful design is its introduction into the market at a competitive price. He noted that there is a big difference from a model which is used in a laboratory and one which can be shipped into the field with a reasonable degree of reliability.

Students, he said, should work at the "cutting edge" of a new field, rather than being given more tedious jobs. Educationally, it is important to put the burden of defining and solving the problem on the student, rather than letting professional engineers do the job, even though the latter might be quicker. He added that in a teaching environment, "you can't afford to have too many of or hire the wrong kind of professionals." Since this may mean that development takes longer, it becomes difficult for an educational group to compete in a field like the aerospace industry, where there are definite deadlines and large amounts of money are involved. This, along with their size, is why he feels that the Draper Labs have been unable to involve any significant numbers of students in spite of the efforts of several "pivotal" people.

Mann explained that there were significant difficulties in working in the field of human rehabilitation. While the Department of Health, Education and Welfare provides good support for basic research, there is no

organization like the Department of Defense, which will support development of and furnish a market for hardware.

While health is a 70 billion dollar-a-year industry, and by the end of the decade will be the nation's largest, Mann noted that only 500 million dollars a year are spent on bio-engineering. The potential of the field should be realized rapidly, as he argues that the public is becoming more concerned about the delivery of health services while the number of medical specialists doesn't meet the demand. This, he feels, will lead to a massive infusion of technology.

Mann believes that federal seeding money is essential to the development of new hardware before industry can pick up its development. "An organization is badly needed to focus effort on the amelioration of visual loss." A goal-oriented group which could provide direction on a national level is needed, he said.

Outlining the roles of the present government agencies in the health field, Mann explained that the largest research organization in the field, the National Institutes of Health, is oriented towards bio-medical research.

Student government proposals broached

(Continued from page 1)

must remain, even if the delegates fill only a "fireman" role of responding in emergencies when administrators particularly desire student opinion.

Candid comments

The subject matter provoked several candid comments on the effectiveness and power of the General Assembly. Dean for Student Affairs J. Daniel Nyhart argued that the GA speaks with only moral responsibility, so there are no constraints to the delegates' decision-making. Later he described the Assembly as a group that meets every two weeks to say what's on the tops of their heads. Instead, he seeks the opinion of those students interested enough to work on task forces and committees on the relevant subject. None of the student political leaders present objected to his analysis.

Judging from the people present, the Assembly should junk most of its decision-making attempts. The opportunities for true student policy roles are too limited, and the mechanism for

Footnotes*

* "O Tiger-lily," said Alice, "I wish you could talk."

"We can talk," said the Tiger-lily, "when there's anybody worth talking to." - Lewis Carroll

* "What do you suppose is the use of a child without any meaning? Even a joke should have some meaning - and a child's more important than a joke, I hope." - The Red Queen

* "If the Bread-and-butterfly cannot have its proper food it must die. 'But that must happen often,' said Alice thoughtfully. (Children will think if we only let them.) 'It always happens,' said the Gnat." - Lewis Carroll

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representation too flawed, to justify the GA decisions as representing the students' will.

Student power

Other decisions centered around the power students working through the government have. Ed Grossman '71 suggested that the Nominations Committee has a greater effect than the Assembly, since they place students on faculty committees. Finboard, with its annual budget reviews, also wields some measurable clout.

But even these powers may be illusory. Chisholm noted that the General Assembly has discretionary power on a low \$1500 each year. And Smullin warned that the MIT faculty committees do not command nearly as much power as the departmental committees, the groups that pass judgement on tenure and degree requirements.

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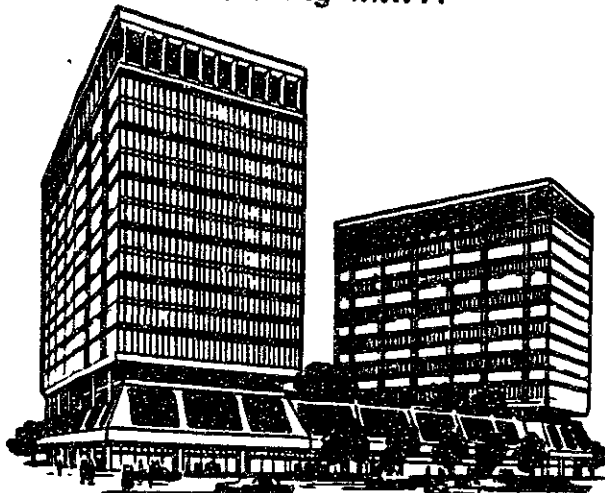
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-Eugene Field, A Tribune Primer

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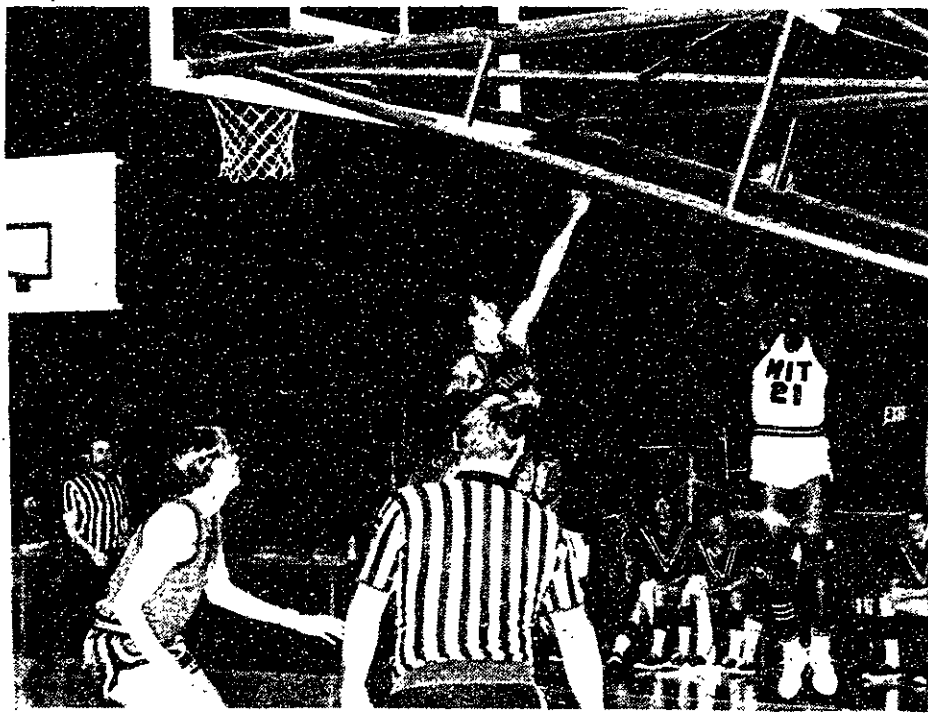
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(Photo by Sheldon Lowenthal)

Coed B-Ball planned for next term's IM's

In addition to the regular intramural basketball action, the IM office has announced that it will sponsor a coed basketball league, open to all MIT men eligible under current IM rules, as well as MIT coeds, Wellesley cross-registered students, and Wellesley students affiliated with MIT living groups.

The one major rule change that will apply to the coed league stipulates that each team must have at least two male and two female players on the court at all times. Referees will be

supplied by the teams involved in each contest.

The team will each play one game per week for four or five weeks in February and March. The games will be played on Sunday through Thursday evenings, as well as on Sunday afternoons. The present plans call for the games to be played in the duPont Gymnasium.

Rosters including the names of all the men and women who will be playing should be submitted to the IM office on the second floor of the duPont Athletic Center in room W32-123.

Alpine team best in years

By Drew Jaglom

Last weekend at the New England Collegiate Cup Races at New England College in Henniker, N.H., three members of the MIT Alpine ski team made the best Alpine showing by Tech racers in ten years. Veteran skiers Steve Nadler '73 and John Schultz '71, and freshman John Nabelek, all performed magnificently in the slalom and giant slalom against such schools as Dartmouth, University of New Hampshire, Keene State, University of Massachusetts, Colby, Bates, and Harvard.

The field of 100 racers was

divided into two groups of about 50 each, according to Eastern FIS point standings. Each group raced in two slalom and two giant slalom races. In six of the eight races MIT had at least one top-ten finisher.

"A" racer Nadler turned in three great performances to finish 3rd in a slalom and 3rd and 4th in his two giant slaloms. Schultz also skied well, to place 3rd in one giant slalom, 8th in the other, and turned in 7th and 10th place finishes in the slalom races, while Nabelek placed 18th and 21st in the two giant slaloms in which he competed.

In several of the races MIT skiers were beaten only by the top racers of some of the best teams in the East, such as Dartmouth and UNH.

On Wednesday the Alpine team goes to Sugarloaf, Maine, for a giant slalom, and then joins the Nordic team at Bates for a four-event competition. The weekend of the 9th the cross-country team turned in a 21st place finish in a field of 41 teams, all tough competition, at Dartmouth. They have improved markedly since that first meet of the year, with frequent workouts, and should be in fine shape for the Bates meet this weekend.

Trackmen lose, marks fall

In its fourth dual contest of the season, the MIT indoor track team dropped a 63-41 decision to Tufts, on the Medford school's track. Although the Tech thinclads overpowered Jumbos in the field events, Tufts blanked the Engineers in the mile run, the 45 yard high hurdles, and the 600 yard run. They also won the mile relay, and swept first and second places in two other events.

Brian Moore '73, Ray Mayer '72, and Richard Solbrig '72, placed 1-2-3 in the 35 pound weight event for MIT, as Moore continued his successful season with a toss of 55'2". The Engineers also swept the long jump, with Scott Peck '73 leaping 21'9" to win, followed by Dave Wilson '73 and Keith Killough '74.

Moore also won the shot put, but Tech was unable to back up his 47'10 1/4" effort, and Tufts took the next two positions. In the high jump, Walt Gibbons '73, set a new school record with

a leap of 6'6", surpassing a mark that had stood since 1955.

Sophomore Dave Wilson captured the pole vault contest with an outstanding effort of 14'6", and Edwin Rich '72 took second place with a vault of 12'.

In the sprints and hurdles, the best MIT could take was Elliot Borden's third in the fifty yard dash, as the Tufts squad mounted impressive opposition, winning the fifty in 5.5 seconds and the hurdles in 6 flat.

Myers placed second in the two mile run for the Engineers, but in the 1000 yard run, Bob Ryan of Tufts tied the track record with a time of 2:14.4. John Kaufmann '73, placed third for MIT.

The loss, MIT's first this season, gave Tufts a 9-8 edge in the series which dates back to 1938.

In the US Track and Field Federation Regional Championships and the annual Eastern Relays last weekend, Wilson and

Gibbons, Tech's vaulter and high jumper respectively, both turned in impressive performances. Wilson successfully defended his UST&FF title with a vault of 14' and placed in the Relays, going to a height of 14'6". Gibbons approached the MIT varsity high jump mark, turning in jumps of 6'4" and 6'4 3/4" in the two meets.

On Deck

Thursday

Wrestling (V,F) Harvard, Home 6:00 PM

Friday

Hockey (V) Lafayette, Home 7:00

Skiing (V) Bowdoin Inv., Sugarloaf, Me.

Saturday

Skiing Bowdoin Inv. Basketball (F,V) Lowell Tech, Home 6:15

Hockey (V) St. Anselm's, at Manchester, N.H. 8:15

Tuesday

Basketball (V) Wesleyan, Home 7:30

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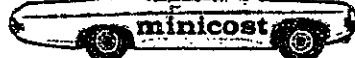
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